

JOURNAL OF INTERDISCIPLINARY PERSPECTIVES



Volume 2, Issue 8, No. 1
August 2024

Published monthly by:
The Wise Researcher
www.jippublication.com

JOURNAL OF **INTERDISCIPLINARY** PERSPECTIVES

Indexed in:



Google Scholar



[This page is left intentionally blank]

Editorial Board

Editor-in-Chief

Angelo A. Acenas, PhD (c)

Editorial Board Members

Anastacio G. Pantaleon, Jr., PhD
John Robby O. Robinos, PhD
Josefina D. Ortega, PhD
Diosdedet C. Labordo Jr., PhD
Victoriano P. Barliso Jr., PhD
Christian T. Galgao, PhD
Jesson L. Hero, PhD
Maria Chona Z. Futralan, PhD
Debapriya Ghosh, PhD
Francis Ion C. Sangil, PhD
Princess Fe Caballes-Deliva, PhD
Ana Isabel M. Mardones, PhD
Jeddah Q. Justol, PhD
Jaime Boy U. Ngag Jr, PhD
Carlo Joseph M. Juanzo, PhD
Ian Gaylawan Caliba, PhD
Domenic T. Sanchez, PhD
Josefina C. Ochoa, PhD
Marivel F. Paycana, PhD
Leo D. Rayon, Jr., PhD
Christina Dionisio- Vicencio, PhD
Jon Paul M. Reyes, PhD
Darwin D. Diola, PhD
Josephine O. Oted, PhD
Edgar O. Fernandez, EdD
Roniel Sanchez Fortuna, EdD
Christopher S. Vicencio, EdD
Denmark S. Macalisang, EdD
John Clifford M. Alvero, EdD
Romario P. Ybañez, DPA
Michael Jere' D. Abiol, DM
Jereco Jims J. Agapito, DM
Rosalinda Saquing-Guingab, DComm
Maria Domnena I. Anog, Dev.EdD
Ronald E. Almagro, PhD (c)
Carie Justine P. Estrellado, PhD (c)
Noel P. Munda, PhD (c)
Orville J. Evardo Jr., PhD (c)

Renniel Jayson J. Rosales, PhD (c)
Jay B. Fallan, PhD (c)
Mee Ann Mae Loria-Tungol, PhD (c)
Nikka Mae J. Adling, PhD (c)
Jolo Van Clyde S. Abatayo, PhD (c)
Abraham P. Anqui, PhD (c)
Ofelia A. Labrado, PhD (c)
Felix E. Arcilla Jr., PhD (c)
Jigger M. Tomarong, PhD (c)
Louiesito A. Magnaye, Jr., PhD (c)
Anthony A. Alagon, PhD (c)
Pramita Kaur Sidhu, PhD (c)
Eugene B. Dodongan, PhD (c)
John Vincent L. Santos, , PhD (c)
Roberto L. Rodriguez Jr., PhD (c)
Joshua Urrete, PhD (c)
Raymund M. Igcasama, EdD (c)
Glen B. Millar, EdD (c)
Charlene Joy G. Oliveros, EdD (c)
Mary Joy E. Guevarra, EdD (c)
Frances Allen P. Eballa, EdD (c)
Mary Cecille C. Arciaga, EdD (c)
Ryan C. Tura, EdD (c)
Neilbrien A. Pamo, EdD (c)
Jhon Benedict L. Layoc, EdD (c)
Francisco J. Sedillo Jr., DM (c)
Devin L. Revilla, DM (c)
Jordan M. Cabaguing, DBA (c)
Moses G. Manalang, DBA (c)
Shiela Marie B. Alia, ME, MSc
Francis C. Rayo, MAEd
Jhonas S. Lumanlan, MAEd
Sheenah May P. Manggao, MAEd
Emmanuel L. Templa, MPA
John Louise M. Marcaida, MPES
Reynald Alfred G. Sy, MAELT
Mae Anne M. Villarosa, MASE

Editorial Staff

Rosellnica B. Acenas, LPT

The **Journal of Interdisciplinary Perspectives (JIP)** is a scholarly publication that embraces both multidisciplinary and interdisciplinary approaches. It operates as a peer-reviewed, open-access journal available in both printed and online formats. Manuscripts meeting the general criteria of significance and scientific relevance are welcomed for submission to the Journal.

JIP publishes original research articles from diverse fields to foster cross-disciplinary collaboration and the exchange of ideas. We welcome contributions from a wide range of disciplines, including but not limited to: Education, Business and Management, Engineering, Science and Technology, Philosophy, Religion, Humanities, Psychology, Social Sciences, Information Technology, Economics, History, Languages, and Agriculture.

Our mission is to harness the power of research for positive impact by facilitating simplified, accessible, and quality publication of relevant research works across various disciplines at all levels of education.

Copyright 2024

By The Wise Researcher

All rights reserved.

Copying of a single article for research purposes is permitted, but multiple reproductions of parts thereof without the written permission of the copyright owners constitute a breach of copyright.

Published and exclusively distributed by **The Wise Researcher**

Address: Katipunan St, Tisa, Cebu City, Philippines

Tel # (+32) 238 2027

Email: submissions@jippublication.com

Table of Contents

	Page
1 Implementation of Minimum Health Protocols for Dine-in Restaurants in Dumaguete City, Philippines <i>Sheena T. Guevarra, Ryan O. Tayco, Millard Vaughn Tubog</i>	6
2 Influence of Consumers' Sanitary Practices on Purchasing and Dining-out amidst the COVID-19 Pandemic <i>Glennen Y. Zamora, Ryan O. Tayco, Ma. Leroz P. Rizada</i>	16
3 The Influence of Social Media as a Tourism Marketing Tool in Negros Oriental, Philippines <i>Ryan O. Tayco, Millard Vaughn Tubog, Glennen Y. Zamora</i>	24
4 Environmental and Socioeconomic Impact Analysis of Quarry Operations in General Santos City on its Host Communities <i>Jama Nardzmah L. Ngilay, Leonard V. Flores</i>	36
5 Local Government Unit Initiative on Implementing Marine Protected Areas in Barangay Kamanga and Colon, Maasim Sarangani Province <i>Ryan S. Jama, Leonard V. Flores</i>	47
6 The Lived Experiences of Teachers' Teaching Oral Communication Through Modular Distance Learning during the Pandemic <i>Cris Dyan R. Abarca</i>	62
7 Sustainable Coastal Tourism Practices in Aklan: Bases for Policy Recommendations <i>Probee Bea P. Estuya, Tonylen S. De Jose</i>	74
8 The Phenomenon of Teachers' Burnout: Its Implication for Job Satisfaction <i>Joanna Mae L. De la Cruz, Denmark S. Macalisang</i>	84
9 Prevalence of Consumers Purchasing Antibiotic Medicine Without Prescription Among Community Pharmacies <i>Ronnel C. Garcia, Claudette M. Tugna</i>	92
10 Service Quality and Client Satisfaction in Calamba City Civil Registry <i>Alexandra V. Carreon</i>	99
11 Development and Efficacy of Child's Holistic, Individualized Learning and Development Program for Children with Autism <i>Raul S. Gana, Marie Ann S. Vargas</i>	114

12	Exploring the Challenges of Printed Modular Instruction for Learners with Special Needs	120
	<i>Mirbeth A. Pinote</i>	
13	School Heads' Leadership Quality, Organizational Climate, and Learning Environment as Predictors of Teachers' Innovativeness	125
	<i>Juanito Jr. B. Gabutan, Janet C. Parpa, Edwin C. Du</i>	
14	Level of Online Media Literacy of Collegiate Students: Basis for a Proposed Curriculum Enhancement Program	137
	<i>Eduard M. Riparip, Dennis G. Caballes</i>	
15	Assessment of Behavioral Intention to Adopt Educational Mobile Application in Advanced Mathematics for Engineering Education	151
	<i>Aura Marie B. Novesteras</i>	
16	Rainwater Harvesting Systems (RWHS): The Multi-Level Perspective towards Sustainability Transition	158
	<i>Ingrid B. Juele, Edward R. Laping</i>	
17	Environmentally Conscious Tourism: Lessons from the Successful Rehabilitation of Boracay Island	175
	<i>Chriszela R. Sabandal, Gynnyn G. Gumban</i>	
18	Tourist Satisfaction Experience With Boracay Information Guide Application: Bases for Sustainability Plan	189
	<i>Khina Marie Dela Torre-Prado, Christopher D. Tolores</i>	
19	Boosting Literacy: Evaluating the Impact and Satisfaction of Project DARA (Daily Reading Activities)	198
	<i>Joewe G. Sales</i>	
20	Political and Social Viewpoints of High School Students: How do Social Media Influencers, Cancel Culture, and Political Correctness affect these?	212
	<i>Zamir Adriel T. Ortega, Richelle Louveine B. Puerto, GhenardV. Fernandez, Leahkim Asseren S. Mabalay, Quelvin Renzo G. Sugay, Joseph A. Villarama</i>	

Table of Contents

		Page
21	Fuel Price Increase: Unveiling the Torments and Agonies of the Transportation Sector – Basis for Policy Formation <i>Cydeah Aldic J. Conchas, Roel Jr. D. Apas</i>	217
22	From Preparation to Presentation: Student Nurses' Transformative Research Dissemination Journeys at Off-Campus Academic Conferences <i>Jayson M. Bimuyag, Christopher Ian N. Gaerlan</i>	232
23	“I deserve this”: A Phenomenological Study Toward Online Impulse Buying Behavior of Service Contractors <i>Kristine N. Somera</i>	239
24	Adoption of Climate-Smart Rice Production Practices and Technologies: A Tool Towards Rice Production Efficiency and Agricultural Sustainability <i>Ma. Rosa Prada Allera, Leonard V. Flores</i>	255
25	Money Savvy: Development of an Instructional Module Integrating Financial Literacy in Teaching and Learning Business Mathematics <i>Dude Ryan O. Obamos</i>	266
26	Impact Assessment of an Income-Generating Project <i>Noriegen I. Amacio, Farhana U. Alauya, Queenie Lyn G. Almercz</i>	271
27	Property Management Practices Implementation and Cost Measures Efficiency in the City Government of Calamba: Basis for Action Plan <i>Maria Lorena G. Dela Cruz</i>	278
28	Spoken Discourse Competence of Grade 5 ESL Learners: Inputs to Teaching Speaking <i>Mark Joseph B. Zapanta</i>	291
29	Implementing Machinery Distribution Program on Sustainable Agriculture and Rural Development: Basis for Action Plan <i>Deo G. Rivera, Joy P. Flores</i>	299
30	Challenges in Instructional Supervision: A Phenomenological Study of Master Teachers in Cabuyao <i>Lory Lyn M. Andal</i>	310
31	Strategies Employed by Senior High School Students in Learning General Mathematics <i>Jezrel R. Palumar</i>	325

32	Fatigue Severity and Psychological Well-Being of Junior Medical Interns as Mediated by Rumination	335
	<i>Kristyl Joyce V. Pascubillo, Geraldine F. Santos</i>	
33	The Grassroots Reality: A Scoping Review of the Mother Tongue-Based Multilingual Education (MTB-MLE) Implementation in the Philippines	345
	<i>Czarina Alexandria P. Wata, Charis G. Oraiz, John Louie D. Galang, Cristian V. Dones</i>	
34	Assessment and Evaluation of a School-based Values Formation Program	354
	<i>Christopher A. Olaya</i>	
35	Internal Control System Landscape of a State University in a Highly Urbanized City	362
	<i>Jet R. Nillos, Rowena M. Libo-on</i>	
36	Initiatives of City Government of Calamba and Awareness of City on Plastic Dependency Reduction: Basis for Action Plan	377
	<i>Ronn Martin C. Reyes</i>	
37	Knowledge and Preventive Practices on Community-Acquired Pneumonia Among Residents in General Santos City	391
	<i>Jules Alexis B. Dajay</i>	
38	Effective Technology Integration: Closing the Digital Gap among High School Students	397
	<i>Ramonito Ariel A. Cabasan</i>	
39	Product Development and Market Acceptability of Lemon Grass Bottled Tea (<i>Cymbopogon citratus</i>)	408
	<i>Jade Mark C. Salubre, Jennifer T. Pelegrino, Juma P. Wabinga, Juanita C. Leopoldo</i>	
40	A Historical Review of the Molecular Phylogeny of the Philippine <i>Nepenthes</i> L. (Nepenthaceae) with Notes for Unsampled Taxa	422
	<i>Samuel C. Brillo, Julius John D. Salamanes, Eleanor S. Austria</i>	

Table of Contents

	Page
41 Towards An Integrated Structure and Agency Construction of Political Rights in the Philippines <i>Milrose Patawaran-Llenas, Emmanuel D. Batoon</i>	441
42 Relationship Between Perceived Impulsive Buying Behavior and Allowances of Students <i>Gabriel Joseph C. Pascual, Andrea Ella Mae L. Ongchap, Alyssa Shannen O. Calacday, Angel Anne Eumi O. Castillo, Rosanne Coleen B. Cuartero, Krixian Irish M. Rarang, Jemish Marielle R. Retamal, Mary Vida L. Tumbali</i>	452
43 Adoption of Artificial Intelligence Technologies in the Philippine Construction Industry: A Review of Literature <i>John Vincent L. Santos, Joefil C. Jocson</i>	461
44 Coping Through the Unforeseen: Comparison of Adaptive Strategies on Learning Modalities of Students in Public and Private Educational Institutions <i>Joaquin Dave M. Arquero, Francheska Reine S. Dela Cruz, Avril Christi B. Soriano, Althea Kim Albert R. Belmonte, Jose Miguel N. Romero, Joseph A. Villarama</i>	472
45 How Modern Machinery Replaces Laborers? A Comparative Study of Their Livelihood Before and After Implementation <i>Verline Gaudeene A. Dilla, Reginald Ludwig G. Dalusong, Lesley Jane R. Elacion, Franz Cedrick R. Mina, Roxzyleen Andreih C. Vasquez, Joseph A. Villarama</i>	479
46 Breaking Free from Plastic: The Philippines' Journey towards Sustainable Consumption and Production <i>Eduardo K. De Guzman, Alfredo M. Estaeban Jr.</i>	488
47 Influence of Self-Efficacy, Teachers' Stress, and Demographics on the Teachers' Work Commitment and Intention to Stay <i>Christine Joy C. Borres, Joel D. Potane</i>	496
48 Facing Job Uncertainties: The Lived Experiences and Challenges Encountered by Government Contractual Workers <i>Rolando II R. Abanto, Anna Rose T. Marcelino, Roldan P. Oyao</i>	512
49 Customers' Acceptance and Willingness to Pay for Mandated Septage Management Services of Calamba Water District <i>Junsy P. Ybuan-Nieron</i>	522
50 Stars and Spikes: Analyzing Fan Attraction to Star Players in the Philippine Professional Volleyball League <i>Edward P. Kho, Marla Frances T. Mallari</i>	534

51	Assessment of Road Safety Through Geometric Design Analysis: The Case of Sagonsongan Diversion Road in Marawi City	544
	<i>Jalaloden M. Motalib, Nassib U. H.Nasser, Jamshed D. Mangacop, Abdul Warith M. Mamaingco</i>	
52	Academic Resilience in the Face of Internet Challenges: A Narrative Analysis of Tertiary Students' Experiences	551
	<i>Abusailan P. Akmad</i>	
53	Towards a Communist Armed Conflict Indigenous Settlement Framework: Revisiting Vietnam, Singapore, and Taiwan Experience	564
	<i>Jose Mari C. Jasmin</i>	
54	School Principal's Leadership Style and Teachers' Job Performance: A Systematic Review of Literature	573
	<i>Coulyn B. Ortiz, Leonora F. De Jesus</i>	
55	Beyond Winning: Lived Experiences of Thriving Young Professionals Raised in Solo-Parent Families	581
	<i>Giselle Ann E. Manansala, Gladiola A. Eje-Dimaculangan</i>	
56	The Kandings: A Study on Sex for Drugs in Iligan City	598
	<i>Jovell Nicole S. Along, Renebel O. Labadisos</i>	
57	Big Five Personality Traits Predict Academic Self-Efficacy Among Undergraduate College Students	612
	<i>Maria Angelynne Dasigan, Mika Jeanela Pagalaran, Nicole Mij Anne Mauleon, Kim Daniel M. Sanchez</i>	
58	Pamakyabe: Acculturation and Basic Psychological Needs Through the Lens of Adolescent Mag-Indi Aetas of Floridablanca, Pampanga	618
	<i>Paulino B. Susim</i>	
59	Career Trajectory: A Longitudinal Analysis of Criminology Graduates' Attributes and Professional Success in a Private HEI	630
	<i>John Robby O. Robinos, Ricky Boy Camilon, Fortunato Sagudo Jr.</i>	
60	Navigating Shotgun Marriages: A Study of Baby Boomer Husbands' Well-Being	637
	<i>Meri Genesis I. Badillo</i>	

Implementation of Minimum Health Protocols for Dine-in Restaurants in Dumaguete City, Philippines

Sheena T. Guevarra, Ryan O. Tayco*, Millard Vaughn Tubog
Negros Oriental State University, Dumaguete City, Philippines

*Corresponding Author Email: ryantayco@norsu.edu.ph

Dated received: June 1, 2024

Date revised: June 14, 2024

Date accepted: June 19, 2024

Originality: 99%

Grammarly Score: 99%

Similarity: 1%

Recommended citation:

Guevarra, S., Tayco, R., Tubog, M.V. (2024). Implementation of minimum health protocols for dine-in restaurants in Dumaguete City, Philippines. *Journal of Interdisciplinary Perspectives*, 2(8), 6-15.

<https://doi.org/10.69569/jip.2024.0254>

Abstract. This study aimed to assess the implementation of minimum health protocols in dine-in restaurants in Dumaguete City. The researchers employed a descriptive research method using correlational techniques. The study focused on the owners, managers, and customers of dine-in restaurants, who were selected as respondents through convenience sampling. Results indicated that dine-in restaurants in Dumaguete City fully adhered to the government-mandated health protocols. Customers reported that the dine-in establishments they visited consistently implemented these protocols. Compliance with these measures was crucial for the restaurants to continue operating in the new normal. The study highlighted significant challenges faced by dine-in restaurants during the COVID-19 pandemic, including financial and operational impacts, adjustments to new norms, and adherence to government protocols. Additionally, the research revealed correlations between these challenges and various aspects of the restaurants' organizational profiles, such as the number of part-time employees and business hours. One of the primary challenges identified was the adherence to government protocols. The findings suggest that dine-in restaurants in Dumaguete City should maintain strict implementation and monitoring of the health protocols set by the government to ensure the safety of their services and products. Adhering to these safety and health protocols is essential for controlling the spread of COVID-19 and providing a safe environment for customers.

Keywords: COVID-19; Restaurant industry; Minimum health protocols; Dine-in restaurant; Descriptive method; Dumaguete City; Philippines.

1.0 Introduction

The novel coronavirus, also known as COVID-19, was first discovered in December 2019 in Wuhan, China. Within a short period, the virus has spread throughout the globe, reaching 146,054,107 confirmed cases with 3,092,410 deaths as of April 21, 2021 (WHO Report, 2021), becoming a true pandemic that has severely affected almost every country, with the Philippines, as no exception. In the first COVID-19 situation report of the Philippines to the World Health Organization (WHO) last March 9, 2020, the country only recorded seven (7) positive cases, of which the first case was recorded to have traveled in Negros Oriental, particularly in Dumaguete City. This made the Department of Health raise the COVID-19 alert system to Code Red Sublevel 1 to prepare for a possible increase in suspected areas in the country and to facilitate the mobilization of resources, including procurement of critical logistics and supplies (WHO Report, 2020). The country remains in Stage 2, localized transmission, with some geographic areas showing higher transmission intensity and indications of widespread community transmission with 574,247 positive cases (WHO Report, 2021).

With this, many industries have been suffering, including the food and beverage industry. The health crisis rapidly led to an economic decline due to the measures implemented by most countries to contain the virus. As a result, it has significantly impacted the tourism industry, especially in the food and beverage sector. Restaurants had to

close or operate with significant limitations, with only delivery and takeout services permitted (Madeira et al., 2020). Consumers tended to avoid public spaces and maintain distance from others. Even after reopening, authorities mandated these businesses to prioritize delivery services to reduce seating capacities in line with social distancing policies. The future for restaurants is dire, with experts estimating that over half will not survive (Severson & Yaffe-Bellany, 2020). Therefore, it is crucial to make strategic moves to maintain consumer demand during this crisis (Smith et al., 1996) (Sigala, 2020). This study aims to evaluate the extent to which dine-in restaurants in Dumaguete City, Philippines, are following the minimum health protocols set by the Department of Trade and Industry (DTI) and the COVID-19 Inter-Agency Task Force for the Management of Emerging Infectious Diseases Resolutions (IATF-EID).

The food and beverage industry must enforce safety and health protocols to ensure the well-being of employees and consumers. There are also significant concerns about operational restrictions. It is essential to restructure operations to produce and serve food safely, financially viable, and environmentally sustainable (Telukdarie et al., 2020). The virus's rapid spread has prompted nations and organizations worldwide to take urgent measures to protect public health. Many companies have issued guidelines emphasizing consistent hygiene practices, such as regular hand washing and minimizing face touching to limit the spread of the virus. Restaurants and other food establishments have also made significant adjustments by implementing recommended social distancing measures (Mitchel & Lustrin, 2020).

In the Philippines, to support the economy and prevent the spread of the virus, the Inter-Agency Task Force against Emerging Infectious Diseases (IATF-EID) has approved health protocols for dine-in operations based on the Department of Trade and Industry findings. Adhering to these guidelines will assist restaurants in staying open despite the challenges of the pandemic and the changing circumstances.

As more and more restaurants reopen in the Philippines, particularly in Dumaguete City, they must take extra measures to prioritize quality service, safety, cleanliness, and the implementation of health protocols and standards to ensure the well-being of their employees and customers. The researchers conducting this study are focusing on the need for local government studies to assess the extent of implementation of health protocols. This study will also address whether the mandatory minimum health protocols set by the Department of Trade and Industry and the Inter-Agency Task Force against Emerging Infectious Diseases are fully implemented and complied with by dine-in restaurants in Dumaguete City during their day-to-day operations in the absence of health marshals.

2.0 Methodology

2.1 Research Design

The study used a quantitative approach to gather data on the respondents' profiles, the implementation of minimum health protocols, and the challenges faced by dine-in restaurants. The quantitative approach allows the researchers to obtain a more comprehensive understanding of the implementation of minimum health protocols for dine-in restaurants in Dumaguete City. This study involved descriptive research using a correlational method. Descriptive research aims to provide a detailed portrayal of the characteristics of the population or phenomenon under investigation. The researchers used the correlational method to explore the relationship between variables and their strengths. The correlational approach aims to determine the degree of association between two different variables (Cherry, 2020).

2.2 Research Participants

One hundred sixty-five diner respondents and 38 owners/managers answered the survey questionnaire. The researchers employed two sampling methods. First, purposive sampling was used to gather information from the owners or managers/supervisors of food establishments in Dumaguete City that are still operating during the pandemic. The criteria for selecting food establishments as respondents included: a) being operational during the pandemic; b) being restaurants, bistros, or fast food establishments with ten or more employees; and c) being legally registered. On the other hand, convenience sampling was used to determine the number of customer respondents. This nonprobability sampling method identifies respondents based on proximity and does not necessarily represent the entire population.

2.3 Research Instrument

A questionnaire checklist was used as the main instrument for data gathering. The survey questionnaire is adapted from the memorandum circular no. 20-37 series of 2020 by the Department of Trade and Industry (DTI) on implementing minimum health protocols for dine-in services by restaurant and fast-food establishments and IATF interim guidelines on workplace prevention and control of COVID-19. This memorandum explains the mandatory minimum requirements for the operation of dine-in services and additional control measures to be implemented by food establishments. Reliability analysis was conducted on all items using Cronbach's α coefficient to measure internal consistency.

2.4 Data-Gathering Procedure

For data collection, the researchers requested permission from dine-in restaurant owners/managers and customers and used a questionnaire checklist as the primary instrument. The questionnaires were personally distributed and retrieved by the researchers.

2.5 Data Analysis

Descriptive statistics, including simple frequency counts and percentages, were used to evaluate nominal data. Additionally, weighted mean and standard deviation were employed to summarize the sample and measures. The researchers also performed multiple regressions to analyze the relationships between the extent of implementation of minimum health protocols for dine-in restaurants in Dumaguete City and various factors such as minimum health protocols as perceived by customers, challenges faced by dine-in restaurants amid the COVID-19 pandemic, and the profiles of the respondents.

2.6 Ethical Considerations

A consent form was given to the respondents to participate in the study. In line with the Data Privacy Act of 2012, the researchers are committed to protecting and securing personal information obtained during its mandate. Collected personal information was kept/stored and accessed only by the researchers and was not shared with any outside parties unless written consent was secured.

3.0 Results and Discussion

3.1 Background of the Respondents

Data in Table 1 presents the profile of the respondents of this study. Table 1 shows that on age, the majority of the respondents were aged 20-25. This conforms to the data provided by the Philippine Statistics Authority on the projected population by age group and by single-calendar year interval: 2010-2020 (medium assumption), which totaled 19.5 million (psa.gov.ph). This shows that since they belong to the most employed working group during the pandemic, this age is still active in dining outside. In Chua et al.'s study on customer restaurant choice, this group of individuals is also believed to be capable of earning disposable income and making decisions in restaurant selection.

Table 1 also shows that, regarding gender, most of the respondents are female; out of 162 respondents, 110 are female. Males, 53 or 32, follow this. 10%, and the LGBTQ group, with two respondents or 1.20%. The number of times eating in a restaurant, 2 to 3 times in a month, is the highest with a percentage of 22.4%. In the restaurant economy statistics 2022 posted by *toasttab.com*, a whopping 45% of diners go out to eat multiple times a month. These diners from varying demographics reported in ordering and payment. Lastly, 2 has the highest frequency of 41, or 24.8 %, on the number of companions eating in the restaurant. During the pandemic, restaurants had to undergo major logistical modifications and retrofitting to make in-house dining crisis-adaptive. This led to the removal of some tables and chairs to spread customers out when dining. In addition, the risk of contracting the virus also limits people's dining out. Some experts and health organizations have taken it upon themselves to assess the hazards of eating with others.

Table 1. Descriptive statistics of the socio-demographic profile of respondents

Variables	Frequency	Percentage
Age		
61 and above	1	0.61
56 – 60	2	1.21
51 – 55	1	0.61
46 – 50	4	2.42
41 – 45	7	4.24
36 – 40	10	6.06
31 – 35	7	4.24
26 – 30	25	15.15
20 – 25	83	50.30
18 – 19	25	15.15
Gender		
Female	110	66.70
Male	53	32.10
LGBTQ	2	1.20
Number of Times Eating in the Restaurants (Monthly)		
0	3	1.8
1	41	24.8
2	37	22.4
3	37	22.4
4	13	7.9
5	18	10.9
6	4	2.4
7	1	.6
9	1	.6
10	9	5.5
11	1	.6
No of Companions Eating in the Restaurants		
0	3	1.8
1	8	4.8
2	41	24.8
3	38	23.0
4	27	16.4
5	20	12.1
6	11	6.7
7	3	1.8
8	6	3.6
10	4	2.4
11	1	.6
12	1	.6
20	1	.6
25	1	.6

3.2 Profile of the Dine-in Restaurants

Data in Table 2 presents the profile of the dine-in restaurants. Table 2 shows that, of the types of restaurants, people prefer to eat in American/casual restaurants, with a frequency of 12 or 31.58%, according to Chua et al.'s study. On customer restaurant choice, they emphasized that customers eating in quick-casual dining restaurants look for a limited-service style, moderately priced food in a casual dining atmosphere. Customers look for quick but serve more quality food, which is a priority during the pandemic. Consumers who perceive the COVID-19 threat to be high will prefer private room dining restaurants or private tables in a restaurant. This prediction was based on several theories. First, the behavioural inhibition system theory (Elliot, 2006) suggests that the anxiety caused by the pandemic can generate avoidance behaviour, such as increasing physical distance from others in social interactions. The desire for safety increases, and thus, people avoid other people who might carry COVID-19 (Crandall & Moriarty, 1995). In response to COVID-19, many individuals stockpile supplies or take extreme measures to avoid contact with others. Consumers are also hesitant to dine out at restaurants and bars. Given these conditions, exploring the different factors that could encourage consumers to resume visiting restaurants is crucial. Accommodation in private restaurant rooms is an essential factor in consumers' perception and evaluation of restaurants (Hwang & Yoon, 2009; Tse, So, & Sin, 2006; Yim et al., 2014). The choice of dining in private rooms and fine restaurants with limited seating capacity was also reflected in the data, with a frequency of 6 or 15.79% of the total respondents.

Table 2. Descriptive statistics of the profile of the dine-in restaurant

Variables	Frequency	Percentage	Variables	Frequency	Percentage
Type of Restaurant			Job Position		
Al Fresco	1	2.63	Owner	4	10.53
American/Spanish/Casual/ Restaurant	12	31.58	Manager	25	65.79
Bistro	1	2.63	Supervisor	8	21.05
Café	2	5.26	Not Stated	1	2.63
Family Style	1	2.63	Operating Hours		
Fast Food Chain	4	10.53	8	4	10.5
Fine Dining/Private Rooms	6	15.79	9	2	5.3
Function and Resto	1	2.63	10	4	10.5
Quick Service	1	2.63	11	7	18.4
Semi Fine Dining	3	7.89	12	8	21.1
Resto Bar	1	2.63	13	4	10.5
Not stated	5	13.16	14	4	10.5
Number of Employees			15	1	2.6
Not stated	13	34.2	16	1	2.6
4	5	13.2	17	1	2.6
5	3	7.9	18	1	2.6
6	3	7.9	24	1	2.6
7	4	10.5	Years in the Business		
9	1	2.6	Less than one year	1	15.7
10	1	2.6	1	6	15.8
14	1	2.6	1.5	1	2.6
15	1	2.6	2	2	5.3
16	1	2.6	3	2	5.3
20	1	2.6	4	4	10.5
22	1	2.6	5	4	10.5
27	1	2.6	6	5	13.2
28	1	2.6	10	1	2.6
58	1	2.6	11	1	2.6
No. of Part-time Employee			13	2	5.3
0	26	68.4	18	1	2.6
1	2	5.3	21	1	2.6
2	3	7.9	34	1	2.6
3	3	7.9	35	1	2.6
6	1	2.6			
7	1	2.6			
11	1	2.6			
15	1	2.6			

N = 38

On the other hand, the number of employees in restaurants was also reduced. Layoffs and reductions were one of the major problems that restaurants faced during the pandemic. Restaurants were battered by COVID-19, with one in 10 permanently closed during the pandemic, according to estimates from food industry research firm Datassential. This has caused restaurants also to limit the number of employees, as reflected in the data. Data shows that dine-in restaurants in Dumaguete only employed and maintained four (4) staff in all their service operations.

Table 2 also shows that the majority of the respondents are working as managers in restaurants. This is simply because owners employ trusted people to run the business. Managers are chosen because of their competence and leadership roles in business management. It also shows that most restaurants in Dumaguete City only operate 12 hours a day during the pandemic. Restaurants have trimmed their weekly operating hours by 7.5%, or 6.4 hours, compared with pre-pandemic schedules, according to a new report from Datassential. This is due to the restrictions and curfew imposed by the Government during the pandemic that limits restaurants in their operation.

For years in business, most restaurants have been operating for one (1) year, which means they are new. Many discussions have been held, and predictions have been shared about restaurant closures and COVID-19. However, the results are the opposite: Restaurants and food businesses, an industry struck by the pandemic, have seen many brand-new business openings amid the increased challenges. The continued operation of these establishments has

been made possible by prioritizing health and safety measures and implementing new strategies to accommodate customers, such as offering outdoor services and dining options (*qsr magazine.com*).

3.3 Minimum Health Protocols Implemented in Dine-in Restaurants

As Perceived by the Dine-in Restaurants

Table 3 shows the extent of implementation of minimum health protocols for dine-in restaurants. The study conducted by Ocampo et al. (2020) illustrates the implementation of minimum health protocols for dine-in restaurants. These protocols, including face masks, were introduced as part of the lockdown relaxation measures implemented by the Philippine Government in response to the COVID-19 pandemic to provide additional time for developing vaccines and antiviral drugs.

Additionally, restaurant personnel must adhere to recommended infection prevention and control practices, such as wearing appropriate face coverings, monitoring themselves for COVID-19 symptoms, and refraining from reporting to work if they feel unwell or have tested positive for the virus ([cdc.gov](https://www.cdc.gov)). These protocols specify that employees with COVID-19 symptoms or exposure should not be permitted to work, and dine-in restaurants in Dumaguete City have fully implemented this requirement.

Furthermore, the queuing area in these restaurants must maintain a one-meter distance on all sides and provide plastic barriers or dividers. The seating arrangement should also adhere to guidelines for face-to-face seating, and the installation of physical barriers, like clear plastic sneeze guards, is part of the establishment's engineering controls as outlined in the Occupational Safety and Health Act of 1970 (www.osha.gov). These measures are essential for preparing workplaces for COVID-19 and ensuring safety and health regulations compliance.

Table 3. Descriptive statistics of the extent of implementation of minimum health protocols for dine-in restaurants

Indicators	SD	Mean	Interpretation
1. The establishments implement the contract tracing measures collected by registering with the SafePass app or StaySafe.ph or health checklist form.	0.65	3.50	Fully Implemented
2. The establishment checks regularly the temperature (thermal scanning) of all personnel, suppliers, and customers prior to entry	0.50	3.55	Fully Implemented
3. The establishments politely declined entry of customers, workers, and suppliers exhibiting symptoms such as colds, colds, and difficulty breathing.	0.46	3.71	Fully Implemented
4. No personnel with COVID-19 symptoms or with exposure shall be allowed to report to work	0.59	3.76	Fully Implemented
5. There is a provision for rubbing alcohol sprayed on the hands of personnel, suppliers, and customers before entry	0.41	3.79	Fully Implemented
6. The establishments strictly enforce the "No Face Mask, No Entry Policy."	0.37	3.84	Fully Implemented
7. The establishment observes proper social/physical distancing between workers and customers.	0.43	3.76	Fully Implemented
8. There is a proper ventilation and exhaust system in the establishment.	0.47	3.68	Fully Implemented
9. The establishment practices the required distance of chairs and tables at least one (1) meter distance on all sides	0.41	3.79	Fully Implemented
10. The establishment queuing area complies with the one (1) meter distance on all sides	0.45	2.74	Implemented
11. The establishment provides plastic barriers/dividers for all tables and chairs for face-to-face seating,	1.19	2.67	Implemented
12. No self-service is allowed in our establishment.	0.89	3.39	Fully Implemented
13. The establishment observes proper sanitation of restrooms and ensures that it is free from the accumulation of trash	0.39	3.82	Fully Implemented
Composite Mean	0.55	3.63	Fully Implemented

As Perceived by the Customers

Data in Table 4 presents the minimum health protocols in Dine-in Restaurants as perceived by the customers. As shown, the respondents observed that dine-in restaurants in Dumaguete City fully implemented the minimum health protocols guidelines by the Inter-Agency Task Force for the Management of Emerging Infectious Diseases (IATF-EID). The report of Gursoy et al. (2020) suggested that the following precautions were the most important to restaurant customers during the COVID-19 pandemic: visible sanitizing efforts, implementing social distancing, limiting the number of customers served, more frequent and rigorous cleaning of high-touch areas, and employee training of health and safety protocols. However, in global health pandemics like the COVID-19 pandemic, cleanliness and sanitation have become even more important to consumers (Gossling et al., 2020). Implementing suitable health protocols in every restaurant will make consumers feel safer and more comfortable when resting on the food and beverage offerings provided (Maemunah, 2021).

Table 4. Descriptive statistics of the extent of minimum health protocols implemented in dine-in restaurants as perceived by the customers

Indicators	SD	Mean	Interpretation
1. The food establishment implements contract tracing measures collected by registering with the SafePass app or StaySafe.ph or health checklist form.	0.77	3.32	Fully Implemented
2. The establishments perform thermal scanning of all personnel, suppliers, and customers before entry.	0.71	3.58	Fully Implemented
3. The establishments strictly enforce the "No Face Mask, No Entry Policy" on all customers.	0.55	3.72	Fully Implemented
4. The establishments install hand washing stations with adequate water and soap.	0.69	3.52	Fully Implemented
5. The establishments observe the maximum allowable persons inside the restaurant	0.78	3.36	Fully Implemented
6. The establishments observe NO customer-personnel contact policy	0.81	3.07	Fully Implemented
7. The establishment observes proper social/physical distancing between workers and customers.	0.74	3.36	Fully Implemented
8. Chairs in the restaurant were distanced at least one (1) meter on all sides.	0.92	3.26	Fully Implemented
9. The establishments provide plastic barriers / dividers in face-to-face settings.	1.04	2.93	Implemented
10. The establishments ensure an adequate air exchange in enclosed areas.	0.78	3.19	Implemented
11. The establishment practices alternative methods of payments	0.76	3.21	Fully Implemented
12. The establishment observes the administration of protocols, including the right to refuse service to customers who fail or refuse to comply.	0.75	3.35	Fully Implemented
Composite Mean	0.77	3.32	Fully Implemented

Table 4 shows that respondents observed that dine-in restaurants implemented the following protocols: "the establishments provide plastic barriers /dividers in face-to-face setting" and "the establishments ensure an adequate air exchange in the enclosed area ."The outbreak of the coronavirus pandemic in 2020 has had a variety of social and economic impacts affecting several service industries. Concerning the services cape, some restaurant operators removed or blocked off tables and seats, put up partitions between tables and counter-service areas and even placed mannequins or dolls in seats to further ensure proper social distancing (Petre, 2020). These policies and changes were among the most crucial safety precautions customers expected of restaurants as they reopened, per a report by Gursoy et al. (2020).

The 2020 study by Lyu and Wehby examines the impact of state government mandates for public face mask use on the spread of COVID-19, providing evidence that supports the effectiveness of widespread community use of face masks. In restaurant service, the key to food service is serving food and drinks to guests. Some restaurants have adapted by implementing new health protocols. Restaurants have implemented health and security protocols by providing hand sanitizers at the cashier desk. Cashiers are also required to wear a mask when making transactions with consumers. Implementing suitable health protocols in every restaurant will make consumers feel safer and more comfortable when resting on the food and beverage offerings provided (Maemunah, 2021).

3.4 Challenges Faced by the Dine-In Restaurants

Table 5. Descriptive statistics of the challenges faced by dine-in restaurants amid COVID-19 pandemic

Indicators	SD	Mean	Interpretation
Cancellations of booking	0.87	3.00	Somewhat Agree
Financial and operational impact of the pandemic	0.65	3.45	Strongly Agree
Decline in customer demand	1.01	3.00	Somewhat Agree
Effects on workplace and productivity	0.89	3.11	Somewhat Agree
Limited face-to-face activities	0.87	3.18	Somewhat Agree
Adopting and applying new normal ways	0.67	3.37	Strongly Agree
Decreasing or losing revenue	0.88	2.92	Somewhat Agree
Government protocols	0.69	3.50	Strongly Agree
Composite Mean	0.82	3.19	Somewhat Agree

Table 5 presents the challenges faced by dine-in restaurants during the pandemic. The challenges faced by dine-in restaurants during the pandemic were significant. According to Table 5, respondents highlighted various issues, including booking cancellations, declining customer demand, impacting workplace productivity, limited face-to-face activities, and decreasing or losing revenue. The pandemic presented an unprecedented challenge to the hospitality industry, leading to temporary closures of many businesses and a significant decrease in demand due to strategies aimed at combating COVID-19, such as community lockdowns and social distancing (Bartik et al., 2020). However, hospitality businesses are expected to make substantial changes to their operations in the COVID-19 business environment to ensure employees' and customers' health and safety and enhance customers' willingness to patronize their business (Gössling et al., 2020). The study of Tayco et. al (2023), explains that the

F&B establishments faced challenges during the COVID-19 pandemic, and customer demand for high-quality service while observing the safety protocols is increasing.

Additionally, respondents stressed the financial and operational impact of the pandemic, the need to adopt new standard practices, and challenges related to government protocols. The tourism industry, in particular, is expected to be heavily impacted by the pandemic (UNWTO (2020), necessitating adjustments to cope with social distancing and the "new normal" (Pricewaterhouse Coopers, 2020). Government intervention and stimulus packages are crucial in supporting industries and improving productivity during this challenging time (Higgins-Desbiolles, 2020).

Large and small restaurants had to adapt their operations significantly, with small businesses often being the most affected. Implementing new safety measures, such as changing gloves, sanitizing tables, and wearing masks, became essential for employees. Managers must ensure compliance with these rules while managing orders and staff effectively. This underscores the significant impact of government protocols on dine-in restaurants during the pandemic.

3.5 Relationship Between Socio-demographic Profile and Extent of Implementation

Table 6. Analysis for the relationship between socio-demographic profile and extent of implementation

Variables Tested		P-value	Interpretation
Dependent	Selected Profile Variables		
Implementation of minimum health protocols	Gender	0.221	Not Significant
	No. of times eating in the restaurants	0.187	Not Significant
	No. of companions when eating in the restaurants	0.986	Not Significant
	Type of restaurants	0.649	Not Significant
Minimum health protocols implemented in dine-in restaurants	Job Position	0.555	Not Significant
	Number of Regular Employees	0.839	Not Significant
	Number of Part-time Employees	0.904	Not Significant
	Operating Hours	0.764	Not Significant
	Years of Business	0.898	Not Significant

Legend: If $p > 0.05$, the relationship is not significant; if $p < 0.05$, the relationship is significant

Table 6 shows socio-demographic profile has no significant relationship to the extent of implementation of minimum health protocols and minimum health protocols implemented in dine-in restaurants. This means that the profiles of the respondents did not affect the implementation of minimum health protocols in dine-in restaurants. Few studies provide evidence of differences in the effects of the pandemic by socioeconomic status. A study by Ashraf (2020) explores the relationship between socioeconomic factors, government policy, and COVID-19 health outcomes. Ashraf (2020) finds a strong negative association between COVID-19 cases and socioeconomic conditions, which can be alleviated by government policy. The study results align with this view that the socio-demographic profile of the respondents did not affect the implementation of minimum health protocols and minimum health protocols implemented in dine-in restaurants. Understanding the influence of human behavior on the spread of disease is crucial during a pandemic. It is essential to comprehend the motivations behind people's health-related actions or inactions (Papageorge et al., 2021). Similarly, Zimmermann et al. (2020) advocate for swiftly addressing the human factor at the onset of an outbreak as the most effective strategy for mitigating future pandemics.

3.6 Relationship Between Challenges Faced and the Organizational Profile of the Dine-in Restaurant

The result shows that the number of part-time employees and operating hours are positively correlated with minimum health protocols implemented in dine-in restaurants, this correlation is significant at 0.05 levels. For the specific independent variables of the number of part-time $p=.008$, challenges may differ in each establishment when they have a different number of part-time employees. Challenges may also be experienced to different degrees when the respondents were grouped according to operating hours per day, $p=.037$. Furthermore, the number of part-time employees and the business hours led to different challenges the establishments faced during the COVID-19 lockdown. As revealed in Table 5 government protocols are one of the biggest challenges dine-in restaurants face during the pandemic. Another critical challenge for the restaurant industry is social distancing, which is one of the protocols set by the government.

Table 7. Analysis for the relationship between the challenges faced and the organizational profile of the dine-in restaurant

Variables Tested		p-value	Interpretation
Dependent	Selected Profile Variables		
Minimum health protocols implemented in dine-in restaurants	Type of restaurants	0.818	Not Significant
	Job Position	0.232	Not Significant
	Number of Regular Employees	0.074	Not Significant
	Number of Part-time Employees	0.008	Significant
	Operating Hours	0.037	Significant
	Years of Business	0.964	Not Significant

Legend: If $p > 0.05$, the relationship is not significant; if $p < 0.05$, the relationship is significant

This increased pressure on restaurants' operations due to the lower capacities (Peistikou, 2021) is one of the reasons why dine-in restaurants in Dumaguete City reduced their operating hours. Another challenge the dine-in restaurant faces is that training the restaurant staff on following new hygiene procedures is both costly and time-consuming. That is why some dine-in restaurants hire part-time employees with experience in hygiene and safety procedures to minimize their training costs. Nevertheless, restaurants attempt to address those challenges by taking various actions from their end, such as menu pricing, rewarding loyalty, and enhancing customer experience (Khan, 2020).

3.7 Relationship Between the Profiles of the Respondents to the Extent of Implementation

Table 8. Analysis for the relationship between the profiles of the respondents to the extent of implementation

Variables Tested		Pearson r value and Spearman rho value (r & ρ values)		p-values	Remarks
Dependent	Independent				
The extent of implementation of minimum health protocols	Age	-0.264		.109	Not Significant
	Gender	0.171		.305	Not Significant
	No. of times eating in the restaurants	-0.072		.669	Not Significant
	No. of companions when eating in the restaurants	0.135		.420	Not Significant

Legend: If $p > 0.05$, the relationship is not significant; if $p < 0.05$, the relationship is significant

Table 8 shows that the extent of implementation of minimum health protocols has no significant relationship to the socio-demographic profile of the customer. Not all identified independent variables are significant to the perceptions of the extent of implementation of minimum health protocols. The study by Ashraf (2020) finds a strong negative association between COVID-19 cases and socioeconomic conditions, which can be alleviated by government policy. Akmal et al. (2022) show no relationship between knowledge and the application of health protocols to prevent COVID-19. The study's findings confirm the other studies' views that respondents' socio-demographics are insignificant in the perceptions of the extent of implementation of minimum health protocols. This means that the customers eating in the dine-in restaurants in Dumaguete City are not concerned if the dine-in restaurants they visit are implementing the health protocols as required by the Government.

4.0 Conclusion

The study indicates that dine-in restaurants in Dumaguete City have effectively implemented minimum health protocols in response to the COVID-19 pandemic, adhering to government mandates. These protocols, which include the use of face masks, physical distancing measures, and the installation of plastic barriers, have been rigorously enforced to ensure the safety of both employees and customers. Customers have observed that these restaurants comply fully with the guidelines set by the Inter-Agency Task Force for the Management of Emerging Infectious Diseases (IATF-EID), reinforcing the importance of these measures in maintaining public health.

Despite the successful implementation of health protocols, the pandemic has posed significant challenges for the restaurant industry, particularly in terms of financial and operational impacts. Restaurants have had to adapt to new safety measures, manage reduced customer demand, and navigate government regulations, with smaller establishments often bearing the brunt of these changes. The study also reveals that the socio-demographic profiles of customers do not significantly influence their perceptions of the health protocols' implementation,

suggesting a uniform expectation of safety measures across all demographics. Overall, the findings highlight the critical role of stringent health protocols in supporting the restaurant industry's resilience during the pandemic.

5.0 Contributions of Authors

Sheena T. Guevarra: Conceptualization, Writing the original draft, Writing review and editing, Writing the analysis, Writing the revision of the manuscript.

Ryan O. Tayco: Conceptualization, Writing the original draft, Writing the review and editing, Writing the analysis, Writing the revision of the manuscript.

Millard Vaughn Tubog: Conceptualization, Writing the original draft, Writing the review and editing.

6.0 Funding

This research received funding from Negros Oriental State University.

7.0 Conflict of Interests

The authors have no conflict of interest to declare.

8.0 Acknowledgment

The authors express their gratitude for the support provided by the Research, Innovation, Development, and Extension (RIDE) Office of Negros Oriental State University in completing this study.

9.0 References

- Akmal, D., Widodo, R. S., Ediyono, S., & Ropai, O. (2022). Relationship between knowledge and implementation of health protocols to prevent COVID-19 in West Java residents. *KnE Medicine*, 134-142. <https://doi.org/10.18502/kme.v2i2.11076>
- Alkasasbeh, F. (2020). The effects of COVID-19 on restaurant industry: A perspective article. *Journal of Innovations in Digital Marketing*, 1(1), 22-31. <https://doi.org/10.51300/jidm-2020-16>
- Ashraf, B. N. (2020). Socioeconomic conditions, government interventions, and health outcomes during COVID-19. *Covid Economics*, 37(14), 141-162.
- Bartik, A. W., Bertrand, M., Cullen, Z. B., Glaeser, E. L., Luca, M., & Stanton, C. T. (2020). How are small businesses adjusting to COVID-19? Early evidence from a survey (No. w26989). National Bureau of Economic Research. <https://doi.org/10.3386/w26989>
- Bondurant, S. W., Duley, C. M., & Harbell, J. W. (2019). Demonstrating the persistent antibacterial efficacy of a hand sanitizer containing benzalkonium chloride on human skin at 1, 2, and 4 hours after application. *American Journal of Infection Control*, 47(8), 928-932. <https://doi.org/10.1016/j.ajic.2019.01.004>
- Chow, L. S. (2020). Foodservice wage war against COVID-19 crisis and the opportunity. *Journal of Tourism, Hospitality and Environment Management (JTHEM)*, 5(19), 41-49. DOI 10/35631/JTHEM.519004
- Department of Health. (2021, June 1). <https://doh.gov.ph/search/node/covid%2019>
- Department of Trade and Industry. (2021, June 25). <https://www.dti.gov.ph/covid19/infographics/mc2037/>
- Dube, K., Nhamo, G., & Chikodzi, D. (2020). COVID-19 disabled people in the global restaurant and hospitality industry. *Current Issues in Tourism*, 1-4.
- Gemelli Against COVID-19 Post-Acute Care Study Group. (2020). Post-COVID-19 global health strategies: The need for an interdisciplinary approach. *Aging Clinical and Experimental Research*, 32(8), 1613-1620. <https://doi.org/10.1007/s40520-020-01616-x>
- Gössling, S., Scott, D., & Hall, C. M. (2020). Pandemics, tourism, and global change: A rapid assessment of COVID-19. *Journal of Sustainable Tourism*, 29(1), 1-20. <https://doi.org/10.1080/09669582.2020.1758708>
- Gursoy, D., Chi, C. G., & Chi, O. H. (2020). COVID-19 study 2 report: Restaurant and hotel industry: Restaurant and hotel customers' sentiment analysis. Would they come back? If they would, when.
- Hapsari, A. Y., Rianti, I., Ramadhan, S., Fauziyyah, S. A., & Putri, S. A. (2020). Lifestyle, knowledge, and dinescape impact on repurchase intention (Case study of the implementation of health protocols in restaurant "X," Bandung City). *PalArch's Journal of Archaeology of Egypt/Egyptology*, 17(10), 3868-3877.
- Khan, S. (2020). Seven ways social distancing will change restaurants. Retrieved from <https://theconversation.com/seven-ways-social-distancing-will-change-restaurants-141671>
- Mongey, S., Pilossoph, L., & Weinberg, A. (2020). Which workers bear the burden of social distancing policies? *Covid Economics*, 12, 69-86. <https://doi.org/10.1007/s10888-021-09487-6>
- New restaurants are starting to open in the pandemic. Retrieved from <https://www.qsrmagazine.com/consumer-trends/new-restaurants-are-starting-open-pandemic>
- Papageorge, N. W., Zahn, M. V., Belot, M., Van den Broek-Altenburg, E., Choi, S., Jamison, J. C., & Tripodi, E. (2021). Socio-demographic factors associated with self-protecting behavior during the COVID-19 pandemic. *Journal of Population Economics*, 34(2), 691-738. <https://doi.org/10.1007/s00148-020-00818-x>
- Peistikou, M. (2021). Restaurants industry in the COVID-19 era: Challenge or opportunity? In *Strategic innovative marketing and tourism in the COVID-19 era: 9th ICSIMAT conference 2020* (pp. 153-162). Springer International Publishing.
- Petre, H. (2020). Restaurants pivot to groceries and meal kits to save business during the COVID-19 pandemic. *Nation's Restaurant News*. Available at <https://www.nrn.com/delivery-takeout-solutions/restaurants-pivot-groceries-and-meal-kits-save-business-during-covid-19>
- Restaurant economy statistics. Retrieved from <https://pos.toasttab.com/resources/restaurant-success-industry-report>. (2022, October 11).
- Severson, K., & Yaffe-Bellany, D. (2020). Independent restaurants brace for the unknown. *The New York Times*, p. 21.
- Sigala, M. (2020). Tourism and COVID-19: Impacts and implications for advancing and resetting industry and research. *Journal of Business Research*, 117, 312-321. <https://doi.org/10.1016/j.jbusres.2020.06.015>
- Smith, V. L., Pizam, A., & Mansfield, Y. (1996). Tourism, crime, and international security.
- Song, H. J., Yeon, J., & Lee, S. (2021). Impact of the COVID-19 pandemic: Evidence from the US restaurant industry. *International Journal of Hospitality Management*, 92, 102702. <https://doi.org/10.1016/j.ijhm.2020.102702>
- Tayco, R. O., Tubog, M. V., Rizada, M. L. P., Antique, C. T., Zamora, G. Y., & Espinosa, L. B. (2023). The effects of the COVID-19 pandemic on the tourism industry in Negros Oriental, Philippines. *Journal of Business on Hospitality and Tourism*, 9(2), 155-187. <https://doi.org/10.22334/jbhost.v9i2.473>
- Telukdarie, A., Munsamy, M., & Mohlala, P. (2020). Analysis of the impact of COVID-19 on the food and beverages manufacturing sector. *Sustainability*, 12(22), 9331. <https://doi.org/10.3390/su12229331>
- UNWTO. (2020). UNWTO World Tourism Barometer, May 2020: Special focus on the impact of COVID-19. Retrieved from <https://webunwto.s3.eu-west-1.amazonaws.com/s3fs-public/2020-05/Barometer%20-%20May%202020%20-%20Short.pdf>
- Weissleder, R., Lee, H., Ko, J., & Pittet, M. J. (2020). COVID-19 diagnostics in context. *Science Translational Medicine*, 12(546). <https://doi.org/10.1126/scitranslmed.abc1931>
- World Health Organization. (2021, June 2). https://www.who.int/docs/default-source/coronaviruse/situation-reports/2020121-sitrep-1-2019-ncov.pdf?sfvrsn=20a99c10_4
- Zimmermann, K. F., Karabulut, G., Bilgin, M. H., & Doker, A. C. (2020). Inter-country distancing, globalisation and the coronavirus pandemic. *World Economy*, 43(6), 1484-1498. <https://doi.org/10.1111/twec.12969>

Influence of Consumers' Sanitary Practices on Purchasing and Dining-out amidst the COVID-19 Pandemic

Glennen Y. Zamora¹, Ryan O. Tayco^{2*}, Ma. Leroz P. Rizada²

¹Lyceum of the Philippines University, Manila, Philippines

²Negros Oriental State University, Dumaguete City, Philippines

*Corresponding Author Email: ryantayco@norsu.edu.ph

Dated received: June 1, 2024

Date revised: June 14, 2024

Date accepted: June 19, 2024

Originality: 93%

Grammarly Score: 99%

Similarity: 7%

Recommended citation:

Zamora, G., Tayco, R., Rizada, M.L. (2024). Influence of consumers' sanitary practices on purchasing and dining-out amidst the COVID-19 pandemic. *Journal of Interdisciplinary Perspectives*, 2(8), 16-23.

<https://doi.org/10.69569/jip.2024.0252>

Abstract. Food safety has become increasingly important during the COVID-19 pandemic, with heightened concerns about food security in Asia and the Pacific. This study aimed to analyze consumers' sanitary practices while shopping and dining out during the pandemic, utilizing a descriptive method with a correlational technique. The researchers employed a convenience sampling technique, gathering data from 258 respondents. The survey, conducted among those affected by the pandemic, revealed that respondents strongly agreed they adhered to proper food safety measures when shopping at grocery stores and dining at restaurants. The majority of respondents were female college graduates employed in the private sector. The respondents also strongly agreed that they followed appropriate eating practices in terms of attitudes, subjective norms, perceived behavioral control, and intentions. Interestingly, the study found no significant correlation between the socio-demographic profiles of the respondents and their attitudes and behaviors related to shopping and dining out during the pandemic. This suggests that people were taking necessary precautions regardless of their background. Moreover, the findings indicated that respondents with higher food safety attitudes and practices were more likely to adhere to those practices while shopping and dining out during the pandemic. This highlights the importance of promoting food safety measures consistently across different demographic groups to ensure public health during such crises.

Keywords: Hospitality management; Consumers' sanitary practices; COVID-19 pandemic; Purchasing and dining-out, Correlational analysis; Dumaguete City.

1.0 Introduction

On March 11, 2020, the World Health Organization (WHO) officially classified COVID-19 as a worldwide pandemic. As of early July, the total number of confirmed cases had surpassed 12 million, with over 550,000 fatalities. This has substantially impacted frontline workers, such as those in the food service industry. Both food operators and consumers are advised to take primary responsibility and exercise caution and prudence. Consequently, this research aims to assess consumers' hygiene when buying food and dining out amid the COVID-19 pandemic.

The COVID-19 outbreak has led to widespread "social distancing," devastating the tourism and travel industries and significantly impacting various sectors, including hospitality, food processing, education, fashion, and retail industries (Chowdhury et al., 2020). It is crucial to deploy resources to prevent food contamination at every stage of the food chain, from harvest to consumption (Uçar et al., 2016). Therefore, emphasizing consumers' sanitary practices when purchasing and dining out amidst the COVID-19 pandemic is necessary.

Food safety has become increasingly important during the COVID-19 pandemic. The pandemic has escalated food security risks in Asia and the Pacific, disrupting domestic and international food supply chains and undermining food availability and accessibility (Kim et al., 2020). An efficient food safety management system is essential to guarantee the safety of both food and services. Achieving this necessitates the development of skills and a strong commitment from the organization.

The International Food Policy Research Institute (IFPRI) emphasizes the global focus on food safety because of its fundamental connection to health. Improving food safety is vital for enhancing food security and guaranteeing adequate and healthy food availability for communities. With the expansion of the global food trade, ensuring food safety has become a shared priority for both developed and developing nations, creating new organizations, regulations, and approaches to oversee food safety (Unnevehr, 2003).

The study explore how long-term behavioral changes in sanitary practices persist post-pandemic and their impact on consumer behavior over time. Additionally, examining variations across different demographic groups would provide a more comprehensive understanding of the influence of sanitary practices on purchasing and dining-out behaviors. Research by Shariff and Al-Malki (2010) emphasizes that knowledge, attitude, and practice of food handlers are critical in preventing food poisoning outbreaks. Furthermore, education and training programs have been shown to support improving safe food handling practices (Sneed et al., 2004). As stated by Kotler and Keller (2011), understanding consumer buyer behavior is integral to satisfying consumer needs and wants. This study intends to specifically explore consumers' sanitary practices when purchasing and dining out amidst the COVID-19 pandemic.

2.0 Methodology

2.1 Research Design

This study employed descriptive research methods and correlational techniques to understand the population's characteristics and examine relationships between variables. Correlational methods were used by the researchers to discover the relationship between the variables and how strong they may be. It determines the degree to which the movement of two variables is associated.

2.2 Research Participants

A convenience sampling procedure was used to arrive at the number of respondents. The study's respondents are the consumers who determine their sanitary practices on purchasing and dining out amidst the COVID-19 pandemic. A total of 258 respondents who frequently go to the supermarkets and restaurants in Dumaguete City participated in the survey.

2.3 Research Instrument

The questionnaire checklist was used as the main instrument for data gathering. Part I asks socio-demographic questions such as age, gender, highest educational attainment, and occupation. Part II focuses on the food safety attitude and practices of consumers in purchasing, and Part III on the consumers' eating out practices during COVID-19. The survey questionnaire was adapted from the study of Soon et al. (2021). Slight modifications were made to reflect the exact situation of the study.

2.4 Data Gathering Procedure

Questionnaires were personally distributed and retrieved by the researchers from the respondents. The researchers also utilized Google Forms to send soft copies of questionnaires to the respondents.

2.5 Data Analysis

Upon retrieval of the questionnaires from the respective respondents, the results were tabulated and appropriate statistical tools were applied. The data collection process involved utilizing a convenience sampling technique, and reliability assessments utilized Cronbach's α coefficient. Data analysis included descriptive statistics, Spearman Rho, and Chi-square.

2.6 Ethical Considerations

To protect respondents' rights, the researchers obtained consent and adhered to the Data Privacy Act of 2012.

3.0 Results and Discussion

3.1 Profile of the Respondents

The profile of the respondents indicated that young adults, particularly females, constituted the majority of participants, and most respondents were college graduates and private employees. Data in Table 1 presents the profile of the respondents of this study. The data shows that aged 21 to 25 made up the majority of the respondents. This explains that young adults spend more money on food than any other age group, with dining out and take-out accounting for this expenditure. This is also supported by the findings of Klineberg et al. (1998, p. 749), who discovered that "younger and more educated members of the public tend to be more worried about concerns of environmental quality and more devoted to environmental conservation." This table made it clear that the number of females far exceeded that of males. Because women undertake various tasks at work and home, it seems imperative to consider their literacy level of food safety practices and attitude when going out to dine during the COVID-19 pandemic. Hence, women were dominant decision-makers when selecting restaurants to dine at (Cullen, 2012). The table also shows that most respondents are college graduates and work as private employees.

Table 1. Descriptive statistics of the profile of the respondents

Variable	Frequency	Percentage
Age		
18-20	67	25.97
21-25	117	45.35
26-30	24	9.30
31-35	23	8.91
36-40	14	5.43
41-45	4	1.55
46-50	4	1.55
51-55	4	1.55
56-above	1	0.39
Sex		
Male	68	26.36
Female	187	72.48
Prefer not to say	3	1.16
Educational Attainment		
High School Graduate	40	15.50
College undergrad/Vocational	4	1.55
College Graduate	199	77.13
Full-fledged MA	1	0.39
Postgraduate/Doctor of Ed.	14	5.43
Occupation		
Student	63	24.42
Private Employees	84	32.56
Skilled Worker	9	3.49
Assistant, Staff, Secretary	32	12.40
Teacher	26	10.08
Housewife	33	12.79
Business/seller	2	0.78
Government Employee	6	2.33

N= 258

3.2 Food Safety Attitude and Practices of Consumers in Purchasing

As indicated in Table 2, consumers exhibit a variety of food safety attitudes and practices. Furthermore, most of the participants expressed strong agreement with the following: selecting visibly clean food and packaging, sanitizing surfaces such as shopping carts or baskets before using them, washing all meats, fresh fruits, and vegetables before preparing and serving them, removing all food packaging carefully to avoid contamination with COVID-19, washing hands with water and soap before and after food preparation, and avoiding crowded restaurants by choosing to eat at home. These results are consistent with Jeinie, Nor, Saad, and Sharif's (2017) study, which emphasizes the importance of sufficient food safety and diligence during food handling for food safety and hygiene practices.

Table 2. Descriptive statistics of the food safety attitude and practices of consumers in purchasing

Indicators	Mean	Interpretation
Attitude	4.46	Strongly Agree
1. When shopping, I will select visibly clean food and food packaging.	4.78	Strongly Agree
2. When shopping, I will sanitize surfaces such as shopping carts or baskets before using them.	4.20	Strongly Agree
3. I shop as quickly as possible to minimize contact with staff and customers.	4.18	Agree
4. Before preparing and serving, I wash all meats, fresh fruits, and vegetables.	4.83	Strongly Agree
5. I remove all food packaging carefully to avoid contamination with COVID-19.	4.62	Strongly Agree
6. I wash my hands with water and soap before and after food preparation.	4.83	Strongly Agree
7. I will avoid crowded restaurants and choose to eat at home.	4.36	Strongly Agree
8. I will order takeaways or deliveries where possible.	4.18	Agree
9. I will use apps to order food at restaurants to minimize contact with other people.	4.18	Agree
Practices	4.51	Always
1. I shop from well-ventilated supermarkets or stalls.	4.25	Always
2. I follow social distancing measures while shopping.	4.67	Always
3. Before using them in shops, I sanitize surfaces such as cart or basket handles with sanitizing wipes.	4.16	Very Often
4. I wash or wipe food jars and cans before using them.	4.59	Always
5. I disinfect kitchen surfaces after meal preparation.	4.48	Always
6. I wash meats, fruits, and vegetables before cooking or eating.	4.84	Always
7. If I am eating out, I will choose well-ventilated restaurants that follow social distancing rules.	4.51	Always
8. I wash my hands at the restaurant.	4.74	Always
9. I sanitize the utensils and table surfaces before dining at restaurants.	4.34	Always

Furthermore, as Soon et al. (2021) explained, hand washing with water and soap and practicing social distancing in restaurants may reduce the risk of COVID-19 transmission. The respondents always adhere to food safety practices such as shopping in well-ventilated supermarkets or stalls and following social distancing measures. In contrast, when shopping, they wash or wipe food jars and cans before using them, disinfect kitchen surfaces after meal preparation, wash meats, fruits, and vegetables before cooking or eating, choose well-ventilated restaurants that follow social distancing rules, wash hands at the restaurant, and sanitize the utensils and table surfaces before dining at restaurants. These findings align with the study conducted by Soon et al. (2021), which suggests that consumers with a positive food safety attitude and strong family norms are more likely to adhere to safe eating out measures (For instance, choosing sanitary and spacious dining establishments, maintaining hand hygiene, donning masks, and observing social distancing.). Restaurants and other food providers have also made substantial changes to implement recommended social distancing. Nepumoceno (2020) pointed out that strict adherence to stringent protocols can minimize physical contact and thwart virus transmission, provided everyone diligently adheres to and complies with quarantine regulations.

3.3 Consumers Eating Out Practices during COVID-19

Table 3 presents the data on consumers' eating practices, focusing on their attitudes, subjective norms, perceived behavioral control, and intentions. The majority of respondents strongly agree that considering the cleanliness of restaurants and adhering to social distancing measures is very important in reducing the transmission of COVID-19. Adhering to proper hand-washing steps before eating is vital in preventing COVID-19. It is imperative not to eat out if experiencing COVID-19 symptoms, and wearing masks before and after eating in a restaurant is essential. Edmunds (2020) highlights the impact of COVID-19 on most food firms, with some excelling, others struggling, and some adapting their customer engagement strategies to survive. Rustia et al. (2021) emphasize the crucial role of food hygiene in ensuring food safety, with supportive sanitation systems being implemented. Cross (2020) emphasizes the importance of maintaining physical distance in indoor and outdoor environments as a successful strategy for reducing the transmission of COVID-19. Cross (2020) emphasizes the importance of maintaining physical distance in indoor and outdoor environments as a successful strategy for reducing the transmission of COVID-19. Cross (2020) emphasizes the importance of maintaining physical distance in indoor and outdoor environments as a successful strategy for reducing the transmission of COVID-19.

Regarding subjective norms, respondents agree that their families would disapprove if they failed to wash or sanitize their hands properly when eating at restaurants. Furthermore, they acknowledge hand-washing before dining out and the importance of sanitizing themselves before returning home. Moreb et al. (2017) and Weiler and

Fernandez (2019) provide insights into long-standing concerns about food safety, emphasizing the responsibility of food producers and the potential for food contamination across the supply chain.

Table 3. Descriptive statistics of the consumers eating out practices during COVID-19

Indicators	Mean	Interpretation
Attitude	4.79	Strongly Agree
1. Restaurants' cleanliness and social distancing measures are essential to reduce the transmission of COVID-19.	4.83	Strongly Agree
2. Following proper hand-washing steps before eating is essential to prevent COVID-19.	4.81	Strongly Agree
3. I mustn't eat out if I have COVID-19 symptoms (fever, cough, breathing difficulty).	4.65	Strongly Agree
4. Wearing masks before and after eating in the restaurant is essential.	4.87	Strongly Agree
Subjective Norms	4.15	Agree
1. My family will only approve if I wash or sanitize my hands properly while eating at restaurants.	4.47	Strongly Agree
2. I am required to wash my hands before eating at restaurants.	4.69	Strongly Agree
3. I sanitize myself properly before going home after eating at the restaurants.	4.63	Strongly Agree
4. I ignore the practice of proper hand washing before eating in the restaurant.	2.80	Neither
Perceived Behavioral Control	4.13	Agree
1. It is up to me to select clean restaurants that follow social distancing rules.	4.37	Strongly Agree
2. Not having enough support from restaurant staff to ensure social distancing measures would make it difficult for me to eat out at restaurants.	4.03	Agree
3. It is entirely up to me to wash my hands at the restaurants.	4.14	Agree
4. Not having enough hand-washing facilities at the restaurant would make it difficult for me to wash my hands.	4.87	Strongly Agree
5. It is entirely up to me to sanitize utensils and table surfaces at the restaurant.	4.27	Strongly Agree
6. Not having support from staff would make it difficult for me to clean surfaces before eating.	3.96	Agree
Intentions	4.68	Strongly Agree
1. I will always wash my hands before eating at a restaurant.	4.78	Strongly Agree
2. I will always avoid eating out if I have COVID-19 symptoms (fever, cough)	4.71	Strongly Agree
3. I will always choose restaurants that look clean and follow social distancing measures.	4.71	Strongly Agree
4. I will always sanitize utensils and table surfaces before eating in restaurants.	4.50	Strongly Agree

Regarding perceived behavioral control, respondents feel responsible for choosing clean restaurants that adhere to social distancing rules. They also expressed difficulty maintaining hand hygiene if sufficient facilities were unavailable at the restaurant. Their responsibility extends to sanitizing utensils and table surfaces at the restaurant. Ceylan et al. (2020) and Untaru and Han (2021) discuss how consumer attitudes have shifted during the pandemic, influencing purchase behavior. Despite ongoing efforts to promote hand hygiene, the United Nations Children's Fund (UNICEF) and the World Health Organization (WHO) observe persistent inadequacies in access to hand hygiene facilities.

Furthermore, in terms of intentions, respondents strongly agree that they always wash their hands before dining out, avoid eating at restaurants when experiencing COVID-19 symptoms, consistently opt for clean restaurants that adhere to social distancing measures, and regularly sanitize utensils and table surfaces when dining out. Kaswengi and Diallo (2015) emphasize the heightened sensitivity of consumer attitudes and behaviors during recessions. Nepumoceno (2020) and Shin and Kang (2020) underscore the importance of following strict protocols, maintaining hygiene, and adhering to quarantine rules to reduce the transmission of viruses and prevent life-threatening illnesses.

3.4 Relationship Between Respondent's Profile and Consumer's Sanitary Practices

Table 4 presents the relationship between the respondents' profiles and consumers' sanitary practices when purchasing and dining out during the COVID-19 pandemic. The results indicate no significant relationship between consumer attitudes and purchasing and dining out practices during the COVID-19 pandemic. As a result, we accept the null hypothesis of no relationship. This suggests that the socio-demographic profile of the respondents did not impact their sanitary attitudes and practices when purchasing and dining out during the COVID-19 pandemic. This is supported by Moreb et al.'s study (2017), which indicates that food safety concerns are longstanding. The respondents' awareness of food safety measures remained consistent based on their profiles. In 2021, UNICEF and WHO observed that despite efforts to promote hand hygiene, there is still a need to improve access to hand hygiene facilities. Nepumoceno (2020) explains that following strict protocols reduces physical contact and prevents virus transmission, provided everyone strictly adheres to and complies with the quarantine

rules. Additionally, the study by Tayco et al. (2023) explains that accommodation facilities and F&B establishments faced a lot of challenges during the COVID-19 pandemic, and there is an increasing customer demand for high-quality service while adhering to safety protocols.

Table 4. Analysis for the relationship between the respondent's profile and consumer's sanitary practices

Variables Tested		Chi-Square Test (χ^2 value) & r value	p-value	Interpretations
Dependent	Independent			
Attitude	Age	$r=.09$	.14	Not Significant
	Sex	$\chi^2=6.77$	.34	Not Significant
	Educational Attainment	$\chi^2=7.86$	.80	Not Significant
	Occupation	$\chi^2=18.42$	.78	Not Significant
Practices	Age	$r=.012$	.76	Not Significant
	Sex	$\chi^2=3.43$	.75	Not Significant
	Educational Attainment	$\chi^2=5.65$	.93	Not Significant
	Occupation	$\chi^2=27.56$	.28	Not Significant

Significant at .05 alpha

3.5 Relationship Between Consumer Sanitary Practices on Purchasing and Dining Out

Table 5. Analysis for the relationship between the consumer's sanitary practices on purchasing and dining out

Variables Tested		r value	p-value	Interpretations	Decision Rule
Attitude	Dining Attitude	0.40	.00	Present but slight	Reject Null
	Dining Subjective Norm	0.48	.00	Substantial	Reject Null
	Dining Perceived behavioral control	0.32	.00	Present but slight	Reject Null
	Dining Intention	0.51	.00	Substantial	Reject Null
Practices	Dining Attitude	0.37	.00	Present but slight	Reject Null
	Dining Subjective Norm	0.53	.00	Substantial	Reject Null
	Dining Perceived behavioral control	0.29	.00	Present but slight	Reject Null
	Dining Intention	0.59	.00	Substantial	Reject Null

Table 5 presents the correlation between consumers' sanitary practices when purchasing and dining out amid the COVID-19 pandemic. The data reveals a significant correlation between consumers' sanitary practices and purchasing and dining out behaviors during the COVID-19 pandemic, with a significance level of 0.05. This indicates that higher food safety attitudes are linked to increased sanitary practices when purchasing and dining out amid the COVID-19 pandemic. As a result, the null hypothesis of no relationship is rejected. The emergence of COVID-19 has led to a dramatic shift in the variables consumers consider most important when purchasing products and services, significantly impacting the entire industry. Suh, Kang, and Moon's (2022) study suggests that the global upheaval caused by COVID-19 has strongly influenced consumers' practices, attitudes, and sensibilities. Additionally, Russia et al. (2021) emphasized the importance of food hygiene in ensuring food safety, and measures to support sanitation systems were implemented to guarantee the safety of the food supply.

4.0 Conclusion

Generally, the respondents of the study are mature enough to make purchases of goods and go out to dine out amidst the COVID-19 pandemic. Most are female, have college degrees, and are employed in the private sector. Regarding food safety attitudes and practices, the respondents strongly affirmed their adherence to proper food safety measures when buying food at supermarkets and dining out at restaurants. They also emphasized consistently following food safety protocols when visiting stores and restaurants.

When it comes to eating habits and attitudes, the majority of participants highlighted the significance of considering the cleanliness of restaurants and practicing social distancing to prevent the spread of COVID-19. Concerning their subjective norms, the respondents acknowledged the importance of observing proper sanitation practices before dining out and returning home. Furthermore, they expressed that selecting hygienic restaurants that adhere to social distancing rules is within their control.

As for their routines, the survey participants strongly agreed that they consistently wash their hands before eating at a restaurant and ensure that the utensils and tables are clean. The findings also indicate no correlation between the respondents' socio-demographic profiles and their attitudes and practices regarding purchasing and dining out during the COVID-19 pandemic. However, a significant correlation exists between the respondents' sanitary practices when purchasing and dining out during the pandemic, suggesting that those with higher levels of food safety attitudes and practices are more likely to adhere to these practices during the pandemic.

The study is of course not free from limitations, considering the scope of the exploration. The researchers report the following limitations: 1. the study was limited to the selected consumers who determine their sanitary practices on purchasing and dining out amidst the COVID-19 pandemic; 2. the study utilized a convenience sampling technique, the researchers did not consider picking consumers from the different barangays within the city; and 3. the study was conducted in Dumaguete City only.

The researcher proposed the following recommendations: 1. further studies can be conducted utilizing the proposed indicators to measure consumers' sanitary practices on purchasing and dining out and in a different setting; and 2. the researchers also recommend a dialogue with the supermarkets and food establishments owners to continue to adhere to the IATF (Inter-Agency Task Force) guidelines, which require strict implementation and monitoring to ensure the cleanliness of their products and workplaces. Similarly, establishments should continue to observe social distance.

5.0 Contributions of Authors

Glennen Y. Zamora: Conceptualization, Writing – original draft, Writing – review and editing. **Ryan O. Tayco:** Conceptualization, Writing – original draft, Writing – review and editing. **Ma. Leroz P. Rizada:** Conceptualization, Writing – original draft, Writing – review and editing.

6.0 Funding

This research received no external funding.

7.0 Conflict of Interests

The authors have no conflict of interest to declare.

8.0 Acknowledgment

The authors acknowledge the assistance of the Research, Innovation, Development, and Extension (RIDE) Office of Negros Oriental State University to finish this study.

9.0 References

- Ceylan, R. F., Ozkan, B., & Mulazimogullari, E. (2020). Historical evidence for economic effects of COVID-19. *The European Journal of Health Economics*, 21(6), 817-823. <https://doi.org/10.1007/s10198-020-01206-8>
- Chowdhury, M. T., Sarkar, A., Paul, S. K., & Moktadir, M. A. (2020). A case study on strategies to deal with the impacts of the COVID-19 pandemic in the food and beverage industry. *Operations Management Research*, 1-13. <https://doi.org/10.1007/s12063-020-00166-9>
- Cross, C. (n.d.). Covid-19: Keep on keeping your distance. *Healthy Children.org*. Retrieved May 16, 2022
- Cullen, F. (2012). Women are the dominant decision-makers when selecting restaurants to dine in. *Dublin Institute of Technology*. <https://doi.org/10.21427/d7mj22>
- Dancel, R. (2020). Coronavirus: Asia still needs to be ready to work from home. *The Straits Times*. <https://www.straitstimes.com/asia/se-asia/coronavirus-asia-not-yet-ready-to-work-from-home>
- Jeinie, M. H., Nor, N. M., Saad, M., & Sharif, M. S. M. (2017). An Ethnographic survey of culinary students' behaviors in implementing food safety and Hygiene practices. *Pertanika Journal of Science & Technology*, 25(108).
- Kaswengi, J., & Diallo, M. F. (2015). Consumer choice of store brands across store formats: A panel data analysis under crisis periods. *Journal of Retailing and Consumer Services*, pp. 23, 70-76. <https://doi.org/10.1016/j.jretconser.2014.12.003>
- Kim, K., Kim, S., & Park, C. Y. (2020). Food Security in Asia and the Pacific amid the COVID-19 Pandemic. <http://dx.doi.org/10.22617/BRF200176-2>
- Klineberg, S. L., McKeever, M., & Rothenbach, B. (1998). Demographic predictors of environmental concern: It does make a difference in how it is measured. *Social Science Quarterly*, 734-753.
- Kotler, P., & Keller, K. L. (2011). *A framework for marketing management*. Prentice Hall.
- Moreb, N. A., Priyadarshini, A., & Jaiswal, A. K. (2017). Knowledge of food safety and handling practices amongst food handlers in the Republic of Ireland. *Food control*, pp. 80, 341-349. <https://doi.org/10.1016/j.foodcont.2017.05.020>
- Nepomuceno, P. (2020, August 28). Better Safe Than Sorry: Following Health Protocols is the key. *Philippine News Agency*. Retrieve from https://www.pna.gov.ph/articles/1113396?fbclid=IwAR1D_hTn_eaYxUJTqnXCc5yDyKmB-d3qG8BlmVuQZMZYoMy_gS-B5Qj3PMw

- Organization for Economic Co-operation and Development. (2020). Job retention schemes during the COVID-19 lockdown and beyond. OECD Publishing.
- Rustia, A. S., Tan, M. A. P., Guiriba, D. N. S., Magtibay, F. P. S., Bondoc, I. R. J., & Mariano, C. B. D. (2021). Defining Risk in Food Safety in the Philippines. *Current Research in Nutrition and Food Science Journal*, 9(1), 233-257. <https://doi.org/10.12944/CRNFSJ.9.1.23>
- Sharif, L., & Al-Malki, T. (2010). Knowledge, attitude, and practice of Taif University students on food poisoning. *Food Control*, 21(1), 55-60. <https://doi.org/10.1016/j.foodcont.2009.03.015>
- Shin, H., & Kang, J. (2020). Reducing perceived health risk to attract hotel customers in the COVID-19 pandemic era: Focused on technology innovation for social distancing and cleanliness. *International Journal of Hospitality Management*, 91, 102664. <https://doi.org/10.1016/j.ijhm.2020.102664>
- Sneed, J., Strohbehn, C., & Gilmore, S. A. (2004). Food safety practices and readiness to implement HACCP programs in assisted-living facilities in Iowa. *Journal of the American Dietetic Association*, 104(11), 1678-1683. <https://doi.org/10.1016/j.jada.2004.08.031>
- Soon, J. M., Vanany, L., Wahab, I. R. A., Hamdan, R. H., & Jamaludin, M. H. (2021). Food safety and evaluation of intention to practice safe eating out measures during COVID-19: Cross-sectional study in Indonesia and Malaysia. *Food Control*, 125, 107920. <https://doi.org/10.1016/j.foodcont.2021.107920>
- Suh, B., Kang, S., & Moon, H. (2022). Estimating the Impact of COVID-19 Pandemic on Customers' Dining-Out Activities in South Korea. *Sustainability*, 14(15), 9408. <https://doi.org/10.3390/su14159408>
- Tayco, R. O., Tubog, M. V., Rizada, M. L. P., Antique, C. T., Zamora, G. Y., & Espinosa, L. B. (2023). The Effects of the COVID-19 Pandemic on the Tourism Industry in Negros Oriental, Philippines. *Journal of Business on Hospitality and Tourism*, 9(2), 155-187. <https://doi.org/10.22334/jbhost.v9i2.473>
- Uçar, A., Yilmaz, M. V., & Cakiroglu, F. P. (2016). Food safety-problems and solutions. Significance, prevention, and control of food-related diseases, 3-15. <https://dxdoi.org/10.5772/63176>
- Unnevehr, L. (Ed.). (2003). Food safety in food security and food trade (Vol. 10, p. 38). Washington, DC: International Food Policy Research Institute.
- Untaru, E. N., & Han, H. (2021). Protective measures against COVID-19 and the business strategies of the retail enterprises: Differences in gender, age, education, and income among shoppers. *Journal of Retailing and Consumer Services*, 60, 102446. <https://doi.org/10.1016/j.jretconser.2021.102446>
- World Health Organization. WHO Director-General's opening remarks at the media briefing on COVID-19, March 2020. Geneva, Switzerland: World Health Organization; 2020. <https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020>
- Zain, M. M., & Naing, N. N. (2002). Sociodemographic characteristics of food handlers and their knowledge, attitude, and practice towards food sanitation: a preliminary report. *Southeast Asian journal of tropical medicine and public health*, 33(2), 410-417.

The Influence of Social Media as a Tourism Marketing Tool in Negros Oriental, Philippines

Ryan O. Tayco*, Millard Vaughn Tubog, Glennen Y. Zamora
Negros Oriental State University, Dumaguete City, Philippines

*Corresponding Author Email: ryantayco@norsu.edu.ph

Dated received: June 1, 2024

Date revised: June 14, 2024

Date accepted: June 20, 2024

Originality: 99%

Grammarly Score: 99%

Similarity: 1%

Recommended citation:

Tayco, R., Tubog, M.V., & Zamora, G. (2024). The influence of social media as a tourism marketing tool in Negros Oriental, Philippines. *Journal of Interdisciplinary Perspectives*, 2(8), 24-35.
<https://doi.org/10.69569/jip.2024.0253>

Abstract. The study aimed to determine the influence of social media as a tourism marketing tool for Negros Oriental as a tourist destination. Utilizing a descriptive method and a correlational technique, this research focused on both local and foreign tourists visiting Negros Oriental. A total of 392 tourists were selected through convenience sampling to participate as respondents. Results indicate that the majority of respondents are female, unmarried, aged between 18 and 30, and heavily rely on social media for information, particularly when planning activities and trips. A significant portion of respondents are college-educated Filipinos, who spend an average of 4 hours and 15 minutes daily on social media. Most respondents are employed and use social media for both professional and personal purposes. Findings reveal that most travelers visit Negros Oriental for relaxation and extensively use smartphones for travel-related purposes. Facebook emerged as the most commonly used platform, significantly influencing travel decisions and planning. Socio-demographic factors such as age, gender, civil status, educational level, and occupation were found to influence social media usage patterns and travel decisions. The study concludes that social media is an effective tourism marketing tool, capable of influencing tourists' decisions regarding their visits to tourist destinations.

Keywords: Tourism industry; Social media; Social media marketing; Tourism marketing tool; Negros Oriental.

1.0 Introduction

Social media is an important information source influencing tourists' travel choices (Liu et al., 2020). In just one decade, social media have revolutionized many people's lives and thus attracted much attention, not only from one industry but also the tourism industry. The advent of new technology, such as social media, has penetrated many tourism industries and altered the way customers seek information about the tourism product of a tourist destination as the basis for their decisions to travel. Hence, this study determines the influence of social media as a tourism marketing tool in Negros Oriental as a tourist destination.

Tourism is an important sector of the Philippine economy. In 2022, tourism contributes 6.2% to the Philippines' GDP. In Negros Oriental, the latest data showed that for the entire year of 2022, tourist arrivals totaled 204,164. According to the Department of Tourism, Negros Oriental has boasted numerous tourist attractions, which also helped boost the economy. Negros Oriental is packed with many things to do, making it one of the top tourist spots in the country. Silliman University is the oldest American-founded University in Asia, and where the Silliman Anthropological Museum, is home to 2,000-year-old artifacts and information about the indigenous culture and history of the Philippines. Bais City is a popular tourist spot for whale and dolphin watching, due to its proximity across the Tañon Strait. Tourists consider the Apo Island Marine Protected Area in the Municipality

of Dauin as one of the best dive sites in the world. Festivals are also a significant tourist attraction in Negros Oriental, among the most notable, is the Buglasan Festival which is celebrated during the third week of October.

Online information and content regarding tourism sites has increased dramatically as a result of the development of social media communication (Narangajavana Kaosiri et al., 2019). Travelers can access photographs of the site and information about tours through digital marketing and strategies, which impact their behavior (Khan et al., 2022). Social media platforms have evolved into web-based spaces where people may communicate, share content, and share ideas (Islam, 2021; Javed et al., 2020). The content on these websites affects people's daily life as well as several industries, including tourism (Islam, 2021). Information from digital marketing (online information) and social media platforms influences most decisions on travel (de Amorim, Sousa, Dias, & Santos, 2022; Islam, 2021; Khan et al., 2022; Magano & Cunha, 2020).

Travelers often use social media experience comparisons to help them choose places, purchases, and dining options. With the aid of GPS, social media enables travelers to check in on time and share their experiences on destination pages to assist other prospective and future travelers in planning their travel itinerary (Islam, 2021). How information from social media affects prospective visitors' confidence in the information offered by the tourism service provider is a major worry for tourist locations. Using the expanding internet technology, social media has become a new marketing strategy in the travel industry (Sahin & Sengün, 2015).

This study explored tourists' experiences using social media as a marketing tool. The results reveal the type of social media platforms respondents use and the significance of information from social media in influencing their travel decisions. These findings are vital for tourism service providers as changing customer demographics and behaviors necessitate the industry to rethink its marketing communication strategies and actively manage social media to reduce the risk of losing customers

2.0 Methodology

2.1 Research Design

This is correlational research, in which the researchers measure at least two variables that seem to interact so that when you see one change, you have an idea of how the other will change.

2.2 Research Locale

The research was conducted in Negros Oriental, Philippines. The study was carried out in the different hotels and resorts in Negros Oriental.

2.3 Research Participants

The respondents of the study are the tourists visiting Negros Oriental, Philippines. A total of 392 respondents answered the survey questionnaire. The researchers chose respondents based on proximity and did not consider whether they represented the entire population.

2.4 Research Instrument

The questionnaire checklist is used as the main instrument for data gathering. The survey instrument included socio-demographic questions covering various aspects such as age, gender, nationality, civil status, highest educational attainment, occupation, place of origin, reasons for visiting Negros Oriental, travel companions, digital technology use, the purpose of using social media platforms, and the time spent using social media per day. Then the social media usage by the respondents in getting information about travel destinations. Social media as a tourism marketing tool was assessed adapted from Sahin & Sengün (2015) on items on the influence of social media on tourism marketing, items on the social media usage levels and reasons for use during the holiday planning process were assessed adapted from Fotis, Buhalis, & Rossides (2012), while items on roles of social media regarding tourists' decision making were assessed adapted from Liu, Mehraliyev, Liu, & Schuckert (2020), and items from the trustworthiness of social media as information sources about tourists' destination were assessed adapted from Ab Hamid, Akhir, & Cheng (2013). Slight modifications were made to reflect the exact situation of the study.

2.5 Data Gathering Procedure

Questionnaires are personally distributed and retrieved by the researchers from the respondents. The questionnaires were distributed via online platforms such as Facebook Messenger and emails. The researchers employed convenience sampling to select respondents, specifically targeting tourists visiting Negros Oriental. The collected data underwent analysis using descriptive statistics such as frequency counts and percentages. The weighted mean and standard deviation were used to summarize the sample and its measures. Additionally, multiple regressions were conducted to explore the relationship between the respondents' use of social media as a tool for tourism marketing and its impact on their travel decisions and to examine the connection between the respondents' socio-demographic profile and their utilization of social media for tourism marketing.

2.6 Ethical Considerations

In conducting this study, ethical considerations were followed, including obtaining consent from the participants and ensuring the protection of personal information per the Data Privacy Act of 2012.

3.0 Results and Discussion

3.1 Socio-demographic Profile of the Respondents

Table 1 shows the socio-demographic profile of the respondents. The findings indicated that most respondents were females between 21 and 30, predominantly single, with college-level education, mostly Filipinos, and employed.

Table 1. Descriptive statistics of the socio-demographic profile of the respondents

Variables	f	%	Variables	f	%
Age range			Nationality		
81-90	2	0.51	American	10	2.55
71-80	3	0.77	Australia	4	1.02
61-70	11	2.81	Belgian	3	0.77
51-60	22	5.61	Canadian	4	1.02
41-50	25	6.38	Dutch	2	0.51
31-40	40	10.20	Emirate	2	0.51
21-30	184	46.94	Filipino	360	91.84
18-20	105	26.79	Irish	2	0.51
Gender			Italian	1	0.26
Female	242	61.73	Nigerian	1	0.26
Male	140	35.71	Spanish	1	0.26
Prefer not to say	10	2.55	UK	2	0.51
Civil Status			Occupation		
Divorced	4	1.02	Employed	143	36.48
In a relationship	4	1.02	Student	86	21.94
Married	91	23.21	Skilled Worker/Manager	78	19.90
Separated	9	2.23	Retired	30	7.65
Single	282	71.94	Housewife	14	3.57
Widow	2	0.51	Teacher	12	3.06
Highest Educational Attainment			Health Worker	6	1.53
Postgraduate	4	1.28	Owner/Industry Owner	5	1.28
With a master's degree	2	0.51	Businessman/Woman	4	1.02
College Graduate	87	22.19	Government Employee	5	1.28
College level	190	48.47	OFW	2	0.51
College Students	11	2.71	Place of Origin		
Senior High School Graduate	5	1.28	Foreign	35	8.93
Junior High School Graduate	85	21.68	Luzon	81	20.66
Junior High School Graduate	4	1.02	Mindanao	62	15.82
Elementary Graduate	3	0.77	Visayas	209	53.32
			Prepare not to say	5	1.28

N = 392

The data shows that the highest age range of the respondents is from the age range of 21-30 and 18-20 years old. The findings are supported by the recent research by the PEW Research Center on social media use in 2021, that global consumers aged 20 to 29 are the biggest users of social media. Those in this age group make up nearly one-third (32.2%) of all social media users worldwide. The data also explains that as age increases, social media use decreases.

Regarding gender, the majority of the respondents are female. The study by Karatsoli & Nathanail (2020) explains that when planning activities and making travel arrangements, women are more active on social media compared to men. Another study by Alnjadat et al., (2019), found that females use social media for educational purposes more than males. The study by Karatsoli & Nathanail (2020) finds that women are more likely than men to receive information from social media, more when planning activities and making travel arrangements.

For the civil status, more than half of the respondents are single. This explains that single people often use social media. As revealed in the age range, they are mostly aged from 18-30 years which could better explain why they are still single. According to the PEW Research Center, young adults were among the earliest social media adopters and continue to use these sites at high levels while married individuals use fewer social media.

In terms of highest educational attainment, the Table shows that most of the respondents are college-level. The study of the PEW Research Center in 2021 found that there is a disparity of internet users by educational attainment in the Philippines. Some 86% of those with higher education, defined by the study as those who finish secondary education and above, use the internet, at least occasionally, or have a smartphone. Bumgarner (2007) explains that a large proportion of social media users are between 18 and 25 years old, and those are mostly university students.

On Nationality, it is expected that the majority of the respondents are Filipinos because the study was conducted in the Philippines, and this was followed by Americans. Digital Marketing Institute shows that as of 2021, the Philippines has the highest social media usage rate in the world and their internet use is 60% higher than the average. Filipinos spend an average of 4 hours and 15 minutes every day making them first worldwide, followed by Colombia.

The results show that most of the respondents are employed in terms of occupation. As published by Dixon in Statista in 2022, social media sites were primarily considered to be online communities for younger populations, however, people of all ages now routinely use such platforms, for matters of business, socializing, dating, politics, and daily communication. As the world's digital population grows, so do the reach and usage of social media. Social media are now part of everyday life and continue to transform the way we interact with one another on a global scale. As for the place of origin, it is anticipated that more than half of the respondents are from the Visayas since this is closer to the province of Negros Oriental.

3.2 Purpose for Visiting Negros Oriental

Table 2 presents the socio-demographic characteristics of the respondents, including their reasons for visiting the province, travel companions, use of digital technology, purpose of using social media platforms, and average daily time spent on social media.

In terms of the purpose of visiting the province, the majority of respondents travel to Negros Oriental for recreational activities, rest, and relaxation. Negros Oriental is a well-known tourist destination in the Visayas, offering beautiful scenery, great food, and fantastic diving spots. The influx of tourists to Negros Oriental, particularly Dumaguete City, has increased due to various local and international sporting events hosted in the region over the last five years, attracting both local and foreign visitors seeking recreational activities and relaxation.

Most tourists visiting the province travel with their families and enjoy the various attractions and activities offered in Negros Oriental and its capital, Dumaguete City. What makes Negros Oriental such a charming province is the combination of multiple factors. It is a vibrant place that makes its way into the heart of each visitor for decades and is one of the reasons why visitors from all over the world find it easy to get around Dumaguete City and Negros Oriental.

Most tourists in the province rely on smartphones for their digital technology needs, using them as communication devices, planners, maps, travel guides, and restaurant locators. Smartphones are an integral part of many people's lives. Smartphones are communication devices, planners, maps, personal travel guides, and restaurant locators, among other things.

Most respondents reported using social media platforms to connect with friends, seek travel destinations and exchange views about products and services was less common. Social media is a widely used information source that allows people to share information and make connections, influencing tourists' travel choices. Nowadays, people generally recognize that the Internet is the most used information source (Lee & Choi, 2009; Sørensen, 2003). Billions of people around the world use social media to share information and make connections. On a personal level, social media allows you to communicate with friends and family, learn new things, develop your interests, and be entertained (www.usf.edu). Social media are acknowledged as an important information source that influences tourists' travel choices (Liu, Mehraliyev, Liu, & Schuckert, 2020). Most respondents spend 3-4 hours on social media daily, which aligns with the 2021 findings that Filipinos spend an average of 4.06 hours using social media daily.

Table 2. Descriptive statistics of the purpose of visiting Negros Oriental

Variables	f	%
Purpose of Visiting the Province		
Culture & Learning, Studying	1	0.26
Educational purposes	3	0.77
For fun and wellness	1	0.26
Homeplace/permanent residence	6	1.53
Medical Purposes	2	0.51
Recreational activities, resting, relaxation	195	49.74
Visiting family and relatives	180	45.92
Visiting special someone	4	1.02
Travel companions		
Alone	21	5.36
Co-workers and friends	63	16.07
Family	198	50.51
Family and friends	34	8.67
Family and special someone	9	2.30
Special someone	12	3.06
Friends	55	14.03
Digital technology use		
Smartphones	279	71.17
Smartphones and Laptop	84	21.43
Smartphones and Tablet	4	1.02
Smartphones, Tablet, and Personal Computer (PC)	11	2.81
Smartphones, Laptop, and Tablet	10	2.55
Laptop	4	1.02
The purpose of using the social media platform		
Connecting with friends	125	38.89
Entertainment	90	22.96
Educational Purposes	66	16.84
Entertainment, Educational Purposes, Connecting with friends	84	21.43
Looking for a travel destination, Exchanging views about products and services	36	9.18
No. of hours spent on social media per day		
Less than 1 hour	15	3.83
1-2 hours	104	26.53
3-4 hours	120	30.61
5-6 hours	71	18.11
5-6 hours, more than 6 hours	3	0.77
More than 6 hours	79	20.15
N = 392		

3.3 Usage of Social Media

Table 3 presents the respondents' usage of different social media platforms, including the types they typically use, the platforms that influence their travel destination decisions, the most reliable sources of travel information, the platforms where they obtain travel destination information, and the platforms they use for gathering travel information.

Table 3. Descriptive statistics of the usage of social media by the respondents

Variables	f	%
Type of social media you usually use		
Facebook	326	83.16
Instagram	44	11.22
Twitter	22	6.61
Type of social media that influence your decision on choosing a destination to travel		
Facebook	302	77.04
Instagram	21	5.36
Twitter	7	.76
YouTube	23	5.87
Websites with guest evaluations (Trip Advisor, etc.)	39	9.95
Type of social media that is more reliable for travel information sources		
Facebook	305	77.81
Instagram	23	5.87
Twitter	9	2.30
YouTube	17	4.34
Websites with guest evaluations (Trip Advisor, etc.)	31	7.91
Type of social media you get information regarding a travel destination		
Facebook	315	80.36
Instagram	16	1.53
Twitter	9	2.30
YouTube	15	3.83
Websites with guest evaluations (Trip Advisor, etc.)	37	9.44
Type of social media use when gathering information about a travel destination		
Facebook	311	79.34
Instagram	14	3.57
Twitter	13	3.32
YouTube	20	5.10
Websites with guest evaluations (Trip Advisor, etc.)	34	8.67

N = 392

The majority of respondents indicated that they use Facebook. In 2021, social media platforms such as Facebook were widely utilized in the Philippines to connect with friends and family, access news and information, stream video content, and discover products and services to purchase. A study by Mariani, Di Felice, and Mura (2016) explored the strategic use of Facebook by Italian Regional Destination Management Organisations (DMOs) for destination promotion and marketing. The findings of Leung & Jiang's study (2018) suggest crucial practical implications for destination marketing organizations (DMOs) to harness Facebook marketing, focusing on the social influence of Facebook pages, especially in identification, and leveraging Facebook pages to reduce perceived behavioral control of potential visitors. Some researchers argue that consumer behaviors influenced by Facebook pages are more significant in evaluating Facebook marketing outcomes (Fisher, 2009; Tuten & Solomon, 2014).

3.4 Social Media Used as a Tourism Marketing Tool

Table 4 reveals the use of social media as a tourism marketing tool in terms of its influence on tourism marketing, social media usage levels and reasons for use during the holiday planning process, social media's roles in tourists' decision-making, and the trustworthiness of social media as information sources about tourists' destinations. To begin with, the respondents agree that they are influenced by social media marketing. The respondents agree that they are influenced by positive comments about tourist destinations/places to visit, food and beverage enterprises, hotel enterprises, activities during their stay, and tour operators/agencies. They strongly agree that positive comments about holiday destinations on social media influence them. The findings were supported by the study of Liu, Mehraliyev, Liu, and Schuckert (2020), who describe social media as an essential information source influencing tourists' travel choices. Social media has started being used as a new marketing approach within the growing internet technologies by the tourism sector (Sahin & Sengün, 2015). The advent of new technology, such as social media, has penetrated many tourism industries and altered the way customers seek information about the tourism product of a tourist destination as the basis for their decisions to travel.

In addition, most of the respondents agree on the social media usage levels and reasons for use during the holiday planning process. They agree that they used social media when beginning to search for ideas on where to go for holidays, to confirm that I made a good destination choice, seeking ideas and information on accommodation options, seeking ideas information on excursions and other leisure activities, and to have ideas as an inspiration

for my following holidays. Others strongly agree that they use social media when narrowing down their choice of destination and finding information about specific attractions and leisure activities.

Table 4. Descriptive statistics of the social media used as a tourism marketing tool

Variables	Mean	SD	Interpretation
Influence of social media on tourism marketing	4.10	0.76	Agree
Positive comments about holiday destinations on social media influence me	4.24	0.71	Strongly Agree
Positive comments about tour operators/agencies on social media influence me	4.07	0.72	Agree
Positive comments about hotel enterprises on social media influence me	4.08	0.77	Agree
Positive comments about food and beverage enterprises on social media influence me	4.14	0.78	Agree
Positive comments about activities influence me during my stay on social media	4.08	0.74	Agree
I am influenced by positive comments about tourist destinations/places to visit on social media	4.20	0.71	Agree
Social media influences my buying decision	3.86	0.90	Agree
Social media usage levels and reasons for use during the holiday planning process	4.16	0.76	Agree
I am a regular visitor of travel-related social media, so to have ideas as an inspiration for my next holidays	4.18	0.78	Agree
I used social media when beginning to search for ideas on where to go for holidays	4.14	0.79	Agree
I used social media when narrowing down my choice of destination	4.25	0.73	Strongly Agree
I used social media to confirm that I made a good destination choice	3.91	0.88	Agree
I used social media to seek ideas and information on accommodation options	4.15	0.73	Agree
I used social media to seek ideas and information on excursions and other leisure activities	4.16	0.69	Agree
I used social media to find out information about specific attractions and leisure activities	4.29	0.69	Strongly Agree
Roles of social media regarding tourists' decision-making	3.86	0.82	Agree
Social media influence my decision-making.	4.02	0.81	Agree
Social media can create initial awareness about the place and generate interest or need that lures users to travel.	4.13	0.73	Agree
Social media can remind the viewer about a destination and support his/her need and desire to travel there finally.	3.62	0.87	Agree
Social media can also work as a guide for tourists to find places to visit and things to do at the destination.	3.74	0.89	Agree
Social media play the role of approver before final travel choices are made.	3.78	0.81	Agree
Trustworthiness of social media as information sources about tourists' destination	3.89	0.77	Agree
I can obtain helpful information about tourist destinations from social media.	3.79	0.87	Agree
I feel safe doing business through social media	3.77	0.76	Agree
I can rely on the services posted on social media	3.71	0.77	Agree
Electronic word of mouth has a positive impact on purchase intention.	4.11	0.74	Agree
I trust more the comments made by members of an online community.	4.05	0.73	Agree

The study by Amaro et al. (2016) supports the idea that the widespread use of smartphones and access to the mobile Internet significantly influence how tourists gather information and make decisions, playing a crucial role in the overall travel process. Additionally, research by Fotis, Buhalis, and Rossides (2012) indicates that social media is mainly used for sharing experiences after holidays, and there is a strong link between the perceived influence of social media and changes made in holiday plans before the final decision. Various studies on social media and tourism explore how consumers obtain information to aid in trip planning and the types of online content used to make well-informed decisions about destinations, accommodations, restaurants, tours, and attractions (Chung & Buhalis, 2008; Ruzic & Bilos, 2010; Xiang & Gretzel, 2009).

Furthermore, respondents agree that social media plays a significant role in decision-making. It can create initial awareness about a place, spark interest or a need to travel, serve as a reminder, guide finding places to visit and things to do, and help finalize travel choices. Understanding the multifaceted role of social media in tourists' decision-making emphasizes the need for a comprehensive understanding of how social media platforms impact tourists' information search and decision-making processes (Cox et al., 2009; Zeng & Gerritsen, 2014). Hudson and Thal (2013) also suggest that social media is influential throughout all stages of the travel process, shaping consumers' journey from consideration and evaluation to purchase and even post-purchase experiences (Hudson & Thal, 2013; Öz, 2015). Social media is an impactful information source that influences tourists' travel choices (Liu et al., 2020). Tayco and Sequiño (2014) explain that changes in climate and weather patterns at tourist destinations can significantly impact travelers' comfort and choices.

Additionally, respondents express trust in social media as a source of information about tourist destinations. They find valuable information through social media, feel secure conducting transactions, and rely on the services

advertised on these platforms. Electronic word of mouth positively impacts purchase intention and trust in the comments made by members of online communities. This aligns with Kane et al.'s (2012) study, which suggests that social media enhances awareness and influences tourists' perceptions and attitudes in the long term rather than leading to immediate behavioral changes. Song and Yoo (2016) also demonstrate that social media has a crucial role in tourists' purchase decisions during the pre-purchase stage, with functional and monetary benefits positively affecting their willingness to purchase, intention to purchase, and decision-making.

3.5 Relationship Between the Usage of Social Media and Social Media as Tourism Marketing Tool

Table 5. Analysis for the relationship between the respondents' usage of social media and social media as tourism marketing tool

Usage and Social Media Marketing	Time Spent	Type of social Media	Type of Social Media Influence	Type of Social Media Reliability	Type of Social Media Information	Type of Social Media Information Used
	.027	.058	.065	-.021	.033	.000
Levels and Reasons	.589	.252	.202	.678	.514	.993
	392	392	392	392	388	392
	.002	.017	-.002	-.118*	.016	-.050
Influence	.964	.743	.975	.020	.757	.327
	392	392	392	392	388	392
Purpose of Using Social Media Platform	.001	-.065	-.018	-.008	-.116*	-.014
	.989	.199	.721	.880	.023	.788
	392	392	392	392	388	392

** Correlation is significant at the 0.01 level (2-tailed)

*Correlation is significant at the 0.05 level (2-tailed)

Table 5 displays the link between the respondents' social media usage and the influence of social media on travel decisions as a tourism marketing tool. The findings reveal a negative correlation between the extent to which respondents' travel decisions are influenced and the reliability of the types of social media they use. This significant correlation at the 0.05 level indicates that as the influence of social media on travel decisions increases, the perceived reliability of social media decreases. In other words, if respondents heavily rely on social media for making travel decisions, they consider fewer types of social media as reliable sources.

According to statista.com, Meta platforms like Facebook and Instagram were the Philippines' most commonly used social media platforms in 2021. This is supported by Kim and Fesenmaier's (2017) study, which emphasized the value of Facebook for sharing travel information during or after trips. Additionally, some researchers highlight the critical role of Facebook in providing essential travel information for planning and making travel decisions. This suggests that Facebook is a reliable source of travel information across social media platforms.

Table 5 also demonstrates a negative relationship between the purpose of social media platforms and the type of social media information. This notable correlation at the 0.05 level suggests that as the usage purpose of social media platforms increases, the variety of relevant social media information decreases. Therefore, if respondents primarily use social media for a specific purpose, they have access to fewer types of relevant information.

Several researchers have studied the purpose of social media usage and the type of social media information. Kang and Schuett's (2013) study found that most social media users utilize Facebook to read and share activities, making it the primary platform for obtaining relevant travel information. Moreover, Dickey and Lewis's (2010) study explains that while firms increasingly use social media for marketing and branding, many feel uncomfortable due to the unpredictable nature of social media. Among the challenges social media companies face is the need to develop appropriate strategies to handle negative comments and maintain quality control and accuracy in shared information.

3.6 Relationship Between Socio-Demographic Profile and the Usage of Social Media

Table 6. Analysis for the relationship between the respondents' socio-demographic profile and the usage of social media

Profile and Tourism Marketing	Age	Nationality	Gender	Civil Status	Highest Educational Attainment	Occupation
	.049	.120*	-.053	-.167**	.170**	-.065
Type of Social Media Used	.335	.017	.293	.001	.001	.200
	392	392	392	392	392	392
Type of Social Media Influence	-.030	.080	-.139**	-.098	.063	-.114*
	.555	.114	.006	.053	.214	.023
	392	392	392	392	392	392
Type of Social Media Reliability	-.069	.026	.086	-.066	.074	-.083
	.175	.612	.091	.190	.145	.103
	392	392	392	392	392	392
Type of Social Media Information	-.077	.068	.017	-.114*	.055	-.107*
	.129	.181	.733	.025	.284	.036
	388	388	388	388	388	388
Type of Social Media Information Used	-.025	.131**	-.038	-.118*	.061	-.078
	.623	.009	.450	.020	.228	.121
	392	392	392	392	392	392

** Correlation is significant at the 0.01 level (2-tailed)

*Correlation is significant at the 0.05 level (2-tailed)

Table 6 illustrates the connection between the socio-demographic profiles of the respondents and their social media usage. Firstly, there is a notable link between the respondents' nationality and their use of social media information. The majority of the respondents are Filipino, and the study shows that nationality affects the type of social media users and their use of information from social media. Filipinos have a high usage rate of social media, particularly Facebook. As of 2021, the Philippines has the highest social media usage rate in the world and their internet use is 60% higher than the average. Filipinos spend an average of 4 hours and 15 minutes every day making them first worldwide. According to the PEW Research Center, in a survey conducted in September 2014, Facebook remains by far the most popular social media site for gathering information.

The study also indicates a negative relationship between gender and the influence of social media, with women showing a higher likelihood of using Facebook compared to men. This suggests that gender may impact how people use social media and make decisions. According to data from the PEW Research Center, women are also particularly likely to use Facebook compared with men. According to the literature, gender may affect the way that people share information on social media and the way they use it to make decisions (Aparicio-Martínez et. al, 2020, Lin & Lu, 2011, & Lin & Wang, 2020). The study by Idemudia et. al, (2017) indicated that women had a stronger perception of ease of use, compatibility, relative advantage, and risk when using social media when compared to men.

Furthermore, civil status shows a negative relationship with the type of social media users and the information they use. Single individuals are more frequent users of social media compared to married individuals. The study also highlights the link between the highest educational attainment and social media usage, showing that those with higher education levels are more likely to use social media. As explained by the PEW Research Center, using social media is popular among college-educated people. As gleaned in Table 1, most of the respondents are college-level. Bumgarner (2007) explains that a large proportion of social media users are between 18 and 25 years old, and those are mostly university students. This explains that those with lower levels of education are less likely to use social media.

Lastly, the respondents' occupation also has a negative relationship with the influence and information obtained from social media. The study indicates that employed individuals are the majority of users, and it discusses how social media can impact the workforce positively and negatively. Social media influences and permeates many

aspects of daily life in all people, and the workforce is no exception. These digital platforms offer the potential to enhance worker productivity by fostering connections with colleagues and resources around the globe. At the same time, employers might worry that employees are using these tools for non-work purposes while on the job or engaging in a speech in public venues that might reflect poorly on their organization.

3.7 Relationship Between Socio-Demographic Profile and Social Media as a Tourism Marketing Tool

Table 7. Analysis for the relationship between the respondents' socio-demographic profile and social media as a tourism marketing tool

Profile	Digital Technology Used	Purpose of Using Social Media Platform	Time Spent on social media
	.203**	.245**	-.312**
Age	.000	.000	.000
	392	392	392
	.141**	.033	-.095
Nationality	.005	.512	.061
	392	392	392
	-.064	-.014	.048
Gender	.207	.789	.344
	392	392	392
	.049	.221**	-.155**
Civil Status	.336	.000	.002
	392	392	392
	.015	.099*	-.023
Highest Educational Attainment	.768	.050	.655
	392	392	392
	.052	.110*	-.288**
Occupation	.302	.029	.000
	392	392	392

** Correlation is significant at the 0.01 level (2-tailed)

*Correlation is significant at the 0.05 level (2-tailed)

The correlation is statistically significant at the 0.01 and 0.05 levels (2-tailed), indicating a relationship between the respondents' socio-demographic profile and the use of social media as a tourism marketing tool displayed in Table 7. The table specifically shows a significant relationship between age, nationality, civil status, highest educational attainment, and occupation, and the respondents' use of digital technology and social media platforms. The findings are supported by the recent research by the PEW Research Center on social media use in 2021, that global consumers aged 20 to 29 are the biggest users of social media as they are more familiar with technology and social media use. The data also explains that as age increases, social media use decreases. For nationality, Digital Marketing Institute shows that as of 2021, the Philippines has the highest social media usage rate in the world and their internet use is 60% higher than the average. Filipinos spend an average of 4 hours and 15 minutes every day making them first worldwide, followed by Colombia.

The findings suggest that age, nationality, civil status, educational attainment, and occupation influence the respondents' use of social media and digital technology. As revealed in the age range, they are mostly aged from 18-30 years which could better explain why they are still single. According to the PEW Research Center, young adults were among the earliest social media adopters and continue to use these sites at high levels while married individuals use fewer social media. Regarding the highest educational attainment, the study shows that most of the respondents are college-level. Bumgarner (2007) explains that a large proportion of social media users are between 18 and 25 years old, and those are mostly university students. Lastly for occupation, the results show that most of the respondents are employed. Workers turn to social media for a range of reasons while at work, with taking a mental break being among the most common.

Moreover, there is evidence that age, civil status, and occupation are negatively correlated with the time spent on social media by the respondents, indicating that these factors affect the decrease in time spent on social media.

This suggests that certain demographic factors play a role in influencing social media usage patterns. The study of Ayeh, Au, & Law (2013) proved that among individuals with Internet access who take often vacation trips, mostly young people use social media to plan their trips. For civil status, the study shows that the majority of the respondents are single. Young adults were among the earliest social media adopters and continue to use these sites at high levels, while married individuals use fewer social media. In terms of occupation, the study shows that most of the respondents are employed. Today's workers incorporate social media into a wide range of activities while on the job. Some of these activities are explicitly professional or job-related, while others are more personal.

4.0 Conclusion

Based on the findings of this study, it is concluded that Facebook is the most common social media platform used by the respondents when gathering information about visiting tourist destinations in Negros Oriental. The results showed that the respondents agree that they are influenced by social media marketing, especially when reading some positive comments about tourist destinations. Respondents also agree that they use social media during holiday planning, especially when finding information about specific attractions and leisure activities. They also agree that social media influences their decision-making and the trustworthiness of social media as information sources about tourist destinations.

This study offers evidence of the relationship between the respondents' social media usage and social media as tourism marketing tools influencing travel decisions. This means that if respondents are highly influenced by the decision-making when choosing their destination through social media, they consider fewer types of social media reliable in making travel decisions. The same can be said about the relationship between the respondents' socio-demographic profile and social media usage. The result shows that there is a relationship between the respondents' socio-demographic profile and the usage of social media. The respondents' nationality affects the type of social media users and the use of information from social media. Likewise, gender decreases the influence of social media. It also explains that single people often use social media as they are more familiar with technology and social media use. It also shows that most of the respondents are college-level, which means that level of education affects the use of social media. Employed respondents also decrease the influence and the information they get from social media.

The study also shows the relationship between the respondents' socio-demographic profile and social media as a tourism marketing tool. The results show that socio-demographic profiles such as age, civil status, highest educational attainment, occupation, and nationality have a significant relationship with the digital technology used, the purpose of using social media platforms, and the time spent on social media by the respondents. The increasing time spent on social media and the interactions with web friends and followers has dramatically changed how the respondents perceive social relationships when using social media. It explains that social media can be an effective tourism marketing tool because it can influence tourists' decisions when visiting tourist destinations.

Based on the findings, it is recommended to employ Facebook for tourism marketing campaigns aimed at young, single, and college-educated Filipinos. Emphasize Negros Oriental's recreational and relaxing aspects, highlighting its scenic beauty, food, and diving spots, and engage influencers to share positive reviews. Create visually appealing content tailored to different demographic groups, ensuring information is reliable and consistent across platforms. Integrate social media marketing with traditional efforts to reach a broader audience and enhance tourism promotion effectiveness.

5.0 Contributions of Authors

Ryan O. Tayco: Conceptualization, Writing the original draft, Writing review and editing, Writing the analysis, Writing the revision of the manuscript.

Millard Vaughn Tubog: Conceptualization, Writing the original draft, Writing the review and editing.

Glennen Y. Zamora: Conceptualization, Writing the original draft, Writing the review and editing.

6.0 Funding

This research received funding from Negros Oriental State University.

7.0 Conflict of Interests

The authors have no conflict of interest to declare.

8.0 Acknowledgment

The authors acknowledge the assistance of the Research, Innovation, Development, and Extension (RIDE) Office of Negros Oriental State University to finish this study.

9.0 References

- Ab Hamid, N. R., Akhbir, R. M., & Cheng, A. Y. (2013). Social media: An emerging dimension of marketing communication. *Journal of Management and Marketing Research*, 12, 1.
- Alnjadat, R., Hmaid, M. M., Samha, T. E., Kilani, M. M., & Hasswan, A. M. (2019). Gender variations in social media usage and academic performance among the students of the University of Sharjah. *Journal of Taibah University Medical Sciences*, 14(4), 390-394. <https://doi.org/10.1016/j.jtumed.2019.05.002>
- Aparicio-Martínez, P., Ruiz-Rubio, M., Perea-Moreno, A.-J., Martínez-Jiménez, M. P., Pagliari, C., Redel-Macias, M. D., & Vaquero-Abellán, M. (2020). Gender differences in the addiction to social networks in the southern Spanish university students. *Telematics and Informatics*. <https://doi.org/10.1016/j.tele.2019.101304>.
- Ayeh, J. K., Au, N., & Law, R. (2013). Predicting the intention to use consumer-generated media for travel planning. *Tourism Management*, 35(4), 132-143. <http://dx.doi.org/10.1016/j.tourman.2012.06.010>
- Buhalis, D. (1998). Strategic use of information technologies in the tourism industry. *Tourism Management*, 19(5), 409-421. [https://doi.org/10.1016/S0261-5177\(98\)00038-7](https://doi.org/10.1016/S0261-5177(98)00038-7)
- Casaló, L. V., Flavián, C., & Guinalíu, M. (2010). Determinants of the intention to participate in firm-hosted online travel communities and effects on consumer behavioral intentions. *Tourism Management*, 31(6), 898-911. <https://doi.org/10.1016/j.tourman.2010.04.007>
- Chung, J. Y., & Buhalis, D. (2008). Information needs in online social networks. *Information Technology & Tourism*, 10(4), 267-281. <https://doi.org/10.3727/109830508788403123>
- de Amorim, L. A., Sousa, B. B., Dias, A. L., & Santos, V. R. (2022). Exploring the outcomes of digital marketing on historic sites' visitor behavior. *Journal of Cultural Heritage Management and Sustainable Development*. <https://doi.org/10.1108/JCHMSD-11-2021-0202>
- Fotis, J. N., Buhalis, D., & Rossides, N. (2012). Social media use and impact during the holiday travel planning. In M. Fuchs, F. Ricci, & L. Cantoni (Eds.), *Information and Communication Technologies in Tourism 2012* (pp. 13-24). Springer.
- Gretzel, U., Yuan, Y. L., & Fesenmaier, D. R. (2000). Preparing for the new economy: Advertising strategies and change in destination marketing organizations. *Journal of Travel Research*, 39(2), 146-156. <https://doi.org/10.1177/004728750003900204>
- Javed, M., Tučková, Z., & Jibril, A. B. (2020). The role of social media on tourists' behavior: An empirical analysis of millennials from the Czech Republic. *Sustainability*, 12(18), 7735. <https://doi.org/10.3390/su12187735>
- Idemudia, C. E., Raisinghani, S. M., Adeola, O., & Achebo, N. (2017). The effects of gender on the adoption of social media: An empirical investigation. In 23rd Americas Conference on Information Systems (pp. 1-10). Boston, MA.
- Islam, M. T. (2021). Applications of social media in the tourism industry: A review. *SEISENSE Journal of Management*, 4(1), 59-68. <https://doi.org/10.33215/sjom.v4i1.556>
- Karatsoli, M., & Nathanail, E. (2020). Examining gender differences in social media use for activity planning and travel choices. *European Transport Research Review*, 12(1), 1-9. <https://doi.org/10.1186/s12544-020-00436-4>
- Kang, M., & Schuett, M. A. (2013). Determinants of sharing travel experiences in social media. *Journal of Travel & Tourism Marketing*, 30(1-2), 93-107. <https://doi.org/10.1080/10548408.2013.751237>
- Khan, S. A. R., Umar, M., Tanveer, M., Yu, Z., & Janjua, L. R. (2022, March). Business data analytic and digital marketing: Business strategies in the era of COVID-19. In 2022 7th International Conference on Data Science and Machine Learning Applications (CDMA) (pp. 13-18). IEEE. <https://doi.org/10.1109/CDMA54072.2022.00008>
- Leung, X. Y., & Jiang, L. (2018). How do destination Facebook pages work? An extended TPB model of fans' visit intention. *Journal of Hospitality and Tourism Technology*, 9(3), 397-416. <https://doi.org/10.1108/JHTT-08-2017-0069>
- Lin, K. Y., & Lu, H. P. (2011). Why people use social networking sites: An empirical study integrating network externalities and motivation theory. *Computers in Human Behavior*, 27(3), 1152-1161. <https://doi.org/10.1016/j.chb.2010.12.009>
- Lin, X., & Wang, X. (2020). Examining gender differences in people's information-sharing decisions on social networking sites. *International Journal of Information Management*, 50, 45-56. <https://doi.org/10.1016/j.jinfomgt.2019.05.004>
- Litvin, S. W., Goldsmith, R. E., & Pan, B. (2008). Electronic word-of-mouth in hospitality and tourism management. *Tourism Management*, 29(3), 458-468. <https://doi.org/10.1016/j.tourman.2007.05.011>
- Litvin, S. W., Bloise, J. E., & Laird, S. T. (2005). Tourists use restaurant webpages: Is the Internet a critical marketing tool? *Journal of Vacation Marketing*, 11(2), 155-161. <https://doi.org/10.1177/1356766705052572>
- Liu, X., Mehraliyev, F., Liu, C., & Schuckert, M. (2020). The roles of social media in tourists' choices of travel components. *Tourist Studies*, 20(1), 27-48. <https://doi.org/10.1177/1468797619873107>
- Magano, J., & Cunha, M. N. (2020). Digital marketing impact on tourism in Portugal: A quantitative study. *African Journal of Hospitality, Tourism and Leisure*, 9(1), 1-19.
- Mariani, M. M., Di Felice, M., & Mura, M. (2016). Facebook as a destination marketing tool: Evidence from Italian regional Destination Management Organizations. *Tourism Management*, 54, 321-343. <https://doi.org/10.1016/j.tourman.2015.12.008>
- Narangajavana Kaosiri, Y., Callarisa Fiol, L. J., Moliner Tena, M. A., Rodríguez Artola, R. M., & Sánchez García, J. (2019). User-generated content sources in social media: A new approach to explore tourist satisfaction. *Journal of Travel Research*, 58(2), 253-265. <https://doi.org/10.1177/0047287517746014>
- Ružić, D., & Bilos, A. (2010). Social media in destination marketing organizations. In *Tourism & Hospitality Management Conference Proceedings* (pp. 178-190).
- Safko, L. (2010). *The social media bible: Tactics, tools, and strategies for business success*. John Wiley & Sons.
- Sahin, G. G., & Sengün, G. (2015). The effects of social media on tourism marketing: A study among university students. *Management and Administrative Sciences Review*, 4(5), 772-786.
- Senecal, S., & Nantel, J. (2004). The influence of online product recommendations on consumers' online choices. *Journal of Retailing*, 80(2), 159-169. <https://doi.org/10.1016/j.jretai.2004.04.001>
- Tayco, R. O., & Sequiño, A. C. (2014). A correlational analysis of global climate risk indices and tourism industry indicators using fractal statistics. *Recoletos Multidisciplinary Research Journal*, 2(1).
- The Negros Chronicle. (2019). Dumaguete tourist arrivals up in 2019. Retrieved from <https://negroschronicle.com/dumaguete-tourist-arrivals-up-in-2019/>
- Uygur, S. M., & Bayram, Ö. G. A. (2013). Sanal pazarlama karması bileşenlerinin 4S modeli kapsamında turizm açısından irdelenmesi. *Marmara Sosyal Araştırmalar Dergisi*, 4, 19-37.
- Xiang, Z., Gretzel, U., & Fesenmaier, D. R. (2009). Semantic representation of tourism on the Internet. *Journal of Travel Research*, 47(4), 440-453. <https://doi.org/10.1177/0047287508326650>

Environmental and Socioeconomic Impact Analysis of Quarry Operations in General Santos City on its Host Communities

Jama Nardzmah L. Ngilay*, Leonard V. Flores
Mindanao State University - General Santos City, Philippines

*Corresponding Author Email: jammyngilay@gmail.com

Dated received: June 2, 2024

Date revised: June 14, 2024

Date accepted: June 20, 2024

Originality: 95%

Grammarly Score: 99%

Similarity: 5%

Recommended citation:

Ngilay, J.N., & Flores, L. (2024). Environmental and socioeconomic impact analysis of quarry operations in General Santos City on its host communities. *Journal of Interdisciplinary Perspectives*, 2(8), 36-46.
<https://doi.org/10.69569/jip.2024.0251>

Abstract. Several international policies have been formulated to address the environmental and social impacts of the quarrying industry. However, this multifaceted issue persists, particularly in the Buayan River System in General Santos City. This study examined the environmental and socioeconomic repercussions of quarry operations in General Santos City, focusing on 14 commercial sand and gravel quarries along the Buayan River system. A mixed-methods approach was employed, collecting quantitative data through structured questionnaires, direct observations, and secondary data analysis, and incorporating qualitative insights from key informant interviews. Stakeholders within a 500-meter radius of the quarries were sampled using Quantum Geographic Information System (QGIS) to ensure representation. The findings revealed significant environmental impacts, including increased dust levels, soil erosion, and changes in water quality, which have adversely affected the local ecosystem and residents' health. The socioeconomic effects were mixed: while quarrying created jobs and improved infrastructure, it also showed deficiencies in community engagement and training programs. Regulatory analysis identified strengths in collaboration but highlighted weaknesses in enforcement, fee systems, and monitoring. The results indicated that although quarrying provides economic benefits, enhanced regulatory enforcement and sustainable practices are imperative to mitigate associated costs. Recommendations include strengthening enforcement, improving community engagement, updating fee structures, and implementing sustainable quarrying practices in General Santos City. By incorporating these recommendations, General Santos City can ensure the quarrying industry operates responsibly, balancing economic benefits with environmental and social well-being.

Keywords: Environmental impact; Quarrying operations; Socioeconomic effects; General Santos City.

1.0 Introduction

Quarrying, the process of extracting natural resources such as rocks, sand, and gravel from the earth's surface, is integral to various industries, notably construction. According to the United States Geological Survey (2021), quarrying is characterized as "the extraction of stone from the earth's crust using methods such as cutting, blasting, or drilling." These extracted materials fulfill various purposes, such as construction, landscaping, and road building, underscoring its importance for socio-economic advancement. For example, the European Aggregates Association highlights its significant role in the European economy, with an estimated turnover of around €18 billion and employment of approximately 200,000 individuals (European Aggregates Association, 2017-2018).

On the other hand, Quarrying can have significant environmental repercussions, negatively impacting surrounding communities. Concerns such as soil erosion, water pollution, biodiversity loss, and habitat

destruction pose serious threats to human health, ecosystems, and the local economy. Endalew, Tasew, and Tolahun (2019) highlighted various socio-environmental consequences of stone quarrying. These include reduced agricultural productivity, impediments to farming, habitat destruction, deforestation, changes in land use and landscape, obstruction of animal movement, erosion and sedimentation, loss of aesthetic value, fatalities among livestock and humans, property damage, dust-induced air pollution, and health problems like stress, coughs, and colds. Furthermore, international policies such as the Sustainable Development Goals (SDGs) emphasize responsible and sustainable quarrying practices, aligning industry needs with community welfare. In the Philippines, the mining industry operates under the Philippine Mining Act of 1995 (R.A. No. 7942), promoting responsible exploration, development, and utilization of mineral resources. Regulatory frameworks, including the Philippine Environmental Impact Statement System (PD 1586), oversee environmental impact assessments for quarry projects, ensuring compliance with legal requirements. Despite its economic significance, the quarry industry presents environmental and socio-economic concerns, particularly in rural communities. Hence, evaluating the performance of quarry industries in General Santos City and analyzing their impact on host communities are imperative. This study aims to assess existing policies and regulations governing the industry's operations and determine their effectiveness in mitigating negative impacts. Through comprehensive research, insights can be gained into the challenges and opportunities confronting the quarrying industry, facilitating a more sustainable and equitable development trajectory.

2.0 Methodology

2.1 Research Design

The study utilized a mixed-methods approach, systematically integrating quantitative and qualitative methodologies to gain a more comprehensive understanding of the research question (Tashakkori & Newman, 2010). This aligns with the pragmatic stance of mixed-methods research, where both quantitative and qualitative data are collected and analyzed (Tashakkori & Newman, 2010).

2.2 Research Locale

The study was carried out in the Buayan River area, situated between the boundaries of General Santos City and Sarangani Province in the Philippines. The coordinates for Buayan River are Latitude: 6° 5' 48" N and Longitude: 125° 14' 17" E, as derived from the Mindat.org base map data. Buayan River is of significant importance as it serves as the primary location for numerous government-permitted quarrying sites in General Santos City, responsible for a substantial portion of the area's quarrying activities. The Buayan River System encompasses four distinct Barangay communities—Buayan, Ligaya, Katangawan, and Tinagacan—that house legal quarry sites within the city. These barangays are integral to the research locale, offering diverse perspectives and experiences related to the study topic.

2.3 Research Participants

The research study's population sample frame included Quarry Workers and Community Households. Quarry Workers were selected from 14 active quarry sites along the Buayan River system, with 49 respondents chosen based on submitted Work Programs. Community Households' sample size was determined using QGIS Open Street Map and Mapflow, identifying approximately 686 buildings/houses within a 500-meter radius of the quarry sites. Utilizing Slovin's Formula, the sample size for Community Households was calculated as 157. Based on these calculations, a total sample size of 49 Quarry Workers and 157 Community Households was selected to represent their respective populations in the study.

2.4 Research Instrument

The study used validated questionnaires, interviews, and observations to collect primary data. Structured questionnaires were distributed among Quarry Workers to assess their daily challenges and the socioeconomic impact of quarrying on their lives. Separate questionnaires were given to Household Respondents to identify issues resulting from quarry operations. Key Informant Interviews were conducted with Regulatory Agencies to understand their quarry management practices. The observation method was employed to gather information on quarry activities, supplemented by photographs. Secondary data from various sources, including textbooks and government documents, were consulted to augment the data collection process and enhance understanding of the research topic.

2.5 Data Gathering Procedure

During the fieldwork phase, a comprehensive data collection approach was employed, combining quantitative and qualitative methods to engage diverse stakeholders. Prior to data collection, participant consent was obtained to uphold ethical standards. Quantitative data were gathered using focused questionnaires tailored for quarry workers and nearby residents, aiming to understand environmental and socio-economic impacts. Qualitative insights were obtained through Key Informant Interviews with stakeholders, shedding light on quarry management policies and practices. Extensive surveys were conducted in the study area, visiting quarries along the Buayan River to observe activities and their effects. Both primary (observation, interviews, questionnaires, photographs) and secondary (books, journals, internet sources) sources were utilized. This multifaceted approach facilitated a comprehensive understanding of quarrying challenges, impacts, and management practices, enriching the research findings with diverse perspectives.

2.6 Ethical Considerations

This research study adhered to ethical guidelines and received a certificate of exemption from ethics review from the Mindanao State University-General Santos Institutional Ethics Review Committee (MSU-General Santos IERC). The exemption was granted based on the necessary submitted requirements, confirming that the study protocol and related documents were reviewed and approved for implementation. The study, titled "Environmental and Socioeconomic Impact Analysis of Quarry Operations in General Santos City on Its Host Communities," was assigned Approval No. 026-2024-MSUGSC-IERC with a Study Protocol Code of 2024-026-SR. The approval, effective from January 23, 2024, to January 23, 2025, was given under the provisions that the study involves a non-sensitive survey and the participants' names are anonymized.

3.0 Results and Discussion

3.1 Impact of Quarrying Activities

Table 1 presents impact severity classifications adapted from commonly used ranges in risk assessment studies. The impact severity is categorized based on the percentage ranges of "YES" responses.

Table 1. Impact severity classification		
YES Percentage Range	Impact Severity	Description (Implication)
0-20%	Insignificant	Minimal Impact (Barely noticeable ecological disruption)
21-40%	Minor	Short-term Impact (Potential for ecological disturbance, but likely temporary and recoverable)
41-60%	Moderate	Significant Impact (Substantial ecological disruption that may require intervention or mitigation strategies)
61-80%	Major	Major Short-term Impact (Severe ecological disruption that can have lasting effects)
81-100%	Catastrophic	Major Long-term Impact (Devastating ecological consequences, potentially irreversible)

Quarry Impact on Agriculture and Land

The systematic classification provided by Table 2 offers a comprehensive understanding of the severity of impacts stemming from quarrying activities in General Santos City, particularly concerning agriculture and land degradation. Responses are categorized into severity levels ranging from Insignificant to Catastrophic, offering nuanced insights into the varying degrees of impact experienced by the surveyed population. The study examined how quarrying affects nearby agriculture.

Over half (59.2%) of those surveyed felt the natural landscape was significantly altered by quarrying. An even greater concern (73.2%) was soil erosion, suggesting a major impact on soil quality and crop yields. The visual appearance of the area was also significantly affected, with 72.6% of people finding it altered by quarrying. While less concerning than erosion, a moderate number of people (42%) reported reduced soil fertility. There were also moderate impacts on agricultural infrastructure (42%) and potential long-term sustainability (45.9%). Although some reported a decline in crop yield (37.6%) and produce quality (33.1%), these effects were considered minor.

Interestingly, the environmental challenges documented in this study align with the findings of previous research undertaken in other regions impacted by quarrying, such as studies conducted in Nigeria and Ethiopia by Endalew, Tasew, and Tolahun (2019).

Table 2. Descriptive statistics of the quarry impact on agriculture and land

Question	Yes	No	% Yes	Impact Severity
1. Have you noticed any changes in the natural landscape due to quarrying activities in your area?	93	64	59.2%	Moderate
2. Do you believe that quarrying operations have led to increased soil erosion in the area?	115	42	73.2%	Major
3. Do you think quarrying activities have impacted the visual aesthetics of the surrounding areas in General Santos City?	114	43	72.6%	Major
4. Do you perceive a reduction in soil fertility due to quarrying activities?	66	91	42%	Moderate
5. Have crop yields in the community decreased since the start of quarrying activities?	59	98	37.6%	Low
6. Have farmers reported a decline in the quality of their produce since the quarrying operations began?	52	105	33.1%	Low
7. Have there been instances of damage to agricultural infrastructure (e.g., irrigation channels, farm buildings) caused by quarrying?	66	91	42%	Moderate
8. Do farmers perceive any long-term negative effects on the sustainability of agriculture due to ongoing quarrying operations?	72	85	45.9%	Moderate

Dust Impact from Quarrying Activities

The analysis of survey responses provides significant insights into the profound impact of dust emissions from quarrying activities, closely aligning with the findings of Sayara's (2016) research. Notably, 72% of respondents in this survey reported heightened dust levels near quarries, which corresponds to Sayara's finding that approximately 70% of participants identified persistent atmospheric contamination due to quarrying and stone-cutting operations. This parallel underscores a consistent recognition of dust as a major environmental issue in areas adjacent to quarries. Moreover, both studies highlight the multifaceted sources of dust emissions. While 42% of this research's respondents noted dust settling on plants near quarries, posing a moderate threat to vegetation growth, Sayara's study expands on this by indicating that dust generation is not solely attributed to on-site activities.

Table 3. Descriptive statistics of the dust impact from quarrying activities

Question	Yes	No	% Yes	Impact Severity
1. Have you noticed an increase in dust levels in the vicinity of quarrying sites in the area?	113	44	72%	Major
2. Have you observed dust particles settling on plants and affecting their growth near quarrying sites?	66	91	42%	Moderate
3. Do you believe that the dust emissions from quarrying activities have negatively impacted the cleanliness of nearby communities?	99	58	63.1%	Major
4. Do you think that quarrying activities contribute to the presence of dust indoors in residential areas near the quarry sites?	101	56	64.3%	Major
5. Have you noticed an increase in the need for cleaning due to dust accumulation in your home or business premises near quarrying areas?	93	64	59.2%	Moderate

The transportation of trucks to and from quarry sites significantly contributes to dust emissions and other pollutants from fuel combustion, emphasizing the complexity of the issue and the necessity for comprehensive mitigation strategies. Regarding community impact, a majority of respondents reported a major negative effect on community cleanliness, potentially affecting residents' quality of life. Similarly, over 64.3% noted the contribution of quarrying activities to indoor dust presence. Sayara's findings resonate with these concerns, with approximately 70% of participants in her study verifying that the impact of dust extends beyond regular working hours, indicating a pervasive and continuous issue. In summary, the findings from both my research and Sayara's study underscore the significant impact of quarrying-related dust emissions on the environment and residents' health. The alignment between these independent studies emphasizes the urgent need for effective mitigation measures to safeguard well-being and reduce the environmental footprint of quarrying activities.

Noise and Vibration Impact from Quarrying Activities

Table 4. Descriptive statistics of the noise and vibration impact from quarrying activities

Question	Yes	No	% Yes	Impact Severity
1. Have you noticed an increase in noise levels in the vicinity of quarrying sites?	85	72	54.10%	Moderate
2. Do you believe that the noise generated by quarrying activities is disruptive to nearby residents?	72	85	45.90%	Moderate
3. Do you think that quarrying activities have resulted in vibrations that are noticeable in nearby structures or homes?	69	88	43.90%	Moderate
4. Have you observed cracks or damage to buildings or infrastructure that you attribute to the vibrations generated by quarrying?	59	98	37.60%	Minor
5. Do you believe that the noise pollution and vibration from quarrying activities have negatively impacted the quality of life for nearby residents?	70	87	44.60%	Moderate

Noise is any unwelcome sound that irritates the human ear. Uncontrolled noise emissions in the sand and stone operation are increasing noise pollution among quarry workers and neighboring residents. Noise overload can cause problems ranging from discomfort to hearing impairment (Yakup & Payus, 2017). Table 4 shows that over half (54.1%) of respondents reported a moderate increase in noise levels near the quarries, while nearly half (45.9%) felt the noise disturbed their neighbors. These results suggest a noticeable but not severe impact on the noise environment. Similarly, vibrations were perceived as moderate. Almost half (43.9%) reported noticeable vibrations in their homes or structures, while a smaller portion (37.6%) experienced minor cracks or damage. This indicates some impact on infrastructure but not widespread or severe issues. Overall, over 44% of respondents felt a moderate negative impact on their quality of life. This suggests a manageable level of disruption from noise and vibrations. The study found that noise pollution and vibrations from quarrying, while acknowledged and affecting the surrounding area, are perceived as moderately severe. This opens the door for targeted strategies to address these concerns without needing drastic measures.

Impact of Quarrying on Water Resources and River Systems

Table 5. Descriptive statistics of the impact of quarrying on water resources and river systems

Description of Indicator	Yes	No	% Yes	Impact Severity
1. Has there been a noticeable increase in water turbidity since the commencement of quarrying operations?	76	81	48.4%	Moderate
2. Are there instances of spills or leaks of hazardous chemicals from the quarry into nearby water bodies?	43	114	27.4%	Minor
3. Has the community observed changes in the color of water in rivers or streams near the quarry site?	60	97	38.2%	Minor
4. Has the community witnessed the diversion of natural water channels as a direct consequence of quarrying operations?	87	70	55.4%	Moderate
5. Have there been instances of public infrastructure damage, such as bridges or culverts, attributed to changes in water flow caused by quarrying?	87	70	55.4%	Moderate
6. Have residents experienced instances of property damage directly attributed to changes in water flow caused by quarrying operations?	96	61	61.1%	Major
7. Has the frequency of flooding in the community increased since the commencement of quarrying operations?	77	80	49%	Moderate
8. Are there instances where residents have had to relocate due to water-related hazards exacerbated by quarrying activities?	66	91	42%	Moderate
9. Do residents feel adequately informed about the potential impact of quarrying on water rechanneling and flooding?	77	80	49%	Moderate

The findings of Devi and Rongmei (2017) shed light on one of the most significant environmental repercussions of quarrying, particularly in relation to rivers. The study highlights how excessive sand and gravel extraction from riverbanks, often used as quarrying sites to meet demand, weakens the riverbed, altering the flow of the river and potentially changing its course. This alteration in water flow patterns is corroborated by a recent study examining the impacts of quarrying operations on communities near rivers. This research reports that 55.4% of respondents experienced changes in water flow patterns, classified as moderate severity, indicating noticeable but not critical problems. Furthermore, property damage resulting from changes in water flow was reported by 61.1% of respondents, categorized as a major impact. Additionally, 42% of individuals reported needing to relocate due to

water dangers, while 49% observed an increase in flooding, both classified as moderate severity. These findings underscore the complex effects of quarrying on rivers and adjacent communities, aligning with the environmental repercussions outlined by Devi et al. (2017).

Impact of Quarrying on Biodiversity

Table 6. Descriptive statistics of the impact of quarrying on biodiversity

Description of Indicator	Yes	No	% Yes	Impact Severity
1. Has the biodiversity in our community been negatively impacted by the presence of the quarry?	71	86	45.2%	Moderate
2. Do you observe a decrease in the population of local plant species due to quarrying operations?	66	91	42%	Moderate
3. Has there been a noticeable decline in the number of animal species in your community since the Commencement of quarrying activities?	49	108	31.2%	Minor
4. Has the air and noise pollution from quarrying operations negatively impacted the behavior and abundance of local bird species?	54	103	34.4%	Minor

The findings of Cohen (2015) regarding the negative impact of quarrying on biodiversity align with the concerns highlighted in Table 6 of the surveyed area. Residents expressed significant apprehension regarding the decline in biodiversity, with 45.2% noting a decrease, indicating substantial ecological disruption. This sentiment was further supported by observations of fewer plants by 42% of residents and fewer animal species by over 31%. Additionally, the survey explored indirect impacts such as air and noise pollution, with approximately 34% of residents directly linking these factors to bird populations, thereby emphasizing the multifaceted environmental consequences of quarrying. These findings collectively suggest that quarrying activities likely have a moderate negative impact on the variety of plants and animals in the area, echoing Cohen's concerns about the potential destruction of habitats and the species they support due to quarrying activities. Even if habitats are not directly removed, they can still be indirectly affected by environmental impacts such as changes to groundwater or surface water, leading to habitat destruction.

On-Site Environmental Impacts of Quarrying

Table 7. Descriptive statistics of the on-site environmental impacts of quarrying

Description of Indicator	Yes	No	% Yes	Impact Severity
1. Is the air quality at the quarry site affected by dust and particulate matter during quarrying operations?	17	32	34.7%	Minor
2. Have you experienced respiratory issues due to exposure to airborne pollutants at the quarry?	8	41	16.3%	Insignificant
3. Is there a significant increase in noise levels during quarrying activities?	15	34	30.6%	Minor
4. Do you find it challenging to communicate or work efficiently due to the noise generated by quarry machinery?	7	42	14.3%	Insignificant
5. Has the water quality in nearby water bodies been negatively impacted by runoff or discharge from the quarry?	4	45	8.2%	Insignificant
6. Have you observed changes in the color, odor, or clarity of water in the vicinity of the quarry?	13	36	26.5%	Minor
7. Have you noticed a decline in local plant and animal species around the quarry area?	4	45	8.2%	Insignificant
8. Do you feel that quarrying operations pose safety risks to workers, such as the potential for landslides or rockfalls?	10	39	20.4%	Insignificant

Table 7 provides an analysis of the impact of quarrying activities on the occupational environment based on workers' perceptions. Dust and noise were the top concerns, with over 30% of workers mentioning each. However, fewer workers reported actual health problems from dust (16.3%) or communication issues due to noise (14.3%). Observations showed minimal dust, possibly due to dust suppression methods using water. Similarly, water quality concerns were reported by a small percentage (8.2%), though a larger portion (26.5%) noticed changes in the water itself. There weren't many worries about worker safety or biodiversity loss. Overall, the negative impacts on the work environment seem minor based on worker experiences. However, the study suggests keeping a close eye on these issues and finding better ways to manage them to ensure long-term sustainability of the quarrying operations.

Socioeconomic Impact of Quarry Operations on its Host Communities

Table 8. Descriptive statistics of the socioeconomic impact of quarry operations on its host communities

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mode
1. Quarry provided employment opportunities.	10 (6.5%)	8 (5.2%)	28 (18.2%)	65 (42.2%)	46 (29.9%)	4 (mode)
2. Quarry contributed to an increase in the income levels.	2 (1.3%)	9 (5.8%)	38 (24.7%)	64 (41.6%)	44 (28.6%)	4 (mode)
3. The quarry industry improved the infrastructure development.	3 (1.9%)	17 (11%)	36 (23.4%)	68 (44.2%)	33 (21.4%)	4 (mode)
4. The quarry industry has positively impacted the overall quality of life in the host community.	3 (1.9%)	23 (14.9%)	74 (48.1%)	40 (26%)	16 (10.4%)	3 (mode)
5. The quarry industry actively participated in community development projects.	6 (3.9%)	19 (12.3%)	54 (35.1%)	20 (37.7%)	20 (13%)	4 (mode)
6. The quarry industry provided training and skill development opportunities.	7 (4.5%)	17 (11%)	43 (27.9%)	76 (49.4%)	14 (9.1%)	4 (mode)
7. Quarry contributed to an increase in business opportunities.	4 (2.6%)	15 (9.7%)	58 (37.7%)	24 (36.4%)	24 (15.6%)	3 (mode)
8. quarry industry contributed to an increase in property values	2 (1.3%)	14 (9.1%)	51 (33.1%)	64 (41.6%)	25 (16.2%)	4 (mode)

Table 8 outlines the socioeconomic effects of quarry operations on host communities, gauged through a Likert scale from "Strongly Disagree" to "Strongly Agree." The survey delves into multiple facets of the quarry's influence, including employment opportunities, income levels, infrastructure, quality of life, community projects, training, business prospects, and property values. Results indicate widespread agreement that the quarry positively impacts employment, income, infrastructure, and skill development. However, perceptions regarding overall quality of life vary, with significant numbers expressing neutrality or negativity. Likewise, opinions on the quarry's involvement in community projects, business opportunities, and property values are mixed. This underscores the nuanced and diverse perspectives on the socioeconomic implications of quarry operations, emphasizing the necessity for comprehensive research to comprehend their full impact on communities.

Impact of Quarrying on Local Health and Well-being

Table 9. Descriptive statistics of the impact of quarrying on local health and well-being

Description of Indicator	Yes	No	% Yes	Impact Severity
1. Have you experienced any respiratory problems or illnesses that you attribute to the quarry industry?	52	105	33.1%	Minor
2. Have you witnessed any cases of allergies or skin irritations in individuals living near quarry sites?	59	98	37.6%	Minor
3. Have you observed any negative impacts on the mental health and well-being of individuals living in the host communities due to the quarry industry?	68	89	43.3%	Moderate
4. Have you personally sought medical treatment or consultation for health issues related to the quarry industry?	33	124	21%	Minor
5. Do you think that the quarry industry has taken sufficient measures to protect the health and safety of the local population?	78	79	49.7%	Moderate

The production of dust during quarrying operations is a prominent and intrusive impact that has the potential to cause irritation. Despite its high visibility, Howard and Cameron (as cited in Sayara, 2016) noted that apprehensions regarding the impact of dust may not necessarily align with its factual consequences on the well-being of individuals and the ecosystem. Table 9 provides a comprehensive view of the impact of quarrying on local health and well-being, detailing various health-related consequences associated with quarry operations in the study area. The findings reveal that 33.1% of respondents experienced respiratory issues attributed to quarry operations, indicating a noticeable but not overwhelmingly prevalent problem, possibly transient or recoverable. Similarly, cases of allergies or skin irritations reported by 37.6% of respondents fall within the "Minor" impact

severity range, suggesting they are noticeable but not significant or long-lasting disruptions. Mental health impacts, affirmed by 43.3% of respondents, shift the impact severity to "Moderate," indicating a more substantial disruption potentially necessitating intervention. Seeking medical treatment for quarry-related health issues was reported by 21% of respondents, indicating a "Minor" impact severity, suggesting relatively low overall health impacts requiring medical intervention. Perceptions of the adequacy of measures taken by the quarry industry to protect local health and safety, with a response rate of 49.7%, fall within the "Moderate" impact severity range, indicating ongoing concerns among a significant portion of the population and suggesting a need for further intervention or improvement in safety measures. These findings highlight the importance of addressing both the perceived and actual health impacts of quarrying dust, emphasizing the need for enhanced mitigation strategies to protect community well-being effectively.

Socioeconomic Impact of Quarry Operations on Quarry Workers

Table 10. Descriptive statistics of the socioeconomic impact of quarry operations on quarry workers

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mode
1. The quarry industry provides stable employment opportunities for quarry workers.	0 (0%)	4 (8.2%)	1 (2.0%)	14 (28.6%)	30 (61.2%)	5 (mode)
2. Quarry workers receive fair and competitive wages for their work	1 (2.0%)	3 (6.1%)	8 (16.3%)	12 (24.5%)	25 (51.0%)	5 (mode)
3. Quarry workers have access to appropriate safety measures and protective equipment	2 (4.1%)	4 (8.2%)	4 (8.2%)	23 (46.9%)	16 (32.6%)	4 (mode)
4. The quarry industry provides opportunities for skills development and career advancement for quarry workers.	1 (2.0%)	6 (12.2%)	5 (10.2%)	18 (36.7%)	19 (38.8%)	5 (mode)
5. Quarry workers have adequate access to healthcare and medical benefits.	1 (2.0%)	6 (12.2%)	6 (12.2%)	19 (38.8%)	17 (34.7%)	4 (mode)
6. Quarry workers are satisfied with their working conditions	1 (2.0%)	3 (6.1%)	8 (16.3%)	17 (34.7%)	20 (40.8%)	5 (mode)
7. Quarry workers have opportunities for participation and representation in decision-making processes within the quarry industry	0 (0%)	4 (8.2%)	7 (14.3%)	19 (38.8%)	19 (38.8%)	4&5 (mode)
8. The quarry industry provides training and educational programs for the professional development of quarry workers.	0 (0%)	5 (10.2%)	13 (26.5%)	16 (32.6%)	15 (30.6%)	4 (mode)
9. Quarry workers feel a sense of job security within the quarry industry	0 (0%)	3 (6.1%)	8 (16.3%)	17 (34.7%)	21 (42.9%)	5 (mode)
10. The quarry industry promotes a healthy work-life balance for quarry workers	0 (0%)	4 (8.2%)	7 (14.3%)	16 (32.6%)	22 (44.9%)	5 (mode)
11. The quarry industry fosters a positive and inclusive work environment for quarry workers.	0 (0%)	3 (6.1%)	6 (6.1%)	16 (32.6%)	24 (48.9%)	5 (mode)

According to Sumani (2019), the practice of small-scale industrial sand and gravel mining has both advantageous and detrimental effects on socio-economic and environmental aspects. The extraction of sand and gravel offers various benefits, such as creating employment opportunities, generating income, providing building and construction materials, and serving as a means of subsistence for numerous stakeholders involved in the sand and gravel extraction value chain.

Data from Table 10 indicates that a significant majority of respondents perceive the quarry industry as providing numerous beneficial aspects for quarry workers, including stable employment opportunities, fair wages, safety measures, skills development, healthcare access, job satisfaction, participation in decision-making, training programs, job security, work-life balance, and a positive work environment. However, challenges such as the lack of strong agreement on training and educational programs underscore areas needing improvement. Greater investment in training programs and enhanced worker involvement in decision-making processes are essential for a more empowered and resilient workforce. In conclusion, while the quarry industry brings positive socioeconomic impacts, addressing challenges related to training programs and worker participation is crucial for fostering a more satisfied and empowered workforce, benefiting both individuals and the community.

3.2 Challenges, Strategies, and Expected Benefits in Sand and Gravel Extraction Regulation

Table 12. Challenges, strategies, and expected benefits in sand and gravel extraction regulation

Challenge/Weaknesses	Description	Strategy	Expected Benefits
Outdated Extraction Fee System & Absence of Standardized Tariff	Unfair fee structures, inconsistent pricing, and insufficient revenue collection.	Conduct a review of the extraction fee system to ensure it reflects current market value. Establish a standardized tariff system for sand and gravel based on type and quantity.	Fairer compensation for extracted materials. Increased revenue collection for local governments.
Manpower Shortage for Monitoring	Need for more personnel for continuous oversight and enforcement.	Increase the number of quarry checkers. Combine CENRO personnel with Barangay Quarry Checkers for a well-rounded team with regulatory knowledge and local insights. Foster community trust and encourage residents to report potential issues.	Stronger monitoring presence. Broader geographical coverage with frequent site visits. Improved detection of non-compliant practices.
Inadequate Enforcement Mechanisms & Expansion Beyond Designated Boundaries	Weak enforcement allows non-compliance and unauthorized expansion.	Implement stricter enforcement mechanisms with increased inspections. Establish clear and deterrent penalties for non-compliance, including potential license revocation. Utilize technology like satellite imagery to identify unauthorized expansion.	Reduced instances of non-compliance and unauthorized operations. Protection of designated boundaries and surrounding areas.
Unclear Accountability in Agreements & Dependence on External Agencies	Lack of clear mechanisms to ensure operator accountability and potential delays in addressing non-compliance due to reliance on external agencies.	Develop clear agreements with operators outlining their obligations and establish mechanisms to ensure compliance. Reduce reliance on external agencies by strengthening internal monitoring capabilities or collaborating with them for more efficient oversight.	Improved operator accountability. Timelier responses to non-compliance issues.
Operator Concerns about Compliance	Operators may hesitate to comply due to various circumstances.	Engage with operators to address their concerns about regulations. Highlight the long-term benefits of compliance for the industry and the environment. Consider offering incentives for responsible practices.	Increased understanding and acceptance of regulations. Greater industry cooperation in achieving sustainable practices.

Table 12 provides a detailed examination of the challenges identified through Key Informant Interviews in regulating sand and gravel extraction. It also proposes corresponding strategies and outlines the expected benefits aimed at addressing these obstacles effectively.

Table 13. Technologies and mitigating strategies

Sustainable Practice	Benefit	Target Environmental Impact
NACI Dikes	Promotes natural plant growth, stabilizes banks, creates aquatic habitat	Erosion prevention, healthy river ecosystem
Bamboo Planting	A cost-effective, fast-growing root network binds soil particles and minimizes downstream sedimentation.	Erosion control, healthy river ecosystem
Dust Suppression & Noise Barriers	Improves air quality, protects human health, minimizes noise pollution	A healthy environment for communities and wildlife
Erosion Control Measures (buffer zone & blankets)	Natural barrier against erosion minimizes sedimentation	Water quality protection, healthy aquatic life
Suction Dredging Techniques	Minimizes disturbance to riverbed habitat and reduces suspension of sediment.	Healthy riverbed environment, aquatic life protection

Table 13 presents key technologies and mitigation strategies highlighted by key informants to minimize the environmental impact of quarrying operations. This focus on specific examples related to riverbank rehabilitation and broader environmental protection. Table 14 outlines the multifaceted impacts of quarrying activities and provides a detailed set of recommendations to mitigate these effects. Key areas assessed include water and air quality, ecological health, spatial planning, road maintenance, dust control, health impacts, economic implications, skill development, data management, stakeholder capacity building, enforcement collaboration, regulatory compliance, and sustainability standards. Each assessment area identifies specific findings and pairs

them with actionable recommendations to address both environmental and socio-economic challenges posed by quarrying operations.

Table 14. Recommendations

Area of Assessment	Findings	Recommendations
Water and Air Quality Assessment	Quarrying operations affected water resources, leading to increased turbidity, changes in flow patterns, and more frequent flooding. Air quality is compromised by elevated dust levels.	Establish baseline data and conduct ongoing monitoring of surface and groundwater quality for potential contaminants like sediment runoff, blasting materials, and microbial contamination. Monitor air quality for dust particles and other pollutants.
Ecological Studies	Biodiversity declines, with residents reporting less plant and animal life due to quarrying activities.	Conduct a quantitative analysis of flora and fauna populations before, during, and after quarrying. Assess impacts on endangered or threatened species, migratory patterns, soil health, and potential contamination risks.
Quarrying in Spatial Planning	Lack of integration of quarrying activities into long-term spatial planning results in unplanned and unsustainable land use.	Integrate quarrying activities into spatial planning processes, considering geological assessments and environmental impacts for long-term sustainability. Identify suitable areas for quarrying, minimize community and ecosystem impacts, and explore alternative sources of aggregates.
Road Maintenance	Quarry trucks damage local roads, causing significant inconvenience and safety hazards for residents.	Enforce the "Daan Ko, Sagot Ko" policy, requiring operators to maintain roads damaged by hauling trucks, ensuring safer and more reliable transportation routes.
Dust Control Measures	Increased dust levels from quarrying activities adversely affect air quality and health.	Implement and enforce dust control measures such as water spraying and planting trees around the quarry sites to serve as dust filters.
Ensuring Accountability for Road Repairs	Lack of clear procedures for holding operators accountable for road repairs, leading to unresolved road damage issues.	Establish clear procedures for holding operators accountable through consultations and dispute resolution processes to ensure timely and effective road repairs.
Health Impact Assessment	Significant health impacts on residents and workers due to dust exposure and noise pollution. Residents reported increased dust levels affecting air quality and health; workers faced potential changes in water quality and noise levels.	Partner with medical professionals to administer comprehensive, long-term health evaluations, including health screenings, monitoring respiratory conditions, and investigating hearing impairments. Integrate assessments of mental health to address stress from dust exposure and other factors.
Economic Analysis	Quarrying provides economic benefits such as job creation and infrastructure improvements, but concerns exist about the long-term viability and costs of environmental degradation.	Analyze tax revenue, infrastructure costs, crowding out effects on local businesses, and long-term economic viability. Assess the cost-effectiveness of sustainable practices and reclamation efforts after quarrying.
Skill Development	Mixed socio-economic impacts of quarrying. Lack of community engagement and ineffective training programs lead to resident dissatisfaction.	Offer programs focusing on skills development that are aligned with community needs. Partner with local technical schools to provide training in equipment maintenance and other relevant skills to improve community well-being and economic prospects.
Data Management for Oversight	Effective monitoring and enforcement are hindered by insufficient data collection and lack of transparency.	Develop a comprehensive data collection plan for all environmental and health monitoring activities. Ensure transparency by making data publicly available in an accessible format. Regularly review and update data collection methods and analysis procedures.
Building Capacity with Stakeholders	Lack of community engagement and dissatisfaction with training programs offered by quarry operators.	Partner with barangays to educate residents about the quarrying project, its potential impacts, and mitigation strategies. Empower residents to participate in informed decision-making.
Collaboration with Barangays in Enforcement	Weak enforcement and insufficient monitoring were identified as major issues.	Establish a collaborative approach with barangays to monitor compliance with environmental regulations and safety protocols. This includes joint inspections, training programs for barangay officials, and open communication channels.
Clear Mechanism for Penalty of Non-compliance	Unclear accountability and weak enforcement mechanisms highlighted as significant challenges.	Define a clear and transparent system for penalties in case of non-compliance with regulations. Communicate this system to all stakeholders and enforce it consistently to ensure responsible quarry operation.
Enhanced Enforcement and Monitoring	Weak enforcement mechanisms, insufficient monitoring, and unclear accountability compromise the effectiveness of current regulations.	Allocate additional manpower and other resources for regular inspections, monitoring programs, and penalties for non-compliance to ensure strict adherence to regulations.
Voluntary Sustainability Standards	Varying adoption of sustainability practices among operators, leading to inconsistent environmental and social performance.	Encourage the adoption of voluntary sustainability standards, such as ISO 14001 certification, to promote environmentally responsible practices.
Performance-Based Incentives and Penalties	Need to drive adherence to sustainable practices through incentives and penalties.	Implement incentives for outstanding sustainability performance and penalize non-compliance. Reward operators with tax breaks for exceptional performance and enforce penalties for non-compliance to ensure responsible practices.

4.0 Conclusion

This study advances the field by providing a comprehensive analysis of the multifaceted interplay between quarrying activities and their impact on surrounding communities in General Santos City. It highlights the dual nature of quarrying, which, while offering significant economic advantages such as job creation and infrastructure development, also presents environmental challenges like air, water and noise pollution. The current regulatory framework, characterized by a collaborative approach and clear legal parameters, has notable strengths. However, its effectiveness is hampered by weaknesses such as weak enforcement and outdated fee systems. This research underscores the necessity for sustainable practices, including the reclamation of abandoned quarries and

responsible land use, coupled with stricter enforcement measures and enhanced communication with residents. By striking a balance between economic development, environmental protection, and community well-being, General Santos City can pave the way for a more sustainable future for its quarrying industry. To further advance the state of knowledge in this field, future research should focus on establishing baseline data and conducting ongoing monitoring of surface and groundwater quality for potential contaminants, as well as air quality for dust particles and other pollutants. Additionally, a quantitative analysis of flora and fauna populations before, during, and after quarrying operations is essential, alongside health impact assessments to evaluate respiratory issues, allergies, skin irritations, and mental health effects on local populations. Investigating the social dynamics between quarry operators and local communities and enhancing community engagement in decision-making processes related to quarrying activities are also critical areas for future study. By addressing these areas, future research can build on the findings of this study, providing deeper insights and more robust solutions for mitigating the adverse impacts of quarrying while maximizing its economic benefits.

5.0 Contributions of Authors

Author 1 played a critical role in the development of the research concept, the design of the methodology, data collection and analysis, the drafting of the initial manuscript, and the overall management of the project's progression. Author 2 provided overarching supervision and guidance throughout the entire research process, from initial conceptualization to final completion. His contributions included substantial insights and expertise that significantly enhanced the study's conceptual framework and methodological approach. Additionally, he played a pivotal role in the manuscript's review, ensuring its scholarly rigor and coherence.

6.0 Funding

This work received no specific grant from any funding agency.

7.0 Conflict of Interests

The authors declare no conflicts of interest about the publication of this paper.

8.0 Acknowledgement

The researcher begins by expressing her gratitude to Almighty Allah, thanking him for his blessings and guidance in completing the study. She then acknowledges her adviser, Dr. Leonard V. Flores, for his expertise and contributions throughout the research process. Recognition is given to the reviewers, Dr. Alfie Maria Custodio and Mr. Allan Marcilla, MiSDS, for their help in refining the research. Mr. Manuel Torres Jr. is also thanked for his support and providing essential informations. Gratitude is expressed to colleagues and collaborators who have been supportive. The researcher then thanks her family for their unwavering love and encouragement, especially her husband Marc Jay and daughter Aezre Euzaeiouh Jeigh, who are described as her inspiration and driving force.

9.0 References

- Bamboo and sustainable construction. (2023). In F. L. Palombini & F. M. Nogueira (Eds.), *Environmental footprints and eco-design of products and processes*. Springer Nature Singapore. <https://doi.org/10.1007/978-981-99-0232-3>
- Cohen, H. (2015). *The impact of quarrying*. New Delhi: Prentice Hall.
- Department of Environment and Natural Resources. (2000). DENR Administrative Order No. 2000-99. <https://elibrary.judiciary.gov.ph/thebookshelf/showdocs/10/39419>
- Devi, M., & Rongmei, L. (2017). Impacts of sand and gravel quarrying on the stream channel and surrounding environment. *Asia Pacific Journal of Energy and Environment*, 4(1), 7-12. <https://doi.org/10.18034/apjee.v4i1.236>
- Emamverdian, A., Aziz, I., Alias, Y., & Sarker, B. C. (2020). Bamboo for slope stabilization and soil bioengineering in the tropics. *Forests*, 11(1), 78. <https://doi.org/10.3390/f11010078>
- Endalew, A., Tasew, E., & Tolahun, S. (2019). Environment and social impacts of stone quarrying: South Western Ethiopia, in case of Bahir Dar Zuria Wereda Zenzelma Kebele. *International Journal of Research in Environmental Science*, 5(2), 29-38. <http://dx.doi.org/10.20431/2454-9444.0502005>
- Enguito, M. R. C., Matunog, V. E., Bala, J. J. O., & Villantes, Y. L. (2013). Water quality assessment of Carangan Estero in Ozamiz City, Philippines. *Journal of Multidisciplinary Studies*, 1(1). <https://doi.org/10.7828/jmds.v1i1.397>
- Fugiel, A., Burchart-Korol, D., Czaplicka-Kolarz, K., & Smoliński, A. (2017). Environmental impact and damage categories caused by air pollution emissions from mining and quarrying sectors of European countries. *Journal of Cleaner Production*, 143, 159-168. <https://doi.org/10.1016/j.jclepro.2016.12.136>
- General Santos City. (1996). Revenue Code. Retrieved from https://chogensantos.files.wordpress.com/2015/09/revenue_-code_1996.pdf
- Hosseini, S. J. F., & McElwee, G. (2011). Improving the entrepreneurial potential of rural women entrepreneurs in Northern Iran. *International Journal of Entrepreneurship and Small Business*, 12(1), 15. <https://doi.org/10.1504/ijesb.2011.037337>
- Kniesner, T. J., & Leeth, J. D. (2003). Data mining mining data: MSHA enforcement efforts, underground coal mine safety, and new health policy implications. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.1809888>
- Ochieng, G. O., & Charlse, O. A. (2020). Sand extraction and land degradation in Nyakach Sub County, Kisumu County, Kenya. *The International Journal of Humanities & Social Studies*, 8(5). <https://doi.org/10.24940/thejhss/2020/v8/i5/hs2005-105>
- Ozcan, O., Musaoglu, N., & Seker, D. (2012). Environmental impact analysis of quarrying activities established on and near a river bed by using remotely sensed data. *Fresenius Environmental Bulletin*, 21, 3147-3153. https://www.researchgate.net/publication/233728844_Environmental_Impact_Analy
- Presidential Decree No. 1586. (1978). Establishing an Environmental Impact Statement System, including other environmental management related measures and for other purposes. Retrieved from https://lawphil.net/statutes/presdecs/pd1978/pd_1586_1978.html
- Republic Act No. 7076. (1991). People's Small-Scale Mining Act of 1991. https://www.lawphil.net/statutes/repacts/ra1991/ra_7076_1991.html
- Republic of the Philippines. (1995, March 3). Republic Act No. 7942: Philippine Mining Act of 1995. Retrieved from https://lawphil.net/statutes/repacts/ra1995/ra_7942_1995.html
- Salem, H. S. (2021). Evaluation of the stone and marble industry in Palestine: Environmental, geological, health, socioeconomic, cultural, and legal perspectives, in view of sustainable development. *Environmental Science and Pollution Research*. <https://doi.org/10.1007/s11356-021-12526-4>
- Sayara, T. (2016). Environmental impact assessment of quarries and stone cutting industries in Palestine: Case study of Jammain. *Journal of Environment Protection and Sustainable Development*, 2(4), 328-341. <http://www.aiscience.org/journal/paperInfo/jepd?paperId=3284>
- Sumani, J. B. B. (2019). Possible environmental and socio-economic ramifications of sand and gravel winning in Danko, Upper West Region of Ghana. *Ghana Journal of Geography*, 11(2), 27-51.
- Tardio, G., Mickovski, S. B., Stokes, A., & Devkota, S. (2017). Bamboo structures as a resilient erosion control measure. *Proceedings of the Institution of Civil Engineers - Forensic Engineering*, 170(2), 72-83. <https://doi.org/10.1680/jfoen.16.00033>

Local Government Unit Initiative on Implementing Marine Protected Areas in Barangay Kamanga and Colon, Maasim Sarangani Province

Ryan S. Jama*, Leonard V. Flores

Mindanao State University - General Santos City, Philippines

*Corresponding Author Email: jamaryan4@gmail.com

Dated received: June 2, 2024

Date revised: June 14, 2024

Date accepted: June 20, 2024

Originality: 94%

Grammarly Score: 99%

Similarity: 6%

Recommended citation:

Jama, R., & Flores, L. (2024). Local government unit initiative on implementing marine protected areas in Barangay Kamanga and Colon, Maasim Sarangani Province. *Journal of Interdisciplinary Perspectives*, 2(8), 47-61. <https://doi.org/10.69569/jip.2024.0250>

Abstract. This study assessed local government unit initiatives in implementing Marine Protected Areas (MPAs) in Maasim, Sarangani Province. The evaluation focused on the effectiveness of MPA program implementers using the Management Effectiveness Assessment Tool (MEAT), collected secondary data on coral reefs and reef fish conditions, conducted a community perception survey, and assessed socioeconomic impacts. Despite the establishment of MPAs and the adoption of related policies, knowledge gaps persist regarding their actual effectiveness in achieving conservation objectives. This study evaluated the management performance of two MPAs: Kamanga Marine Ecotourism Park and Sanctuary and Colon Marine Sanctuary. Employing a descriptive design, MEAT was used to assess their effectiveness. Results indicate that both MPAs were well-established, with robust stakeholder involvement and legal enforcement. However, Kamanga Marine Ecotourism Park and Sanctuary outperformed Colon Marine Sanctuary in areas such as patrolling, infrastructure, institutional support, and impact assessment. Kamanga Marine Ecotourism Park and Sanctuary received an "excellent" rating, while Colon Marine Sanctuary was rated "very good." Both MPAs have stable funding, but Colon Marine Sanctuary requires monitoring, communication, public engagement, and financial management improvements. The study also identified challenges from natural factors and human activities, including pollution and fishing. However, there is positive community awareness about MPAs, and fishers report benefits such as increased fish stocks.

Keywords: Marine protected areas; Environmental protection; Coral reef assessments; Sustainable practices; Local government initiatives.

1.0 Introduction

The Earth's oceans are vital ecosystems that provide numerous ecological services, including climate regulation, oxygen production, and the provision of resources for millions of people worldwide. However, increasing human activities, such as overfishing, pollution, and habitat destruction, have placed immense pressure on marine biodiversity and ecosystem health. In response to these challenges, Marine Protected Areas (MPAs) have emerged as critical conservation tools to safeguard marine ecosystems, mitigate human-induced impacts, and ensure the sustainable use of aquatic resources (IUCN 2020).

In the Philippines, MPAs are designated sections of the ocean where human activities are restricted. This is done to conserve marine life, habitats, and the natural processes that keep the ocean healthy. MPAs can encompass diverse ecosystems like coral reefs, seagrass meadows, mangroves, and even deep-sea environments. Human activities are regulated in these areas to protect and conserve marine biodiversity, habitats, and ecological processes. By limiting or restricting fishing, mining, and coastal development, MPAs offer a sanctuary for marine

species, allowing them to thrive and maintain healthy population levels. (Claudet, et al., 2011). A growing body of scientific evidence supports the establishment and effectiveness of MPAs. Numerous studies have demonstrated the positive impacts of MPAs on marine biodiversity, including increased species abundance, diversity, and Biomass (Edgar et al., 2014). Establishing and managing Marine Protected Areas (MPAs) is a complex process that requires effective stakeholder engagement and collaboration between scientists, policymakers, local communities, and indigenous peoples. The effectiveness of MPAs relies on the engagement of stakeholders, who possess valuable expertise on the social, economic, and environmental aspects that impact the administration of these regions (Twitchell et al., 2018).

Furthermore, MPAs can generate socioeconomic benefits by supporting sustainable fisheries, enhancing tourism, and securing livelihoods for coastal communities. (Gill et al. 2017). However, numerous designated marine protected areas (MPAs) lacked more effective management strategies or inadequately implemented those that do exist, culminating in substandard administration and, at worst, the formation of "paper parks" (Maestro et al., 2019). Recognizing the growing urgency of environmental concerns, the Philippines has established a robust legal framework to support the creation of Marine Protected Areas (MPAs) at both national and local levels. This framework includes various legal instruments, facilitating the designation and management of MPAs for conserving marine ecosystems and biodiversity at national and local levels, aiming to conserve marine ecosystems and biodiversity.

The enactment of the National Integrated Protected Area System Act (RA 7586), amended as the Expanded National Integrated Protected Area System or RA 11038, aimed to integrate the concept of MPAs into a network. RA 10654, also known as the Fishery Code of 1998 and the Local Government Code of 1991, promotes local government units' establishment of marine reserves or sanctuaries. Republic Act No. 11038, known as the ENIPAS Act of 2018, established comprehensive guidelines for establishing and managing protected areas, including marine sanctuaries. This legislation established laws and procedures aimed at conserving biological diversity, encouraging the sustainable utilization of resources, and safeguarding vital ecosystems, thus strengthening the country's dedication to environmental management. The Philippine Fisheries Code of 1998, Republic Act No. 8550, was promulgated to enhance the legal framework for Marine Protected Areas (MPAs). This legislation focuses on managing fisheries and aquatic resources, including provisions for establishing marine reserves and sanctuaries. The Fisheries Code plays a crucial role in maintaining the health and productivity of maritime ecosystems by controlling fishing operations and protecting important habitats. The abovementioned legal bases are significant because they contribute to environmental sustainability, biodiversity conservation, and the protection of fisheries resources. By establishing and enforcing MPAs, the Philippines seeks to achieve a harmonious equilibrium between preserving ecological integrity and fulfilling the socio-economic requirements of its population. The legislative frameworks enable local people and government agencies to work together to protect the seas, promoting a comprehensive and participatory approach to managing marine resources essential for the long-term well-being of Philippine waters.

The Municipality of Maasim is home to two designated MPAs: Kamanga Marine Ecotourism Park and Sanctuary, situated in Sitio Tampuan, Barangay Kamanga, and Colon Marine Sanctuary, located in Barangay Colon. These Maasim Marine Protected Areas were established on February 9, 2006, by enacting Ordinances Nos. 06-020 and 06-021. The Kamanga Marine Ecotourism Park and Sanctuary covers 43.85 hectares, and the Colon Marine Sanctuary covers 30.68 hectares. They are integral components of the extensive Sarangani Bay Protected Seascape. Recognizing the importance of measuring their effectiveness, the Local Government Unit (LGU) of Maasim emphasized the necessity for research to evaluate these MPAs in Maasim, Sarangani Province. Evaluating an MPA's management helps identify strengths and weaknesses, make informed decisions, and improve initiatives for the future. Moreover, the study provides baseline information for subsequent studies and the conservation and protection management of the Marine Protected Area of Maasim Sarangani Province.

2.0 Methodology

2.1 Research Design

This study covered the local government initiative to implement Marine Protected Areas in Maasim, Sarangani Province, using the Management Effectiveness Assessment Tool (MEAT), gathering secondary biophysical and ecological assessment reports, a socio-economic impact survey, and a community perception survey. Management

effectiveness was evaluated based on documents and physical outputs, including meeting minutes, accomplishment reports, the physical structure of observation posts, demarcation buoys, and other relevant aspects outlined in the Management Effectiveness Assessment Tool (MEAT). Biophysical and ecological impacts were measured through coral reef and reef fish assessments. The social and economic impact assessment was conducted through a questionnaire among registered Brgy fishers in Kamanga and Colon. Moreover, a survey questionnaire evaluated the community perception among heads of households, local organizations, wives of fishermen/farmers, students/youth (age 18 and above), local business owners, and school heads and teachers. These methods were simultaneously employed throughout the study period.

2.2 Research Locale

The study focused on the Marine Protected Areas in Maasim, Sarangani Province, specifically the Kamanga Marine Ecotourism Park and Sanctuary and the Colon Marine Sanctuary. Kamanga Marine Ecotourism Park and Sanctuary is located in Barangay Kamanga, Maasim Sarangani Province, with coordinates of 05°52'31.6" North and 125°05'31.5" East. This MPA is bordered on the east by Barangay Tinoto, on the North by South Cotabato-Sarangani Road, on the west by Sarangani Energy Corporation (SEC), and on the south by the Celebes Sea. While Colon Fish Sanctuary is located in Barangay Colon with coordinates of 5° 51 15.90" North and 125° 0 20.80" East, This MPA is bordered on the west by Barangay Población.

2.3 Research Participants

Three groups of respondents participated in this study. The first group involved program implementers, including the management body of the barangay council, BFARMCS, LGU of Maasim, NGAs, NGOs, Bantay Dagat, and industries. The second group comprises the community, heads of households, local organizations, wives of fishermen and farmers, students and youth (aged 15 and above), local business owners, and school heads and teachers. The third group consisted of registered fishermen residing in Barangay Kamanga and Colon, where Marine Protected Areas are located.

2.4 Research Instrument

The effectiveness of Marine Protected Areas (MPAs) management was assessed using the Management Effectiveness Assessment Tool (MEAT). MEAT, developed through the collaboration of several organizations, provides a streamlined and objective method to evaluate MPAs, focusing on key performance indicators and processes that contribute to effective management (MPA MEAT, 2011). This tool involves analyzing the outcomes of management actions to determine their success. In addition to MEAT, biophysical and ecological data were collected from municipal agriculturists and environmental centers.

This secondary data, which includes information on coral reefs and fish distribution, helps establish a baseline understanding of the marine ecosystem. By comparing current data with historical records, researchers can identify environmental trends and evaluate the impact of conservation efforts.

A Community Perception Survey was conducted to gauge local attitudes, knowledge, and practices concerning the MPA. This survey helps determine the community's awareness and understanding of the MPA, identifying areas needing further education and communication. A survey was administered to registered fishermen in Barangay Kamanga and Colon to assess the socio-economic impact of the MPA. This quantitative survey aimed to understand how the MPA has influenced their livelihoods, capturing their perceptions, concerns, and needs.

2.5 Data Gathering Procedure

This study utilized a range of methodologies. In February 2024, the researcher conducted preliminary surveys, interviews, and site validation throughout the second and third weeks. The secondary data collection for resource assessment for coral reefs and reef fish was scheduled for the second week of February 2024. Subsequently, in the third week of February 2024, a Management Effectiveness Assessment Tool (MEAT), a community perception survey, and a socioeconomic impact survey were conducted. Additionally, the researcher visited the local community for data gathering.

Before the respondents answered the questions, the researcher translated the community perception and socioeconomic questionnaires into the local dialect to overcome language barriers. Before collecting the required data

for the study, the researcher sought permission from the thesis adviser by drafting a letter. Furthermore, the researcher requested cooperation from the respondents, who were to fill out survey questionnaires to ascertain the impacts of the MPA on their community. The MEA tool was the foundation for assessing the MPA's management effectiveness.

2.6 Ethical Considerations

This research study adhered to ethical guidelines and received a certificate of exemption from ethics review from the Mindanao State University- General Santos Institutional Ethics Review Committee (MSU-General Santos IERC). The exemption was granted based on the requirements that were submitted, confirming that the study protocol and related documents had been reviewed and approved for implementation. The study, titled "Local Government Unit Initiative: Its Impact in the Implementation of Marine Protected Area in Barangay Kamanga and Colon, Maasim Sarangani Province," was assigned Approval No. 025-2024-MSUGSC-IERC with a Study Protocol Code of 2024-025-SR. The approval, effective from January 23, 2024, to January 23, 2025, was given under the provisions that the study involves a non-sensitive survey and the participants' names are anonymized.

3.0 Results and Discussion

3.1 Kamanga Marine Ecotourism Park and Sanctuary (KMEPS) Management Effectiveness

Table 1. Management Effectiveness Assessment Tool (MEAT) Evaluation Result for KMEPS

Level	Year requirement	Actual score	Possible score	All threshold questions satisfied?	MPA level satisfied?
Established At least one year At least 20 cumulative score All level I thresholds met	Yes	26	27	Yes	Yes
Strengthened At least 3 years At least 31 total cumulative score All levels 1 & 2 thresholds met	Yes	15	15	Yes	Yes
Sustained At least 5 years At least 47 total cumulative score All levels 1, 2 and 3 thresholds met	Yes	18	21	Yes	Yes
Institutionalized At least 7 years At least 63 total cumulative score All thresholds met	Yes	20	21	Yes	Yes

Level I (MPA is established)

The Management Effectiveness Assessment Tool (MEAT) evaluates Marine Protected Area (MPA) effectiveness in stages. At Level I, Kamanga Marine Ecotourism Park and Sanctuary (KMEPS) focused on establishment tasks, conducting three consultation meetings to engage local stakeholders. In 2008, an underwater assessment revealed high species richness, identifying 32 coral genera and 92 fish species. By 2020, monitoring indicated moderate reef fish conditions but high fish biomass. The management plan, updated in 2023, guides the MPA's operations. The management body includes local councils, organizations, and government agencies, with the Kamanga division captain as chairperson. Information and enforcement efforts involve the "Bantay Dagat" enforcers and community monitors. Regular resource assessments are conducted, achieving 26 out of 27 points at Level I.

Level II (MPA Management is Effectively Strengthened)

At Level II, KMEPS enhanced core management responsibilities, including enforcement, equipment maintenance, and biophysical monitoring. An Integrated Coastal Management (ICM) strategy complements enforcement. Training for "Bantay Dagat" enforcers and regular patrolling are key activities. The MPA maintains comprehensive violation records and allocates fines to management funds. Infrastructure support and public education through

Information, Education, and Communication (IEC) materials were emphasized. KMEPS achieved a perfect score of 15 out of 15 points at Level II.

Level III (MPA Management is Sustained for at least 5 Years)

Level III highlights continued operations over five years, including ordinance revisions and monitoring. The Integrated Coastal Management Plan (2023–2027) oversees management. Despite limited meetings due to the pandemic, enforcement and IEC efforts continued. Regular biophysical surveys by DENR XII and socioeconomic monitoring by the LGU Fisheries Technician are conducted. Financially, the MPA generated Php 220,893.00 in net income by June 2023, allocated among local stakeholders. Violators face penalties, and feedback mechanisms enhance management. KMEPS scored 18 out of 21 points at Level III.

Level IV (MPA Management is Institutionalized for at least 7 Years)

Level IV focuses on long-term institutional development and support from provincial LGUs and other organizations. Enhanced enforcement, livelihood training, and management capacity initiatives are key. The ICM Plan integrated into the Comprehensive Land Use Plan (CLUP) ensures cohesive management. Effective collaboration with national and local agencies supports the MPA. Recognition includes being named one of the top 10 MPAs in the Philippines and winning conservation awards. Coral reef restoration and infrastructure development aid MPA sustainability. Revenue from fees and penalties covers operational expenses. KMEPS scored 20 out of 21 points, achieving an "excellent" rating of 79 out of 84. Colon Marine Sanctuary (CMS) Management Effectiveness

3.2 Colon Marine Sanctuary (CMS) Management Effectiveness

Table 2. Management Effectiveness Assessment Tool (MEAT) Evaluation Result for CMS

Level	Year requirement	Actual score	Possible score	Are all threshold questions satisfied?	MPA level satisfied?
Established At least 1 year At least 20 cumulative score All level I thresholds met	Yes	23	27	Yes	Yes
Strengthened At least 3 years At least 31 total cumulative score All level 1 & 2 thresholds met	Yes	11	15	Yes	Yes
Sustained At least 5 years At least 47 total cumulative score All level 1, 2 and 3 thresholds met	Yes	12	21	YES	NO
Institutionalized At least 7 years At least 63 total cumulative score All thresholds met	Yes	12	21	NO	NO

Level I (MPA is Established)

The Colon Marine Sanctuary has successfully established itself as a Marine Protected Area (MPA), gaining acceptance, approval, and securing a budget for at least one year. This demonstrates a clear understanding of the value of MPAs and a strong commitment to the sanctuary's success. The management plan, developed through stakeholder consultations, is part of the Integrated Coastal Management Plan 2023-2027, fostering a sense of ownership and collaboration. Comprehensive baseline assessments lay a crucial foundation for monitoring conservation progress. Information, Education, and Communication (IEC) activities are well-coordinated, promoting public understanding and support. Key personnel, including MPA enforcers and biophysical monitors, are designated. The management body involves the municipal government, people's organization, barangay

council, and MFARMC, with 3 Bantay Dagat enforcing regulations and conducting scientific evaluations. Despite the establishment of a management body, roles and responsibilities need clearer definitions to avoid inefficiencies. The MPA achieved a score of 23 out of 27 points at Level I, fulfilling all required standards and objectives.

Level II (MPA Management is Effectively Strengthened)

At Level II, the Colon Marine Sanctuary addressed essential tasks such as enforcement, equipment maintenance, and biophysical monitoring. A well-defined enforcement plan and trained staff ensure compliance. Regular operations, including patrolling and violation documentation, demonstrate adherence to management criteria. Despite not initiating legal proceedings or penalties, financial resources from the LGU and Integrated Protected Area Fund (IPAF) support MPA initiatives. While infrastructure maintenance has lagged, annual IEC programs and collaborative biophysical monitoring by DENR XI and ECPC Sarangani are effectively executed. The sanctuary achieved Level II with a score of 11 out of 15 points, meeting all Level I and II criteria.

Level III (MPA Management is Sustained for at Least 5 Years)

Level III focuses on sustaining MPA management effectiveness over five years. The Colon Marine Sanctuary operates under the Integrated Coastal Management Plan 2023–2027, though its governing ordinance has not been updated. Financial stability supports ongoing conservation efforts, with an operational enforcement system. However, the IEC program needs enhancement, relying solely on verbal presentations since 2022. Regular participatory biophysical surveys and socioeconomic monitoring by OMAG are conducted, though comprehensive data is lacking. Despite an effective enforcement system, no legal actions were reported, indicating compliance issues. The absence of a feedback mechanism hampers management evaluation. Scoring 13 out of 21 points, the sanctuary has yet to meet Level III's minimum threshold but shows promise with improvements in identified areas.

Level IV (MPA Management is Effectively Institutionalized for at least 7 Years)

Level IV emphasizes institutionalizing the MPA, with provincial LGU support, and incentives, and assessing socioeconomic and ecological impacts. The sanctuary's management plan is integrated into broader development plans, demonstrating a commitment to marine protection. Effective stakeholder coordination includes the Philippine Coast Guard, PNP Maritime, DENR XII, BFAR, and private companies. Consistent public awareness campaigns over seven years highlight educational efforts. Essential support facilities ensure necessary infrastructure. Improvements include developing an incentive-linked performance monitoring system, enhancing public engagement strategies, equipping the management body with enforcement authority, exploring expansion initiatives, and achieving financial self-sufficiency. Currently, the sanctuary relies on LGU and IPAF funds. Diversifying revenue streams could enhance financial independence. The Colon Marine Sanctuary scored 60 out of 84, classified as "very good" according to MEAT criteria

3.3 Biophysical and Ecological Data (Coral reef and Reef Fishes)

The study used secondary data for coral reef and reef fish monitoring assessments in Kamanga Marine Ecotourism Park and Colon Marine Sanctuary. Four years of data (2020–2023) were collected from the DENR XII through the Coastal Resources and Foreshore Management Section (CRFMS), including coral reef cover, fish biomass, fish richness, and fish density.

The assessment methodology employed BMB Technical Bulletin No. 2017-05, which provides guidelines for evaluating coastal and marine ecosystems, and BMB Technical Bulletin No. 2019-04, which serves as a technical guide for assessing and monitoring biodiversity in these ecosystems. Data collection included assessing the condition of coral reefs using the Underwater Photo Transect (UPT) method and reef fish condition using the Underwater Visual Census (UVC) method. The coral data collected were analyzed using CPCe (Coral Point Count with Excel extension); the coral reef fish data were analyzed to provide fish density, fish richness, and biomass values (BMB Technical Bulletin No. 2019-04). In 2020, monitoring of the coral reef and reef fish was conducted on September 8; in 2021, it was conducted on March 11; in 2022, it was conducted on July 26; and in 2023, it was conducted on July 6.

3.4 Maasim Marine Protected Areas Coral Cover (2020-2023)

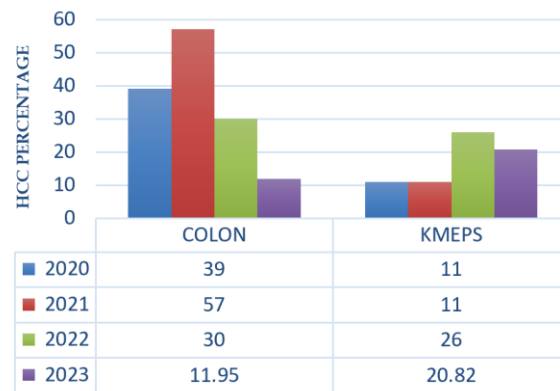


Figure 2. Live Hard Coral Cover of the MPA based on 2020 to 2023

The live hard coral cover in Kamanga Marine Ecotourism Park and Sanctuary has been consistently low from 2020 to 2023, ranging from 11% to 26%; this falls under the "poor" category based on the coral reef cover classification (BMB TB No. 2019-04 by Licuanan et al., 2017). The poor condition in 2020 was attributed to a combination of factors, including Shallow transects laid in an area mostly composed of rubble with patches of hard coral (Waheed et al. 2015), the presence of coral predators like Crown-of-Thorn Starfish (*Acanthaster planci*), which feed on branching corals (Kayal et al., 2012) like *Acropora* species which are dominant in the area, in the published study of Kalya it was said Outbreaks of the coral-killing seastar *Acanthaster planci* are intense disturbances that can decimate coral reefs and vulnerability to the harsh underwater environment including strong waves that cause siltation and hinder coral reproduction (Otaño-Cruz et al. 2017).

In 2021, the hard coral cover remained at 11% (poor condition). An outbreak of crown-of-thorn starfish was again observed. There was a significant improvement, with hard coral cover reaching 26% in 2022, classified as fair condition. However, crown-of-thorn starfish were still present. In 2023, the hard coral cover again dropped to 20.82% (poor condition) due to the presence of solid waste, fishing activities within the MPA, Crown-of-Thorn Starfish, and coral bleaching (El-Naggar et al., 2020).

Meanwhile, the coral reef ecosystem in Colon Marine Sanctuary is a type of fringing reef. Colon Marine Sanctuary showed a positive trend from 2020 to 2021 (see Figure 2), with hard coral cover increasing from 39% (good condition) to 57% (excellent condition). However, the condition deteriorated in the succeeding years. In 2022, the hard coral cover dropped to 30% (fair condition) due to outbreaks of Crown-of-Thorn Starfish, the presence of solid waste, and sedimentation. The condition further declined in 2023 to 11.95% (poor condition) due to the presence of Crown-of-Thorn Starfish, sedimentation, solid waste, and coral bleaching. The decline in live hard coral cover in Kamanga Marine Ecotourism Park and Sanctuary from 2020 to 2023 can be attributed to a combination of natural and anthropogenic factors (setter et al., 2022).

3.5 Reef Fish Condition (Species Richness, Fish Density, and Fish Biomass)

Reef Fishes Condition in KMEPS

Table 3. KMEPS Fish Species Diversity, Density, and Biomass from 2020 to 2023

Year	Fish Species Diversity (species/1000m ²)	Fish Density (individual/1000m ²)	Fish Biomass (mT/km ²)
2020	Poor (29)	Moderate (1031)	Very High (50)
2021	Poor (29)	Moderate (1093)	Very High (67)
2022	Very Poor (25)	Moderate (719)	Very High (53)
2023	Poor (44)	Moderate (1070)	Very High (45)

Fish diversity in Kamanga has also been consistently low (25 to 44 species per 1000 square meters), falling under the "poor" category. Fish density, on the other hand, has been moderate (ranging from 719 to 1093 individuals per 1000 square meters) throughout the four years. Interestingly, the fish biomass has been very high (45 to 67 metric

tons per square kilometer) despite the low coral cover and fish diversity, and this could be due to the presence of a few large fish species that contribute significantly to the overall biomass (Ramírez-Ortiz et.al, 2020).

Reef Fishes Condition in CMS

Table 4. CMS Fish Species Diversity, Density, and Biomass from 2020 to 2023

Year	Fish Species Diversity (species/1000m2)	Fish Density (individual/1000m2)	Fish Biomass (mT/km2)
2020	Poor (27)	Poor (567)	High (30)
2021	Very Poor (23)	Moderate (779)	High (22)
2022	Very Poor (18)	Poor (336)	Medium (19)
2023	Poor (37)	Poor (606)	Medium (15)

Fish diversity in Colon has also been consistently low (18 to 37 species per 1000 square meters), falling under the "poor" category. Fish density varies, ranging from poor to moderate (336 to 779 individuals per 1000 square meters). Fish biomass is medium, ranging from 15 to 30 metric tons per square kilometer throughout the four years; this is lower than the fish biomass in Kamanga because of fewer large fish in the Colon Marine Sanctuary.

3.6 Community Perception Survey about Maasim Marine Protected Areas

Awareness

Table 5 shows the level of the majority (86.5%) of respondents who are aware of the Kamanga and Colon Marine Protected Area (Q1). Among those aware, 64.6% correctly identified the MPA as a protected habitat for marine organisms, while 35.4% did not recognize it as such.

Table 5. Community perception on the Maasim Marine Protected Area in terms of awareness

Indicators	Frequency	Percentage (%)
Q1. Do you know what Kamanga and Colon Marine Protected Area is?		
Yes	83	86.5%
No	6	6.3%
Not Aware	7	7.3%
If yes, what is it?		
Protected Habitat for marine organisms	62	64.6%
Not Protected Habitat for marine organisms	34	35.4%
Fishing Ground for Fishers	5	5.2%
Not Fishing Ground for Fishers	91	94.8%
Diving Area for Divers	37	38.5%
Not a Diving Area for Divers	59	61.5%
Q2. What are the benefits of Colon and Kamanga MPA that you can derive from MPA?		
Provide food, livelihood, and medical benefits to the people.	72	75%
Not Provide food, livelihood, and medical benefits to the people.	24	25%
Protect us from the extreme/ destructive effects of storm surges, waves, and currents	14	14.6%
Not Protect us from the extreme/ destructive effects of storm surges, waves, and currents	82	85.4%
Provide recreational, physical, and mental benefits, tourism activities, and spiritual activities	9	9.4%
Not Provide recreational, physical, and mental benefits, tourism activities, and spiritual activities	87	90.6%
No Benefits	8	8.3%
with Benefits	88	91.7%
Q3. Does the condition of KAMANGA and Colon MPA affect the food source for various species like mollusks, crustaceans, and fishes?		
Yes	44	45.8%
No	45	46.9%
Not Aware	7	7.3%
Q4. Does the condition of KAMANGA and Colon MPA affect fish economic activity of the community?		
Yes	36	37.5%
No	54	56.3%
Not Aware	6	6.3%

The high awareness level is a positive sign, indicating a basic understanding of the existence of this environmental conservation area. However, a considerable percentage still needs to recognize its protected status. This suggests a need for further education or outreach programs to enhance understanding and appreciation for protected marine habitats. For Q2, a substantial majority (75%) recognize the MPA's role in providing food, livelihood, and medical benefits, there is a significant drop in recognition of other specific benefits, such as protection from natural disasters (14.6%) and recreational or tourism benefits (9.4%). This discrepancy suggests that the community may primarily see the MPA through a utilitarian lens focused on immediate economic benefits rather than broader ecological or societal benefits. Only 14.6% believe the MPA protects them from extreme weather events. This low recognition could stem from a lack of awareness or understanding of the ecological services MPAs provide. MPAs often contribute to coastal protection by preserving natural barriers like coral reefs and mangroves, which mitigate the impact of storm surges and erosion. The low percentage might indicate a need for more education on these indirect benefits. A mere 9.4% recognize the recreational and tourism benefits. This suggests that either these benefits are underdeveloped or not effectively communicated. MPAs can attract tourism, leading to economic growth through activities like diving and eco-tourism. The low recognition might be due to the community not yet experiencing these benefits or not seeing the potential for tourism development. While 91.7% acknowledge some form of benefit from the MPA, the specific types of benefits recognized vary widely. This general acknowledgment contrasts sharply with the low percentages for specific benefits, indicating a potential gap in detailed understanding or communication about the diverse advantages of MPAs. The community might not be fully informed about the various benefits of the MPA. Education campaigns could focus more on the ecological services provided by the MPA, such as storm protection and mental health benefits from recreational activities. Residents might prioritize immediate, tangible benefits like food and livelihood over long-term ecological benefits, which are less visible and may be perceived as less urgent. Emphasizing the long-term sustainability and indirect benefits of the MPA could help shift this perception. If residents doubt the MPA's effectiveness in providing certain benefits, their responses would reflect that skepticism. Building trust through consistent enforcement of MPA regulations and demonstrating tangible results could improve perception. The data indicates that while there is a general recognition of the MPA's benefits, there are significant gaps in understanding and awareness of the full spectrum of advantages it provides. Addressing these contradictions through enhanced education, better communication strategies, and developing underutilized benefits like tourism could help the community fully appreciate and support the diverse benefits of the Colon and Kamanga MPA.

About 45.8% of respondents believe that the MPA's condition affects the food source for various species like mollusks, crustaceans, and fishes (Q3), demonstrating an understanding of the ecological interdependencies within marine ecosystems. However, the lower percentage (37.5%) that thinks the MPA's condition affects the fish economic activity of the community (Q4) suggests a potential disconnect between ecological health and economic sustainability perceptions. This presents an opportunity for educational initiatives bridging the environmental conservation gap.

Knowledge

Table 6. Community perception on the Maasim Marine Protected Area in terms of knowledge

Indicator	Mean	SD	Interpretation
Q5. Dynamite Fishing activity that might likely affect the Colon and Kamanga MPA?	4.90	0.607	Strongly Agree
Q6. Pollution activity that might likely affect the Colon and Kamanga MPA?	4.94	0.431	Strongly Agree
Q7. Global Warming activity that might likely affect the Colon and Kamanga MPA?	4.93	0.363	Strongly Agree
Q8. Poaching activity that might likely affect the Colon and Kamanga MPA?	4.88	0.548	Strongly Agree
Q9. Tourism Damage activity that might likely affect the Colon and Kamanga MPA?	4.77	0.747	Strongly Agree

Legend: 4.50-5.00= Strongly Agree (SA), 3.5-4.49= Agree (A), 2.50-3.49= Moderately Agree (MA), 1.50-2.49= Disagree (D), 1.00-1.49 = Strongly Disagree (SD)

Table 6 presents the community's perceptions of various activities that might affect the Colon and Kamanga Marine Protected Area (MPA). Each indicator is rated on a scale from 1 to 5, where 5 corresponds to "Strongly Agree." The community overwhelmingly agrees that dynamite fishing poses a significant threat to the MPA, as indicated by the high mean score of 4.90. The standard deviation of 0.607 suggests a relatively small variance in responses, showing strong consensus on this issue (Q5). Dynamite fishing is known to cause extensive damage to marine ecosystems, which likely drives this strong agreement. Pollution is seen as a critical threat to the MPA, with a mean score of 4.94, the highest among the indicators. The very low standard deviation of 0.431 indicates an exceptionally strong consensus (Q6). This reflects a clear recognition of the harmful effects of pollution on marine

life and water quality. The impact of global warming on the MPA is also strongly acknowledged, with a mean score of 4.93. The low standard deviation of 0.363 signifies a high level of agreement (Q7). Global warming affects ocean temperatures, coral bleaching, and sea-level rise, all of which can severely impact marine protected areas. Poaching is recognized as a significant threat with a mean score of 4.88 and a standard deviation of 0.548, indicating substantial agreement among respondents (Q8). Poaching undermines conservation efforts by depleting protected species and disrupting the ecological balance within the MPA. While still rated strongly, tourism damage has a slightly lower mean score of 4.77 and the highest standard deviation of 0.747 among the indicators (Q9). This suggests some variation in opinions, possibly due to differing views on how tourism is managed and its perceived benefits versus harms. Unregulated tourism can lead to habitat degradation and pollution, but well-managed eco-tourism can also bring economic benefits and raise awareness about conservation. The community strongly agrees that all the listed activities – dynamite fishing, pollution, global warming, poaching, and tourism – pose significant threats to the Colon and Kamanga MPA. The mean scores for all indicators are very high, close to the maximum rating of 5, reflecting a strong consensus on these issues.

Attitude

Table 7. Community perception on the Maasim Marine Protected Area in terms of attitude

Indicator	Mean	SD	Interpretation
Q10. I feel the need to protect the Colon and Kamanga MPA because it affects my source of livelihood.	4.69	0.850	Strongly Agree
Q11. I am always willing to help protect the various MPA by promoting sustainable use of biodiversity resources.	4.66	0.792	Strongly Agree
Q12. I want to show my family, relatives, and friends how to conserve and protect Maasim MPA.	4.68	0.703	Strongly Agree
Q13. I will support and participate in local and national government efforts/programs to protect Maasim MPA.	4.72	0.817	Strongly Agree
Q14. I depend on people who are more knowledgeable in protecting our CFS because they know better.	4.41	0.924	Strongly Agree
Q15. I do not want to contribute to Colon and Kamanga MPA conservation activities because it is not my primary concern.	1.82	0.894	Disagree

Table 7. presents the community's attitudes toward protecting the Colon and Kamanga Marine Protected Areas (MPAs). The community strongly agrees on the necessity to protect the MPA because it impacts their livelihoods, with a mean score of 4.69. The standard deviation of 0.850 suggests a moderate level of consensus. This high level of agreement underscores the direct economic dependency of the community on the MPA, highlighting its importance for local sustenance and employment (Q10). The willingness to help protect MPAs by promoting sustainable biodiversity use is also highly rated at 4.66, with a standard deviation of 0.792. This indicates a strong and relatively consistent commitment to sustainability among respondents, reflecting an awareness of the need for long-term resource management (Q11). Respondents express a strong desire to educate their family and friends on conserving and protecting Maasim MPA, as evidenced by the mean score of 4.68 and a lower standard deviation of 0.703. This suggests a high level of personal responsibility and community engagement in conservation efforts (Q12). Support for participating in government-led conservation programs is the highest rated at 4.72, with a standard deviation of 0.817. This strong agreement indicates robust community backing for official conservation initiatives, essential for effective policy implementation and enforcement (Q13). The community acknowledges the importance of depending on more knowledgeable individuals for conservation guidance, with a mean score of 4.41. The higher standard deviation of 0.924 suggests more variability in responses, possibly reflecting differing levels of trust or access to expert knowledge (Q14). There is a strong disagreement with the statement that conservation activities are not a primary concern, as shown by the low mean score of 1.82. The standard deviation of 0.894 indicates some variability, but overall, it reflects a significant commitment to contributing to MPA conservation activities (Q15).

Moreover, the majority of respondents have been involved in activities led by the local government or the DENR in the past six months (Q16), either regularly (16.7%) or occasionally (59.4%) (see Table 8). This indicates a relatively high level of community engagement in environmental initiatives. The reasons for attending/participating in environmental activities vary, with motivations such as obligation, learning updates, seeking clarification, and other unspecified reasons. This suggests a diverse range of factors influencing participation levels.

Table 8. Community perception on the Maasim Marine Protected Area in terms of attitude

Indicators	Frequency	Percentage (%)
Q16. In the past six (6) months, have you been involved in activities led by the local government or the DENR in your area?		
Regularly	16	16.7%
Occasionally	57	59.4%
Never	23	24.0%
If regularly or occasionally involved, why have you attended/participated?		
It is my obligation	31	32.3%
It is not my obligation	65	67.7%
To learn updates and new information	44	45.8%
Not to learn updates	52	54.2%
To clarify or ask questions	2	2.1%
Not Clarify	94	97.9%
Others	2	2.1%

Practices

Subsequent Table 9 presents the findings of the study on community perceptions (PRACTICES) regarding Kamanga Marine Ecotourism Park and Sanctuary and Colon Marine Sanctuary. Most respondents (81.3%) stated that they never dispose of their garbage irresponsibly when they are away from a trash bin (Q17). This demonstrates a positive attitude towards responsible waste management. A significant percentage (85.4%) reported never directly harvesting fish and resources from the ocean near Colon and Kamanga MPA (Q18) for daily sustenance, indicating a low impact on marine resources directly attributed to this community. A substantial portion (61.5%) of respondents sometimes join tree-planting activities and clean-up drives in their community (Q19), showcasing moderate engagement in environmental initiatives. While a large majority (80.2%) never post photos of Kamanga & Colon on social media (Q20) to encourage visits, a notable percentage (17.7%) sometimes engages in this activity, potentially contributing to promoting awareness about the area. At the same time, waste management practices (96.9%) contribute to conservation and protection (Q21) through proper waste management at home. This includes practices such as proper segregation (70.8%), encouraging family awareness (1.0%), integrating waste management in teaching (1.0%), putting garbage in sacks (2.1%), indicating a positive environmental attitude within households. However, some respondents did have improper practices that have negative environmental impacts like burning and Burying (11.45%), segregation and Burying (7.3%), and sometimes burning plastic (1%). Improper waste management practices such as burning, burying, and mishandling plastic have significant negative environmental impacts, especially in marine protected areas where ecosystem fragility is a concern. Addressing these improper waste management practices requires a multifaceted approach involving education, community engagement, infrastructure development, and enforcement of regulations. A small but significant portion (16.7%) of respondents is actively advocating and participating in activities related to the conservation and protection of Colon and Kamanga MPA within their community (Q22). These activities include engaging in environmental causes, clean-up drives, and spreading information about environmental protection. A considerable number of respondents (52.1%) sometimes report illegal activities affecting the environment to local enforcers (Q23), while a notable percentage (29.2%) always do so. This indicates a proactive stance toward addressing environmental violations.

Table 9. Community perception on the Maasim Marine Protected Area in terms of practices

Indicators	Frequency	Percentage (%)
Q17. I throw my garbage such as plastic straw, candy wrappers, plastic bottles, etc. anywhere especially when I cannot see garbage bins nearby.		
Never	78	81.3%
Sometimes	18	18.8%
Always	0	0%
Q18. I directly harvest fish and other resources from the ocean near COLON and KAMANGA MPA for my family's daily sustenance.		
Never	82	85.4%
Sometimes	11	11.5%
Always	3	3.1%
Q19. I join tree-planting activities and clean-up drives in my community.		
Never	13	13.5%
Sometimes	59	61.5%

Always	24	25.0%
Q20. I take photos of Kamanga and Colon, and then I post them on social media to encourage friends and relatives to visit.		
Never	77	80.2%
Sometimes	17	17.7%
Always	2	2.1%
Q21. In our home, I'm contributing to the conservation and protection of Kamanga & Colon MPA by practicing proper waste management.		
Yes	93	96.9%
No	3	3.1%
If yes, please state how:		
Always Integrate in Teaching	1	1%
Burning	1	1%
Burning/Burying	1	1%
Burying	1	11.45%
I encourage my family to be aware of the effect	1	1.0%
Proper segregation	68	70.8%
Just put the garbage in the sack.	2	2.1%
segregation/Burying	7	7.3%
Sometimes Burning Plastic	1	1.0%
Not Contributing to the conservation and protection	3	3.1%
Q22. In our community, I am advocating and participating in activities involving the conservation and protection of Colon and Kamanga MPA.		
YES	16	16.7%
NO	80	83.3%
If yes, please state how:		
Engaging in environmental causes	1	1 (1.0%)
Coastal Clean Up	1	1 (1.0%)
Educating Family	1	1 (1.0%)
Implement Laws/ Spread Information	1	1 (1.0%)
Encourage the community to participate in environmental Activities	1	1 (1.0%)
Organizing activities such as Clean-up drives	2	2 (2.08%)
Participating In Environmental Activities	5	5 (5.20%)
Spread Information About Environmental Protection	1	1 (1.0%)
Apply in Teaching Lesson	1	1 (1.0%)
Tree Planting and Coastal Clean-Up	1	1 (1.0%)
Not advocating and participating in environmental activities	81 (84.4%)	81 (84.4%)
Q23. On illegal activities affecting the environment in our area, I immediately call the attention of our local enforcers.		
Never	18	18.8%
Sometimes	50	52.1%
Always	28	29.2%

3.7 Socioeconomic Impact of Maasim Marine Protected Area

A mean score of 4.208 indicates that the majority of respondents are well aware of the existence and locations of MPAs in their fishing areas. The relatively high standard deviation of 1.247 suggests some variability in awareness levels, which could point to differences in access to information or engagement with MPA-related activities among community members (Q1). Respondents express a strong familiarity with the rules and regulations governing fishing activities within MPAs, as evidenced by a mean score of 4.115. However, the substantial standard deviation of 1.337 highlights a significant variation in familiarity, indicating that some community members may need further education or clearer communication regarding these rules (Q2). The establishment of MPAs is generally perceived to positively impact the availability and size of fish stocks outside protected zones, with a mean score of 3.979. The moderate standard deviation of 1.056 suggests varying degrees of perceived impact among fishers, likely influenced by individual experiences and specific fishing locations (Q3). There is agreement that MPAs contribute to the enhancement of marine biodiversity, resulting in a more sustainable fishing environment. A mean score of 4.083 and a lower standard deviation of 0.842 indicate a relatively consistent positive perception of biodiversity enhancement due to MPAs (Q4). The restrictions imposed by MPAs are perceived to affect livelihoods, with a mean score of 3.760 positively. The standard deviation of 1.044 reflects a range of experiences, with some respondents possibly benefiting more directly from the MPA's protective measures and associated programs (Q5). The mean score of 3.698 indicates a neutral stance on whether MPAs have increased awareness among fishers about conservation and sustainable practices.

Table 10. Fishers Perception on Socioeconomic Impacts of Maasim Marine Protected Area

Indicator	Mean	SD	Interpretation
1. I am aware of the existence and location of Marine Protected Areas (MPAs) in my fishing areas.	4.208	1.247	Strongly Agree
2. I am familiar with the rules and regulations governing fishing activities within Marine Protected Areas.	4.115	1.337	Strongly Agree
3. The establishment of Marine Protected Areas (MPAs) has positively impacted the availability and size of fish stocks outside the protected zones.	3.979	1.056	Agree
4. MPAs have contributed to the enhancement of marine biodiversity, resulting in a more sustainable fishing environment.	4.083	0.842	Agree
5. The restrictions imposed by MPAs on fishing activities have affected my livelihood positively.	3.760	1.044	Agree
6. MPAs have increased awareness among fishers about the importance of conservation and sustainable fishing practices.	3.698	1.048	Neutral
7. The presence of MPAs has provided alternative opportunities or support (e.g., training and alternative livelihood programs) to offset the impact of fishing restrictions.	4.042	1.329	Strongly Agree
8. MPAs have improved the health and resilience of marine ecosystems, indirectly benefiting fishers in the long term.	4.010	0.788	Agree
9. MPAs increase my fish catch.	3.667	1.111	Agree
10. The local government has effectively communicated and engaged fishers in the decision-making processes related to the establishment and management of MPAs.	3.656	0.961	Agree
11. I Support the Establishment of MPA in my area.	3.698	1.557	Strongly Agree

The standard deviation of 1.048 points to diverse opinions, suggesting that while some fishers may have gained awareness, others have not seen significant changes in their understanding or practices (Q6). Respondents strongly agree that MPAs provide alternative opportunities or support to offset the impact of fishing restrictions, with a mean score of 4.042. The higher standard deviation of 1.329 indicates varied experiences, possibly due to differences in the availability or effectiveness of such programs across the community (Q7).

There is general agreement that MPAs have improved the health and resilience of marine ecosystems, indirectly benefiting anglers in the long term. A mean score of 4.010 and a relatively low standard deviation of 0.788 suggest a shared positive perception of ecosystem health improvements (Q8). The mean score of 3.667 reflects the agreement that MPAs have led to an increase in fish catch. The standard deviation of 1.111 indicates some variability in this perception, likely influenced by individual fishing experiences and local environmental conditions (Q9). Respondents agree that the local government has effectively communicated and engaged fishers in the decision-making processes related to MPAs, with a mean score of 3.656. The standard deviation of 0.961 suggests a moderate level of consistency in these perceptions, indicating room for improvement in government outreach and involvement efforts (Q10). The strong agreement with the establishment of MPAs, as reflected by a mean score of 3.698, shows general support within the community. However, the high standard deviation of 1.557 indicates significant variability in support levels, suggesting the presence of both strong proponents and opponents of MPAs (Q11). The data indicates a generally positive perception and awareness of the Maasim Marine Protected Area among the community, with strong support for its establishment and recognition of various benefits. However, there are areas with notable variability and neutral responses that suggest the need for targeted interventions.

3.8 Identified LGU Initiatives in Support of Maasim MPA's

The management body overseeing Marine Protected Areas (MPAs) in collaboration with various agencies and industries has implemented a range of initiatives aimed at effective MPA management. These activities, which could serve as models for other local government units (LGUs), include:

- Annual distribution of fishing paraphernalia to registered fisherfolk, supporting sustainable practices and contributing to economic development.
- Allocation of funds for Coastal Resources Management (CRM) programs, including enforcement efforts such as patrolling and personnel incentives.
- Regular updating of Fish and Boat Registers and issuance of licenses to promote regulatory compliance and identify beneficiaries for aid and grants.

- d. Distribution of fishing boat engines to support the livelihoods of registered fishermen and promote sustainable fisheries management.
- e. Formulation and adaptation of an Integrated CRM Plan (ICRMP) to ensure the sustainable development of coastal and marine resources.
- f. Annual Scubasurero events to clean marine ecotourism parks and sanctuaries, fostering environmental stewardship.
- g. The BasuraRaffle program incentivizes waste segregation among residents to promote sustainable waste management and community engagement.
- h. Partnerships with agencies for enforcement efforts, including joint patrols with law enforcement and maritime agencies.
- i. The Barangays Monthly Coastal Clean-up program encourages community participation in reducing marine debris and pollution.
- j. Low-cost projects like distributing materials for sanitary toilets to coastal residents, supporting waste management and pollution reduction.
- k. Juvenile fish release programs to revitalize fish populations in MPAs and assist fishermen in increasing fish stocks.
- l. Crown of Thorns (COT) collection program was initiated to mitigate the impact of COT outbreaks, involving collaboration with NGOs and NGAs.
- m. These initiatives demonstrate a comprehensive approach to MPA management, encompassing economic development, environmental stewardship, and community engagement.

4.0 Conclusion

The Kamanga Marine Ecotourism Park and Sanctuary (KMEPS) and Colon Marine Sanctuary (CMS) have both been evaluated by thorough assessments utilizing the Marine Effectiveness Assessment Tool (MEAT) at various levels of management effectiveness. KMEPS showed remarkable achievement and progress in several areas of management effectiveness. KMEPS achieved outstanding results in stakeholder involvement, legal enforcement, financial assistance, and ecological monitoring from the formation of the Marine Protected Area (MPA) to ensure its effective maintenance over an extended period of years. The specific assignment of responsibilities, frequent evaluations, and cooperation with diverse parties have led to its "excellence." Classification, achieving a score of 79 out of 84 in the MEAT assessment. However, although the Colon Marine Sanctuary (CMS) showed proficiency in strategic planning, stakeholder involvement, and enforcement planning, areas still require development. The need for clarity in managerial duties, the limited effectiveness of legal enforcement outcomes, and the reliance on a narrow range of funding sources are areas that demand attention. Although CMS received a "very good" rating with a score rating of 60 out of 84, there is still potential for improvement to ensure long-term sustainability and success.

The analysis of coral reef conditions and reef fish populations in Kamanga Ecotourism Park and Sanctuary (KMEPS) and Colon Marine Sanctuary (CMS) reveals a concerning trend of deterioration in reef health over the past few years. Both sites face challenges from natural factors like coral predators, harsh environmental conditions, and anthropogenic threats such as solid waste, fishing activities, and sedimentation.

The Community Perception Survey on Maasim Marine Protected Areas provides valuable insights into the community's awareness, attitudes, and practices regarding environmental conservation. The survey highlights a commendable level of awareness among respondents regarding the existence and benefits of Marine Protected Areas (MPAs), including their role in providing food, livelihood, and ecological services. However, there are notable areas for improvement, such as enhancing understanding of the broader ecological functions of MPAs, bridging the gap between ecological health and economic sustainability perceptions, and addressing improper waste management practices.

The study highlights a significant level of awareness and understanding among fishers regarding Marine Protected Areas (MPAs) and their regulations, indicating positive strides in conservation initiatives and sustainable fishing practices. While variability exists in perceptions, particularly regarding livelihood impacts and fish catch, the overall sentiment leans towards recognizing the benefits of MPAs for marine biodiversity and ecosystem health and promoting awareness about conservation.

5.0 Contributions of Authors

Author 1: Conceptualization, Methodology, Data Collection, Data Analysis, Writing - Original Draft Preparation, Project Administration. Author 1 was responsible for developing the research concept, designing the methodology, and collecting data from the marine protected areas in Barangay Kamanga and Colon. He also conducted data analysis, wrote the initial draft of the manuscript, and managed the overall progress of the project. **Co-Author:** Supervision, Conceptual Guidance, Writing - Review & Editing. He provided overarching supervision and guidance throughout the research process, from the initial conceptualization to the final stages of the project. He offered valuable insights and expertise, contributing significantly to the conceptual framework and methodological approach of the study. Additionally, He played a key role in reviewing and editing the manuscript, ensuring its scholarly rigor and coherence. Each author has read and approved the final version of the manuscript and agrees to be personally accountable for the author's own contributions and for ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

6.0 Funding

No funding Source.

7.0 Conflict of Interests

No conflict of interest.

8.0 Acknowledgment

The author would like to thank Dr. Leonard V. Flores, CESE, EnP, for his unwavering guidance, insightful feedback, and continuous support throughout this journey. His expertise has been invaluable. He also extend heartfelt thanks to his esteemed panel members, Dr. Alfie Maria Custodio and Allan Marcilla, MiSDS, for their constructive critiques and invaluable contributions, which have greatly enhanced the quality of his work. Special gratitude is extended to the Department of Environment and Natural Resources (DENR) XII - Coastal Resources and Foreshore Management Section (CRFMS) for their essential data and resources. Additionally, he is grateful for the cooperation and support of the Office of Municipal Agriculturist (OMAG) - Fisheries Management Section, the Municipal Environment and Natural Resources Office (MENRO), and the Department of Environment and Natural Resources - PAMO SBPS.

9.0 References

- Claudet, J. (2011). Marine protected areas (A multidisciplinary approach) || *ECOLOGY - Ecological effects of marine protected areas: conservation, restoration, and functioning*, 10.1017/CBO9781139049382(2), 37-71. <https://doi.org/10.1017/CBO9781139049382.005>
- Coastal Resources and Foreshore Management Section (CRFMS), Department of Environment and Natural Resources XII.
- Department of Environment and Natural Resources - Biodiversity Management Bureau (DENR-BMB). (n.d.). Retrieved from <https://bmb.gov.ph/>
- Edgar, G. J., Stuart-Smith, R. D., Willis, T. J., Kininmonth, S., Baker, S. C., Banks, S., & Thomson, R. (2014). Global conservation outcomes depend on marine protected areas with five key features. *Nature*, 506(7487), 216-220. <https://doi.org/10.1038/nature13022>
- El-Naggar, H. A. (2020). Human impacts on coral reef ecosystem. In *Natural resources management and biological sciences*. IntechOpen. <https://dx.doi.org/10.5772/intechopen.82948>
- Gill, D. A., Mascia, M. B., Ahmadi, G. N., Glew, L., Lester, S. E., Barnes, M., ... & Fox, H. E. (2017). Capacity shortfalls hinder the performance of marine protected areas globally. *Nature*, 543(7647), 665-669. <https://doi.org/10.1038/nature21708>
- International Union for Conservation of Nature (IUCN). (2020). Guidelines for applying the IUCN protected area management categories to marine protected areas.
- Kayal, M., Vercelloni, J., Lison de Loma, T., Bosserelle, P., Chancerelle, Y., Geoffroy, S., ... & Adjeroud, M. (2012). Predator crown-of-thorns starfish (*Acanthaster planci*) outbreak, mass mortality of corals, and cascading effects on reef fish and benthic communities. *PLOS ONE*. <https://doi.org/10.1371/journal.pone.0047363>
- Maestro, M., Pérez-Cayeyro, M. L., Chica-Ruiz, J. A., & Reyes, H. (2019). Marine protected areas in the 21st century: Current situation and trends. *Ocean & Coastal Management*, 171, 28-36. <https://doi.org/10.1016/j.marpol.2020.104104>
- Morales-Caselles, C., Viejo, J., Martí, E., González-Fernández, D., Pragnell-Raasch, H., González-Gordillo, J. I., ... & Cózar, A. (2021). An inshore-offshore sorting system revealed from global classification of ocean litter. *Nature Sustainability*, 4(6), 484-493. <https://doi.org/10.1038/s41893-021-00720-8>
- Otaño-Cruz, A., Montañez-Acuña, A. A., Torres-López, V., Hernández-Figueroa, E. M., & Hernández-Delgado, E. A. (2017). Effects of changing weather, oceanographic conditions, and land uses on spatio-temporal variation of sedimentation dynamics along near-shore coral reefs. *Frontiers in Marine Science*, 4, 249. <https://doi.org/10.3389/fmars.2017.00249>
- Ramírez-Ortiz, G., Reyes-Bonilla, H., Balart, E. F., Olivier, D., Huato-Soberanis, L., Micheli, F., & Edgar, G. J. (2020). Reduced fish diversity despite increased fish biomass in a Gulf of California marine protected area. *PeerJ*, 8, e8885. <https://doi.org/10.7717/peerj.8885>
- Setter, R. O., Franklin, E. C., & Mora, C. (2022). Co-occurring anthropogenic stressors reduce the timeframe of environmental viability for the world's coral reefs. *PLOS Biology*, 20(10), e3001821. <https://doi.org/10.1371/journal.pbio.3001821>
- Twitchell, J., Pollnac, R., & Christie, P. (2018). Lessons from Philippines MPA management: social-ecological interactions, participation, and MPA performance. *Environmental Management*, 61, 916-927. <https://doi.org/10.1007/s00267-018-1020-y>
- Waheed, Z., van Mil, H. G., Syed Hussein, M. A., Jumin, R., Golam Ahad, B., & Hoeksema, B. W. (2015). Coral reefs at the northernmost tip of Borneo: an assessment of scleractinian species richness patterns and benthic reef assemblages. *PLOS ONE*, 10(12), e0146006. <https://doi.org/10.1371/journal.pone.0146006>

The Lived Experiences of Teachers' Teaching Oral Communication Through Modular Distance Learning during the Pandemic

Cris Dyan R. Abarca

Crisostomo O. Retes National High School, Municipality of San Jose, Negros Oriental, Philippines

Author Email: crisdyan.abarca@deped.gov.ph

Dated received: May 14, 2024

Date revised: June 15, 2024

Date accepted: June 21, 2024

Originality: 90%

Grammarly Score: 99%

Similarity: 10%

Recommended citation:

Abarca, C.D. (2024). The lived experiences of teachers' teaching oral communication through modular distance learning during the pandemic. *Journal of Interdisciplinary Perspectives*, 2(8), 62-73.
<https://doi.org/10.69569/jip.2024.0207>

Abstract. During the COVID-19 pandemic, educational systems faced unprecedented challenges, necessitating rapid adaptations to ensure continued learning despite school closures. In response, the Most Essential Learning Competencies (MELCs) were implemented to prioritize key learning areas and objectives. However, the effectiveness of Modular Distance Learning (MDL) in delivering quality education, particularly in Oral Communication, has been questioned. This study examined the lived experiences of English teachers teaching Oral Communication within MDL in the Division of Negros Oriental. Utilizing a phenomenological approach and Colaizzi's method of data analysis, the study identified four key themes: (a) Pedagogical Challenges of MDL, (b) Teaching Difficulties with MELCs, (c) Parents as Co-Educators, and (d) Administrative Navigation. These findings highlight the need for a comprehensive reevaluation of MELCs to align with diverse learning modalities. Ongoing collaborative efforts among English teachers are essential to addressing systemic educational disparities, particularly in Oral Communication instruction. Additionally, the study underscores the crucial role of parental support in facilitating student learning within MDL, emphasizing the importance of increased student engagement in Oral Communication activities. The findings advocate for improved pedagogical practices and resource allocation to ensure equitable access to quality education, especially in areas critical for holistic student development like Oral Communication.

Keywords: Teaching; Modular distance learning; Oral communication; Most essential learning competencies.

1.0 Introduction

The COVID 19-pandemic caused undue distractions across the globe- with the education sector not being insulated from that effect (Tria, 2020; Llamera, 2021). Such abrupt change of learning delivery gave each country a fair share of challenges to implementing education amidst the temporary closure of schools. In India, learners from poorer families only got minimal access to e-learning (Tarkar, 2020; Kasar et al., 2021). The unequal distribution of technological facilities and infrastructure for online learning posed a problem in Indonesia (Batubara, 2021). Though a novice at it, African countries used social media platforms to implement classes (Okebukola et al., 2020). Nigerian and Moroccan government successfully tapped radio and television to deliver educational content. Rural areas learners having poor electrical and internet access were at a disadvantage in adjusting. A different scenario occurred in Saudi Arabia, with most students felt good about their online learning experience because of their reliable internet service (Al-Juboori & Al-Thaqafi, 2021). Academic workload also has changed. In a study by Aristovnik et al. (2020), students from Oceania, Europe, and North America reported an

increased workload, while on the contrary, students in South America, Asia, and Africa reported a decline of course load.

The Philippine education system also reeled from the effect of the pandemic. One reason was that our internet connectivity was not robust. Because of such, various gains from remote learning were not fully achieved (Toquero, 2020). In fact, some of the learners in the hinterland had to look for elevated areas to capture internet signals (Toquero, 2021). Parents of the learners admitted that the distance learning modality brought additional financial burden to them because of increased use of electricity (Agaton & Cueto, 2021). Moreover, a study by Moralista and Oducado (2020) revealed that faculty members are also uncertain if they were favorable to online education. Among other stakeholders in education, teachers had a lot of adjustments to cope with. These were necessary so they could be effective in the new setup of the teaching and learning process. Some of the things that needed consideration were appropriate pedagogy (Pokhrel & Chhetri, 2021), personal development (Chan et al., 2022), and upskilling (Dayagbil et al., 2021; Abisado et al., 2020) to be effective in the delivery of the lesson. With the end of the pandemic (bbc.com, 2022), understanding teachers' experiences amid the crisis continued to be a research topic of interest in Philippine education. Most papers that dealt with the teachers during this pandemic highlighted on some of the difficulties they met. Such was the case of the study from Robosa et al. (2021) that pointed out the lack of resources, student management skills, and workload. Other papers also considered anxiety during the pandemic (Talidad & Toquero, 2020), readiness and effectiveness (Alqabbani et al., 2021), salary decline (Al-Baadani & Abbas, 2020), and well-being (Jakubowski & Sitko-Dominik, 2021) of teachers during this pandemic.

In addressing the curriculum challenges, the Most Essential Learning Competencies (MELCs) were highlighted. These competencies aimed to prioritize key learning areas and objectives to ensure that students still received essential education despite disruptions caused by the pandemic. MELCs encompassed the foundational knowledge, skills, and attitudes that students needed to acquire across different grade levels and subject areas. They were designed to streamline the curriculum and focused on the most critical concepts and competencies that students should learn (Zalun, 2023).

Shifting to a distant learning modality had become a permanent mode of instruction even in the post-pandemic times (Castroverde & Acala, 2021). With this, teachers must receive ample technical assistance to improve their pedagogical arsenal. The need to capacitate teachers in the remote learning modality was a consensus of several studies (Baloran & Hernan, 2020; Dayagbil et al., 2021; Abisado et al., 2020; Samafani & Gumanit, 2020). It is the aim of this study that programs, trainings and interventions for capacitating teachers must be based on strategic decisions, data analysis and interpretation, in order to give quality education to students in the Modular Distance Learning modality. To achieve that end, this study is conducted.

2.0 Methodology

2.1 Research Design

The research method employed in this study was phenomenology, specifically descriptive transcendental (Husserlian) method. Phenomenology is an approach to understanding and exploring people's everyday life experiences (Qutoshi, 2018).

Phenomenology allowed the investigation of subjective phenomena in the belief that critical truths about reality are grounded in people's lived experiences. Polit and Beck (2013) posit that phenomenology is characteristically exploratory and descriptive, and the intention was not to create generalization of findings but to have a thorough understanding of the experiences from the point of view given by the study participants.

Phenomenology utilized in-depth conversation between the researcher and the study participants. This research design was particularly helpful in describing the lived experiences, centering on the description and meaning-making of those that are critical, interesting or not well-understood (Speziale & Carpenter, 2007).

2.2 Research Locale

Interviews were done on a face-to-face basis and in a virtual form. The designated places were mutually agreed upon by both the study participants and researcher.

The participants of this study were the teachers teaching Oral Communication in the different schools in the Division of Negros Oriental in Central Philippines.

2.3 Research Participants

The study participants was based on the following criteria: teaching assignment (must be presently teaching in the Department of Education), subject taught (must be teaching Oral Communication since School Year 2016), length of service (must be teaching for at least 3 years without interruption), gender (male or female), age (must be 25 years old and above), and language (who are bilingual speakers of English and Cebuano).

The study participants were chosen by the researcher on the deliberation of the inclusion standard and the phenomenon being studied. Purposive or judgmental sampling was used in choosing the participants of the study (Polit & Beck, 2013). The choice of participants was based on their experiences of the phenomenon under study. Such was required for them to comprehensively describe the phenomenon.

In gathering data, data saturation took more weight over the number of participants. Data saturation therefore happened when the same statement that reveal similar themes repeat (Polit & Beck, 2013). In this study, seven (7) participants were used to confirm data saturation.

2.4 Research Instrument

Since the research study was phenomenological in nature, the interview process used guide questions to extract significant statements relating to the lived experiences of the participants. The guide questions were originally made, with open-ended questions worded in English. These questions were meant to shed light on the issue being investigated. The interviews were recorded automatically via phone recorder or Zoom. A journal was also used so that the researcher could jot down notes and observations during the interview.

2.5 Data Gathering Procedure

After the design hearing, the researcher integrated all the corrections and suggestions of the panel members. Copies of the letters to conduct the study was sent to the Schools Division Superintendent of the Division of Negros Oriental upon the endorsement of the dean of the graduate school of Foundation University Graduate School. The signed and approved request was presented to the school principals for approval. The same documents were also presented to the possible participants. Data gathering commenced after possible participants and the researcher agreed to a specific time when they were available.

All interviews with the participants were recorded, reviewed, transcribed, and re-read. From the transcribed interviews, the researcher extracted all relevant data and applied the seven (7) steps of Colaizzi's descriptive phenomenological method to analyze them. Colaizzi's phenomenological approach was used in order to guarantee accuracy, consistency and emotional congruence.

Significant statements or phrases pertaining directly to the research phenomenon were taken out from the participants' transcripts. After thorough analysis of the statements, meanings were then formulated. The formulated meanings were arranged into cluster themes and were used to create an exhaustive description of the participants' lived experiences. Results were validated to encapsulate The Lived Experiences of Teachers' Teaching Oral Communication Through MDL during the Pandemic.

2.6 Ethical Considerations

Research ethics were primarily observed and maintained throughout the duration of conducting the study. To achieve such, prior approval from the Ethical Committee of Foundation University Research Office was sought first. More so, an informed consent form (ICF) was given to all participants of the study prior actual data gathering. The right to self-determination, confidentiality and anonymity, benefits and risks of the study, as highlighted in the ICF, was thoroughly discussed with the participants before the start of the data gathering.

Conducting the research may be influenced by the researcher's shared professional identity and experiences with the participants. Using a shared framework can impact the understanding of the phenomena and lead to potential

biases in the analysis. To maintain transparency and validity, the researcher remains vigilant in questioning the assumptions and biases throughout the research process. Ultimately, the role as both a teacher and researcher can shape the perspectives and interpretation. Therefore, bracketing is practiced during the research process to understand completely an experience.

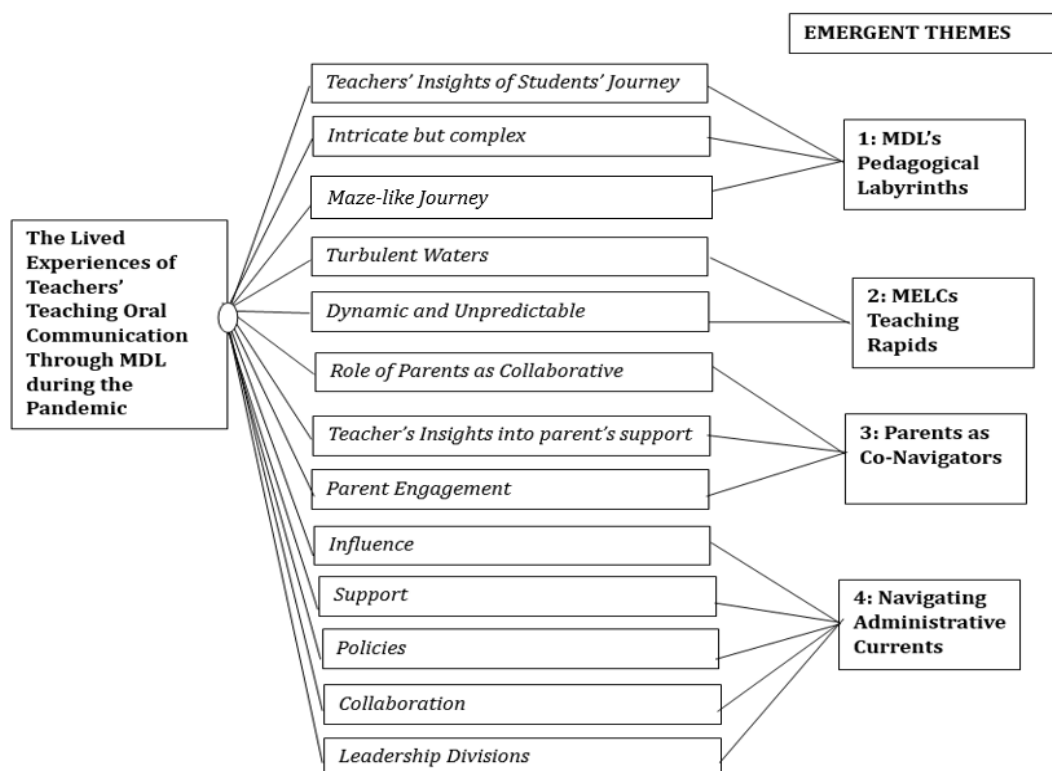
2.7 Data Analysis

Qualitative data was analyzed systematically so that content can be derived from emergent themes and patterns among cluster of themes. Analysis includes breaking down of data into smaller units, coding and naming the units according to the content they represent, and grouping coded information based on shared concepts (Polit & Beck, 2013).

In this research study, Colaizzi's method, which is deemed appropriate for content analysis was utilized. Beck & Watson as cited by Korhaber (2009) suggests that Colaizzi's method achieves objectivity in data analysis and considers it fidelity to phenomena. It is an act of refusing or telling what the phenomenon is all about, but a respectful listening to what the phenomenon speaks of itself.

3.0 Results and Discussion

After a thorough analysis of the transcripts and coding, four (4) emergent themes have emerged capturing the lived experiences of teachers' teaching oral communication through mdl during the pandemic.



. **Figure 1.** Emergent themes embodying the lived experiences of teachers' teaching oral communication through MDL during the pandemic

3.1 Emergent Theme 1: MDL's Pedagogical Labyrinths

The codes and themes identified under this first emergent theme collectively illustrate the challenges faced by both teachers and students in adapting to the Modular Distance Learning environment, particularly in the context of teaching oral communication. The theme highlighting the Challenges Encountered in Employing MDL for Teaching Oral Communication held significant points for both educators and learners, particularly in the context of the pandemic.

The theme accentuated the considerable hurdles faced in achieving the intended learning outcomes of oral communication competencies. The mismatch between the requirements of the subject and the limitations imposed by the Modular Distance Learning approach impedes the development of essential communication skills. This is crucial as oral communication is a foundational skill applicable in various aspects of personal and professional life (Wilkes, 2012). The challenges also related to limited resources and connectivity, as highlighted in the theme, bring attention to the existing inequities in access to education. Students lacking essential resources, such as internet connectivity and gadgets, face barriers in actively participating in the learning process (Gillett-Swan, 2017; Barrot et al., 2021; Baticulon et al., 2021). This exacerbates educational inequalities and hampers the inclusivity of the educational experience.

Under this emergent theme are three sub-themes, namely: a) (Theme 1) Teachers' Insights of Students' Journey; b) (Theme 2) Intricate but complex; c) (Theme 3) Maze-like Journey.

Theme 1: Teachers' Insights on Students' Journey

Educators were compelled to reconsider and adapt their pedagogical approaches to navigate the challenges presented by MDL. This theme emphasized the need for innovative instructional strategies to address the unique requirements of teaching oral communication in a modular setting.

One respondent said,

"So my role as a teacher in evaluating MELCS for oral communication under modular instructions has involved adapting my teaching strategy. I've observed that some students excel in space learning while others need more guidance. Regular feedback and communication through online platforms have been essential in assessing their progress and addressing any challenges they face in mastering the required competencies."

Teachers, recognizing these challenges, had proactively adapted their teaching strategies. The role of technology, online platforms, and innovative instructional methods were central to their approach, providing avenues for effective communication, collaboration, and expression. Despite the hurdles, educators demonstrated resilience and commitment to the educational development of students. Their ability to navigate the limitations of virtual learning environments showcases dedication to maintaining the quality of education and fostering essential skills (Basar et al., 2021). In essence, teachers' adaptability and commitment played a crucial role in mitigating the impact of disruptions caused by the pandemic, ensuring that students continued to develop vital oral communication skills and achieve the prescribed competencies even in these unprecedented times.

Theme 2: Intricate but Complex

This theme features the pervasive challenges stemming from limited resources, particularly concerning internet connectivity and access to essential gadgets. Navigating the landscape of oral communication education becomes an uphill battle for both learners and educators within the confines of MDL.

The following statements encapsulate the struggle vividly:

*"Upon the evaluation of the MELCS in teaching the oral communication subject, it is a bit hard to implement the competencies since it is in the midst of the pandemic. Due to some limited resources, especially with the kind of area that we have in *** (place of school)."*

The indications extend beyond the immediate constraints on the curriculum execution. The unavailability of necessary tools and equipment impedes the development of oral communication skills among students, raising concerns about their long-term proficiency in this critical aspect. Furthermore, the lack of access to more knowledgeable others, be it within the household or the community, exacerbates the challenges faced by students in understanding and mastering oral communication (Baticulon et al., 2021).

Theme 3: Maze-like Journey

This basically sums up the decline in engagement and motivation of the students. Amidst the global pandemic, the shift to MDL has brought about a concerning decline in student motivation and engagement. A critical factor contributing to this issue is the stark absence of personal interaction. Traditional classrooms thrive on the dynamic

between students and educators, fostering a sense of community (Bustillo & Aguilos, 2022). This is corroborated by one of the respondents who said,

"In order that students will understand the lesson, I encouraged them to ask questions and I gave them examples, but I don't think that it's 100 percent of comprehension. For, me as teacher in oral communication, students would better understand lessons when these involves gestures and facial expressions, etc. and to give them examples in a face-to-face aspect."

Furthermore, disengagement from the learning process was a notable factor. Students who felt disinterested or overwhelmed by the new learning format may resort to cheating as a quick solution to complete assignments without investing the effort required for genuine understanding (Diego, 2017). To address these challenges, educators and institutions should proactively communicate expectations, provide academic support, and foster a sense of community. Promoting a culture of integrity and emphasizing the value of learning for personal growth can help deter cheating behaviors and create a more supportive educational environment (Holden et al., 2021).

3.2 Emergent Theme 2: MELCs Teaching Rapids

The second emergent theme delves into the evaluation of the effectiveness of MELCs in teaching oral communication. It explores the messages of this assessment on the overall process of teaching and learning oral communication skills. The statements provide insights into the challenges and benefits perceived by educators, shedding light on the complexities inherent in implementing MELCs in the context of oral communication education. Under this emergent theme are two sub-themes, namely: a) (Theme 4) Turbulent Waters; b) (Theme 5) Dynamic and Unpredictable.

Theme 4: Turbulent Waters

This theme focused on the accessibility and successful implementation of the Most Essential Learning Competencies (MELCs) in the MDL environment. It addressed the achievements and challenges in delivering the specified oral communication competencies. This theme was interestingly dichotomized into those who find it impossible to implement the MELCs and those who find the MELCs very useful in guiding their instruction during the implementation of modular and distance learning paradigms at the height of the pandemic.

One teacher lamented,

"In my own evaluation or in my own point of view, the MELCS under the modular distance learning or the modular teaching was very difficult. In my own experience, because most of the competencies were not that achievable in the modular type of learning because most of the competencies needs to be done in a face to face basis."

Moreover, the emphasis on the practical aspects of oral communication competencies, such as actual performance and the identification of speech contexts, acts, and styles, signaled the importance of experiential learning. This brought out the potential limitations of MDL in fully addressing the hands-on requirements of certain competencies. It called for a nuanced approach that integrates both theoretical understanding and practical application, prompting educators to explore innovative teaching methods and assessment strategies (Grassini, 2023).

Theme 5: Dynamic and Unpredictable

Understanding students' comprehension of oral communication competencies became a focal point in this theme. The statements shed light on factors affecting student comprehension, such as the importance of face-to-face interactions and the role of parents in supporting their learning. This fifth theme encapsulated the challenges associated with ensuring effective learning outcomes in the context of teaching oral communication through the MELCs. The statements shed light on the multifaceted nature of this challenge, particularly in the context of remote and MDL environments. One teacher articulates the struggle:

"I should say 3, ohh, yes 3, considering the difficulties in learning process. So, it's not difficult nor easy, because as a teacher, OK, I always find ways to deliver the modules if possible. But due to the limited resources and the students' capacity to understand the instructions, a gap towards learning is very evident."

This reflected the need for clear and accessible instructional materials to facilitate independent learning. The gist of this autonomous learning approach included the necessity for well-designed and easily comprehensible

modules. Educators and instructional designers must prioritize clarity, simplicity, and accessibility in module creation to ensure that students can navigate and understand the content without constant guidance. Moreover, ongoing support mechanisms, such as regular check-ins and opportunities for clarification, became crucial to address any challenges students may encounter.

3.3 Emergent Theme 3: Parents as Co-Navigators

The emergent theme of Parents as Co-Navigators tackles parents' crucial role in their children's education, particularly amidst the challenges posed by the pandemic and the shift to modular teaching methods. This theme illuminates the collaborative partnership between parents and educators in navigating the educational landscape, highlighting both the opportunities and constraints inherent in this dynamic.

One significant aspect revealed by this theme is the extent to which parents support their children's learning process. In the context of modular teaching, where traditional classroom interactions are replaced by remote learning and independent study, parents often serve as vital guides, assisting their children in understanding instructional materials and completing assigned tasks (Shuja et al., 2019). This involvement extends beyond merely overseeing homework completion; parents actively clarify instructions, provide additional explanations, and facilitate comprehension of complex topics.

However, the theme also acknowledges parents' challenges in assuming this co-navigator role. Notably, some parents may lack the necessary knowledge or resources to effectively support their children's learning, particularly in subjects where they themselves may have limited expertise. This creates a disparity in the level of support available to students, with those whose parents possess a greater educational background or familiarity with the curriculum potentially having an advantage (Đurišić & Bunijevac, 2017).

Moreover, the theme tackles the impact of socioeconomic factors on parental involvement in education. The statements suggest that disparities in access to technology and educational resources further exacerbate inequities, with students from disadvantaged backgrounds facing additional hurdles in accessing the support they need. This highlights the need for targeted interventions and support systems to address the digital divide and ensure equitable access to educational opportunities.

Under this emergent theme are three sub-themes, namely: a) (Theme 6) Role of Parents as Collaborative Partners; b) (Theme 7) Teacher's Insights into parent's support; c) (Theme 8) Parent Engagement.

Theme 6: Role of Parents as Collaborative Partners

This theme delves into the collaborative dynamic between parents and educators in facilitating students' learning experiences, particularly in the context of remote and modular teaching environments. This theme highlights how parents contribute to their children's education and the challenges they face in effectively fulfilling this collaborative role.

"Young students' knowledge to understand instruction despite the fact that there may be parents, relatives or neighbors who can assist students in understanding the lessons. But some of them have insufficient information on the topic."

These findings highlight parents' critical role in supporting their children's education and the challenges they encounter in effectively fulfilling this role. It underscores the need for concerted efforts to address socioeconomic disparities, expand access to technology, and strengthen collaboration between parents and educators to create a more inclusive and supportive learning environment for all students (Domínguez et al., 2023).

Theme 7: Teacher's Insights into Parent's Support

This theme seeps into the perspectives and experiences of educators regarding the support provided by parents in the context of remote and modular learning environments. This theme sheds light on the challenges faced by teachers in facilitating parental involvement and the implications of parental support—or lack thereof—on students' learning experiences.

"Then another student's knowledge to understand the instruction. So despite the fact that there may be parents, relatives or neighbors who can assist students in understanding the lesson case, some of them have insufficient information on the topic. Parents, relatives..."

The above statement from another respondent further underscores the issue of parental capacity to support student learning. Despite the presence of potential sources of assistance such as parents, relatives, or neighbors, some students still struggle due to insufficient support or guidance. The statement underscores the importance of recognizing and addressing the variability in parental capacity to support learning, particularly in subjects or topics where parents may lack expertise.

Theme 8: Parent Engagement

This theme explores the dynamics of parental involvement in the context of modular teaching, with a particular focus on its impact on student learning outcomes and the challenges encountered by educators in fostering effective parent engagement. This theme sheds light on the various factors that influence parental involvement and its implications for student academic achievement.

"The important factors that play an important role in evaluating MELCS in teaching oral communication under modular teaching are the following, First, is students' knowledge to understand the directions or instructions. If, they need assistance, nobody can assist them, they ask other students who also lack communication skills."

The statement above from a respondent underscores the critical role of parental support in students' ability to comprehend instructional materials and directions. It highlights the importance of students' knowledge and understanding of directions or instructions, particularly in oral communication, where clarity and comprehension are essential (Đurišić & Bunijevac, 2017). The statement also points out the limitations faced by students who lack parental support, leading them to seek assistance from peers who may also struggle with communication skills. This highlights the interconnectedness between parental engagement, student learning, and academic success.

3.4 Emergent Theme 4: Navigating Administrative Currents

This emergent theme tackles the challenges and complexities that educators face in navigating administrative policies, procedures, and expectations, particularly in the context of modular teaching and the COVID-19 pandemic. This theme sheds light on the various administrative dynamics that impact teaching practices, curriculum delivery, and overall educational outcomes.

One significant aspect of this theme is the influence of administrative decisions and directives on teaching methodologies and instructional practices. Educators must often adapt their teaching approaches to align with administrative guidelines and mandates, such as implementing Most Essential Learning Competencies (MELCs) in the curriculum (Dayagbil et al., 2021). These administrative currents shape the educational landscape and set the parameters within which educators operate, influencing the content, pacing, and delivery of instruction. Another key dimension of this theme is the support and resources provided by educational institutions to facilitate modular teaching and learning. Administrators are crucial in allocating resources, providing training and professional development opportunities, and implementing policies to support educators in transitioning to modular teaching modalities. The effectiveness of administrative support systems can significantly impact educators' ability to navigate the challenges of modular teaching and meet the diverse needs of their students (Basar et al., 2021).

Under this emergent theme are three sub-themes, namely: a) (Theme 9) Influence; b) (Theme 10) Support; c) (Theme 11) Policies; d) (Theme 12) Collaboration; e) (Theme 13) Leadership Divisions

Theme 9: Influence

This theme discusses the impact of administrative decisions and policies on teaching practices and curriculum delivery, particularly in the context of modular teaching. This delves into how administrative directives shape the selection of learning competencies, the organization of curriculum, and the overall instructional approach adopted by educators.

“Teaching MELCS under modular teaching referred to the core set of skills, knowledge, and objectives that students must master within a specific subject, or these competencies are carefully selected to represent the fundamental learning outcomes and modular teaching breaks down the curriculum into smaller, manageable units or modules, each aligned with these essential competencies.”

The statement above from a respondent elucidates the concept of Most Essential Learning Competencies (MELCs) and their role in modular teaching. It explains that MELCs represent the core set of skills, knowledge, and objectives that students are expected to master within a specific subject. Modular teaching utilizes MELCs to break down the curriculum into smaller, manageable units or modules, each aligned with these essential competencies (Baloran & Hernan, 2020). This statement highlights the influence of administrative policies in defining the scope and focus of instruction, as well as the rationale behind adopting MELCs to streamline curriculum delivery.

Theme 10: Support

This theme talks about the various forms of assistance and resources provided to educators to facilitate the transition to modular teaching and address the challenges associated with remote learning. This theme highlights the importance of administrative support systems in equipping educators with the tools, guidance, and resources needed to navigate the complexities of modular teaching effectively.

“Though it will also alleviate the strain of training classroom-oriented learning resources into distance learning adopted learning resources, so the release of MELCS has no effect on the standards established by the entire K-12 curriculum guide, so rather this serves as a single guide for teachers as they fulfill learner's instructional requirements.”

This reflects the perceived ease and convenience of implementing MELCs in modular teaching. The statement suggests that adopting MELCs reduces teachers' burden in creating learning plans and allows them to focus on addressing parental queries and conducting evaluation and assessment tasks. This highlights the role of administrative support in simplifying administrative processes and minimizing logistical challenges, thereby enabling educators to allocate more time and energy to instructional tasks and student support activities.

Theme 11: Policies

This theme centers around the influence and impact of educational policies, specifically focusing on the implementation of Most Essential Learning Competencies (MELCs) in the context of modular teaching. This theme elucidates how policies shape curriculum development, instructional planning, and assessment practices, and how they guide educators in navigating the challenges of modular teaching.

“So as far, the MELCS that are achievable and attainable in teaching oral communication under modular teaching are concerned. I think all it was achievable and attainable. The modules that were distributed properly, properly disseminated with respect to its writers and where quality assured to meet the needs and to be able to fulfill the learner's instructional requirements but consider different challenges during the new normal setting so it takes an extra mile to attain and achieve them.”

This further elucidates the function of MELCs in defining learning goals, competencies, and evaluation criteria for modular teaching, as indicated in her response above. It emphasizes the subject-specific fundamentals and skills emphasized by MELCs and highlights their adaptability to different learning environments (Gabriel et al., 2022). This statement underscores the flexibility of policies in responding to modular pacing, sequencing, and delivery methods while also emphasizing their role in promoting consistency and coherence in curriculum implementation.

Theme 12: Collaboration

This theme discovers the importance of collaborative efforts among educators, students, administrators, and other stakeholders in modular teaching environments and highlights the benefits of collaboration in facilitating effective curriculum delivery, instructional practices, and professional development opportunities.

“To keep up with the changes in education, teachers needed new ways to teach, learning tools that use technology, mixed learning methods that combine synchronous and modular parts, and ongoing professional development.”

The statement above underscores the evolving nature of education and the importance of collaboration in adapting to changes in teaching methodologies and learning environments. It emphasizes the need for educators to embrace new teaching methods, utilize technology-enhanced learning tools, and engage in ongoing professional development to meet the diverse needs of students in modular teaching settings (Cerezo et al., 2023). This statement highlights the collaborative efforts of educators, administrators, and educational stakeholders in fostering innovation and adaptation in education.

Theme 13: Leadership Divisions

This final theme explores the role of leadership in guiding and overseeing educational practices in modular teaching environments. This highlights the impact of leadership decisions, directives, and support mechanisms on instructional practices, curriculum delivery, and student learning outcomes.

“Set of clear criteria and rubrics, Mechanisms for Feedback, Assessment options, The use of Technology, Including Peer and Self-Evaluation, and alignment with Learning Goals. These factors are important because they help teachers rate students' oral communication skills in a full and useful way. They improve student involvement, ongoing growth, communication skills that can be used in different situations, and the ability to adapt and improve lessons.”

One respondent has emphasized the importance of clear criteria, rubrics, feedback mechanisms, assessment options, and alignment with learning goals in evaluating student learning outcomes. It suggests that these factors are essential for teachers to effectively assess students' oral communication skills and promote ongoing growth and development (Baticulon et al., 2021). This idea stipulates that the role of leadership in providing educators with the necessary resources, tools, and support systems to facilitate comprehensive assessment practices and promote student success.

4.0 Conclusion

Based on the findings outlined above, several conclusions can be drawn. Firstly, MDLs Pedagogical Labyrinths had significant contents for both educators and learners. The difficulties faced by both educators and students in executing the curriculum highlight not only immediate hindrances but also long-term consequences on the development of oral communication skills. Secondly, MELCs teaching rapids explored the benefits and challenges of implementing the Most Essential Learning Competencies in a modular setting. The dichotomy in educators' perspectives on the achievability of MELCs highlighted the need for tailored support and resources. Thirdly, Parents as Co-Navigators highlights the critical role that parents play in supporting their children's learning. The study emphasizes the disparities and challenges that parents face in fulfilling this role effectively and the importance of providing them with the necessary support systems. Lastly, Navigating Administrative Currents underscores the impact of administrative policies and leadership decisions on curriculum delivery and instructional practices. It highlights the need for strategic planning and collaboration among stakeholders to navigate the complexities of modular teaching environments and ensure equitable access to educational opportunities for all students.

In essence, addressing the challenges identified in these emergent themes involves a multi-faceted approach. Policymakers should consider initiatives that bridge the digital divide, provide necessary resources, and ensure access to knowledgeable mentors, fostering an inclusive and effective oral communication education framework. Furthermore, educators needed ongoing support, professional development, and adaptability to navigate the complexities of MDL, ensuring the sustained development of essential oral communication skills in students (Anero & Tamayo, 2023).

Based on the aforementioned findings and conclusions, the following recommendations are hereby offered:

- a) Policymakers should take a multifaceted approach to address emergent challenges by updating the flexibility of MELCs from time to time to accommodate different learning modalities and adaptability to navigate the complexities of MDL, thereby ensuring that both teachers and students are equipped to thrive in evolving educational landscapes.
- b) English teachers should provide equitable access to quality learning experiences for all students and engage in continuous collaboration with colleagues to advocate for policy changes that specifically target systemic barriers and challenges in education, specifically in teaching Oral Communication in the MDL.

- c) Parents should actively support their children's learning in modular environments by establishing a comfortable home environment for studying-a space or room for the student to study, encouraging regular communication with teachers to address any concerns or difficulties, and offering emotional support and encouragement.
- d) Oral communication students should participate in class discussions, use resources to understand course materials, manage their time, communicate with their teachers, provide feedback, and strive for continuous improvement.

5.0 Contributions of Authors

This undertaking was written and accomplished solely by the researcher.

6.0 Funding

This research did not receive funding from any funding agency.

7.0 Conflict of Interests

This study has no conflict of interest of any sort.

8.0 Acknowledgment

The author will be forever grateful to all the people who contributed to the success of this study.

9.0 References

- Abisado, M. B., Unico, M. G., Umoso, D.G., Manuel, F.E., Barroso, S.S. (2020). A flexible leaning framework implementing asynchronous course delivery for Philippine local colleges and universities. *International Journal of Advanced Trends in Computer Science and Engineering*, 9(1.3). <https://doi.org/10.30534/ijatcse/2020/6591.32020>
- Agaton, C. B. & Cueto, L. J. (2021). Learning at home: Parents' lived experiences on distance learning during COVID-19 pandemic in the Philippines. *International Journal of Evaluation and Research in Education*, 10(3), 901-911.
- Al-Baadani, A.A. & Abbas, M. (2020). The impact of Coronavirus (COVID-19) pandemic on higher education institutions (HEIs) in Yemen: Challenges and recommendations for the future. *European Journal of Education Studies*, 7(7), 68-82. DOI: 10.46827/ejes.v7i7.3152
- Al-Juboori, Z. M. A. & Al-Thaqafi, M. H. (2021). The student's perception toward the effectiveness of online learning during the pandemic of COVID-19 Kingdom of Saudi Arabia perspective. *American Research Journal of Humanities and Social Science*, 4(9), 144-152.
- Alqabbani, S., Almuwais, A., Benajiba, N. & Almoayad, F. (2020). Readiness toward emergency shifting to remote learning during COVID-19 pandemic among university instructors. *E-learning and Digital Media*, 18(5), 460-479. DOI: 10.1177/2042753020981651
- Anero, J. A., & Tamayo, E. C. (2023). Going back to normal: a phenomenological study on the challenges and coping mechanisms of junior high school teachers in the full implementation of In-Person classes in the public secondary schools in the division of Rizal. Zenodo (CERN European Organization for Nuclear Research). <https://doi.org/10.5281/zenodo.8274909>
- Aristovnik, A., Kerzic, D., Ravselj, D., Tomazevic, & Umek, L. (2020). Impacts of the COVID-19 pandemic on life of higher education students: A global perspective. *Sustainability*, 12(20). <https://doi.org/10.3390/su12208438>
- Baloran, E. T. & Hernan, J. T. (2020). Crisis self-efficacy and work commitment of education workers among public schools during COVID-19 pandemic. *Preprints.org*. DOI: 10.20944/preprints202007.0599.v1
- Barrot, J. S., Llenares, I. I., & Del Rosario, L. S. (2021). Students' online learning challenges during the pandemic and how they cope with them: The case of the Philippines. *Education and Information Technologies*, 26(6), 7321-7338. <https://doi.org/10.1007/s10639-021-10589-x>
- Baticulon, R. E., Sy, J. J., Alberto, N. R. I., Baron, M. B. C., Mabulay, R. E. C., Rizada, L. G. T., Tiu, C. J. S., Clarion, C. A., & Reyes, J. C. B. (2021). Barriers to online learning in the time of COVID-19: A national survey of medical students in the Philippines. *Medical Science Educator*, 31(2), 615-626. <https://doi.org/10.1007/s40670-021-01231-z>
- Batubara, B. M. (202). The problems of the world of education in the middle of COVID-19 Pandemic. *Budapest International Research and Critics Institute-Journal*, 4(1), 450-457.
- Basar, Z. M., Mansor, A. N., Jamaludin, K. A., & Alias, B. S. (2021). The Effectiveness and Challenges of online learning for secondary school students – a case study. *Asian Journal of University Education*, 17(3), 119. <https://doi.org/10.24191/ajue.v17i3.14514>
- Bustillo, E., & Aguilos, M. (2022). The challenges of modular learning in the wake of COVID-19: a digital divide in the Philippine countryside revealed. *Education Sciences*, 12(7), 449. <https://doi.org/10.3390/educsci12070449>
- Castroverde, F., & Acala, M. (2021). Modular distance learning modality: Challenges of teachers in teaching amid the Covid-19 pandemic. *International Journal of Research Studies in Education*, 10(8), 7-15.
- Chan, J. R., Marasigan, A. C., & Santander, N. T. (2021). Multigrade teachers' experiences and learning assessments on modular remote teaching during COVID-19 pandemic. *International Journal of Research Studies in Education*, 10(6), 95-107.
- Covid: WHO warns pandemic not over amid Europe case records. (2021, January 19). *bbc.com*. <https://www.bbc.com/news/world-europe-60048390>
- Dayagbil, F. T., Palompon, D. R., Garcia, L. L., Olvido, M.M. J. (2021). Teaching and learning continuity amid and beyond the pandemic. *Frontliners in Education*, 6. DOI: 10.3389/feduc.2021.678692
- Diego, L. A. (2017). Friends with Benefits: Causes and Effects of Learners' Cheating Practices During Examination. *IAFOR Journal of Education*, 5(2). <https://doi.org/10.22492/ije.5.2.06>

- Domínguez, P. M., Muñoz, D. C., Díez, E. R., & De Mesa, J. C. (2023). Digital inclusion for social inclusion. Case study on digital literacy. *Frontiers in Communication*, 8. <https://doi.org/10.3389/fcomm.2023.1191995>
- Đurišić, M., & Bunijevac, M. (2017). Parental involvement as a important factor for successful education. *CEPS Journal : Center for Educational Policy Studies Journal*, 7(3), 137–153. <https://doi.org/10.26529/cepsj.291>
- Gabriel, B. C., Nepomuceno, J. D., Kadusale, M. H., Taneo, J. D., & Cabello, C. A. (2022). The compromised most essential learning competencies: a qualitative inquiry. *Zenodo* (CERN European Organization for Nuclear Research). <https://doi.org/10.5281/zenodo.7162134>
- Gillett-Swan, J. (2017). The challenges of online learning: Supporting and engaging the isolated learner. *Journal of Learning Design*, 10(1), 20. <https://doi.org/10.5204/jld.v9i3.293>
- Grassini, S. (2023). Shaping the Future of Education: Exploring the potential and consequences of AI and ChatGPT in educational settings. *Education Sciences*, 13(7), 692. <https://doi.org/10.3390/educsci13070692>
- Holden, O. L., Norris, M. E., & Kuhlmeier, V. A. (2021). Academic Integrity in Online Assessment: A Research review. *Frontiers in Education*, 6. <https://doi.org/10.3389/feduc.2021.639814>
- Jakubowski, T.D. & Sitko-Dominik, M. M. (2021). Teachers' mental health during the first two waves of the COVID-19 pandemic in Poland. *PLoS ONE*. <https://doi.org/10.1371/journal.pone.0257252>
- Kasar, A. B., Reddy, M., Wagh, R., & Deshmukh, Y. (2021). Current situation of education field due to Corona Virus Disease 19. *Paideuma Journal*, 14(2), 44-51.
- Korhaber, R. A. (2009). The lived experience of nursing severe burns injury patients: A phenomenological inquiry. Thesis from Adelaide, Australia.
- Llamera, B. B. (2021). Socio-economic impact of COVID-19 pandemic and its implication on education. *International Journal of Qualitative Research*, 1(2), 79-86. DOI: 10.47540/ijqr.v1i2.364
- Moralista, R. B. & Oducado, R. M. F. (2020). Faculty perception toward online education in a state college in the Philippines during the Coronavirus Disease 19 (COVID-19) pandemic. *Universal Journal of Educational Research*, 8(10), 4736-4742. DOI: 10.13189/ujer.2020.081044
- Okebukola, P. A., Suwadu, B., Oladejo, A., Nyandwi, R., Ademola, L., ..., Awaah, F. (2020). Delivering high school chemistry during COVID-19 lockdown: Voices from Africa. *Journal of Chemical Education*. <https://dx.doi.org/10.1021/acs.jchemed.0c00725>
- Pokhrel & Chhetri (2021). A literature review on impact of COVID-19 pandemic on teaching and learning. *Higher Education for the Future*, 8(1), 133-141. DOI: 10.1177/2347631120983481
- Polit, D. F. & Beck, C. T. (2013). *Nursing research: Principles and methods*, (8th ed.). USA: Lippincott Williams & Wilkins.
- Qutoshi, S. B. (2018). Phenomenology: A philosophy and method of inquiry. *Journal of Education and Educational Development*, 5(1), 215-222.
- Robosa, J., Paras, N.E., Perante, L., Alves, T., & Tus, J. (2021). The experiences and challenges faced of the public school teachers amidst the COVID-19 Pandemic: A phenomenological study in the Philippines. *International Journal Of Advance Research And Innovative Ideas In Education*, 7(1), 1342-1361.
- Samafani, F. & Gumanit, R.L.R. (2021). Survival with technology: Elderly teachers' perspective towards emergency online learning during the COVID-19 pandemic in the Philippines. *Studies in Learning and Technology*, 2(3), 98-114.
- Shuja, A., Qureshi, I. A., Schaeffer, D. M., & Zareen, M. (2019). Effect of m-learning on students' academic performance mediated by facilitation discourse and flexibility. *Knowledge Management & E-Learning: An International Journal*, 158-200. <https://doi.org/10.34105/j.kmel.2019.11.009>
- Speziale, H. & Carpenter, D. (2007). *Qualitative research in nursing: Advancing humanistic imperative*. (2nd ed.). Philadelphia, Lippincott Williams & Wilkins.
- Talidong, K. J. B. & Toquero, C. M. D. (2020) Philippine Teachers' Practices to Deal with Anxiety amid COVID-19, *Journal of Loss and Trauma*, 25:6-7, 573-579, DOI: 10.1080/15325024.2020.1759225
- Tarkar, P. (2020). Impact of COVID-19 pandemic on education system. *International Journal of Advanced Science and Technology*, 29(9), 3812-3814.
- Toquero, C. M. D. (2021) Academic silver linings in a Philippine state university amid the early stages of pandemic cases. *Journal of Learning for Development*, 8(2), 448-455.
- Toquero, C. M. D. (2021). Neoliberalism crisis and the pitfalls and glories in emergency remote education. *Asian Journal of Distance Education*, 16(1), 90-97. <https://doi.org/10.5281/zenodo.4672777>
- Toquero, C.M. (2021). Emergency remote education experiment amid COVID-19 pandemic in learning institutions in the Philippines. *International Journal of Educational Research and Innovation*, 15, 162-176. DOI <https://doi.org/10.46661/ijeri.5113>
- Tria, J. Z. (2020). The COVID-19 pandemic through the lens of education in the Philippines: The new normal. *International Journal of Pedagogical Development and Lifelong Learning*, 1(1). <https://doi.org/10.30935/ijpdll/8311>
- Wilkes, G. L. (2012). The importance of oral communication skills and a graduate course to help improve these skills. *Chemical Engineering Education*, 46(4), 251-259. <https://eric.ed.gov/?id=EJ990967>
- Zalun, J. G. (2023). The Teachers' Utilization of the Most Essential Learning Competencies (MELCS) and its Relation to the Learning Development of Grade Six Pupils in a Public School in the Philippines: Basis for a Proposed Program. *International Journal of Multidisciplinary*, 4(6), 1888-1903. <https://doi.org/10.11594/ijmaber.04.06.15>

Sustainable Coastal Tourism Practices in Aklan: Bases for Policy Recommendations

Probee Bea P. Estuya*, Tonylen S. De Jose
Aklan State University, Aklan, Philippines

Author Email: beaestuya17@gmail.com

Dated received: May 13, 2024

Date revised: June 15, 2024

Date accepted: June 21, 2024

Originality: 85%

Grammarly Score: 99%

Similarity: 15%

Recommended citation:

Estuya, P.B., De Jose, T. (2024). Sustainable coastal tourism practices in Aklan: bases for policy recommendations. *Journal of Interdisciplinary Perspectives*, 2(8), 74-83. <https://doi.org/10.69569/jip.2024.0204>

Abstract. Aklan, one of the provinces in the Philippines, is known for its beautiful white beaches. Among its municipalities, Buruanga stands out with its immaculate white sand. This study examined the current state of coastal tourism, identified challenges and opportunities, and proposed policy recommendations for the effective implementation of sustainable practices in Aklan, Philippines. The research, conducted through a quantitative descriptive correlational design, involved 30 stakeholders, including resort owners, tourists, resort workers, municipal tourism officers, and local government officials. Data were collected using a researcher-made questionnaire and interviews. Findings revealed positive implementation of sustainable practices, particularly in policies, operations and management, socio-cultural aspects, products and services, and facilities. However, challenges persisted, such as changing existing practices and waste management. Despite these challenges, opportunities existed, including existing infrastructure and collaboration between stakeholders. Recommendations emphasized the need for strengthened waste management systems, updated policies, increased awareness campaigns, and community involvement. The study underscored a commitment to sustainable practices in Buruanga's coastal areas while identifying areas for improvement. Addressing these weaknesses can leverage existing strengths, contributing to a more environmentally responsible and economically viable tourism industry. Through its findings and recommendations, this research sought to inform policymakers, stakeholders, and communities, fostering sustainable tourism development in Buruanga, Aklan, and beyond.

Keywords: Sustainable coastal tourism; Tourism industry; Aklan; Policy Recommendation.

1.0 Introduction

The Philippines, as an archipelagic nation, heavily relies on marine-related tourism activities. Aklan is among the provinces blessed with flourishing and enchanting white beaches in the country. Buruanga, Aklan, a municipality with powdery white sand akin to its neighboring municipality, Malay, Aklan, where the world-famous Boracay beach is located. Like Boracay, Buruanga's coastal tourism attractions have led to increased visitation and international recognition, significantly contributing to local economies. However, the surge in tourist arrivals raises concerns about the sustainability of these coastal attractions and their impact on natural resources and local cultures.

As highlighted by Smith et al. (2019), the exponential tourism growth can lead to environmental degradation, cultural disruption, and strained community resources. Understanding the specific impacts of tourism on the local environment, culture, and economy is crucial for devising targeted management strategies. Moreover, Jones and Wang (2020) emphasize the importance of community involvement and stakeholder collaboration in developing sustainable tourism practices. These studies explore gaps in current practices and propose policy recommendations to ensure long-term environmental and socio-economic benefits for the region. Additionally, they aim to identify challenges and opportunities associated with coastal tourism in Buruanga, Aklan. Drawing

inspiration from Garcia and Santos (2018), who advocate for an integrated approach to coastal tourism management, this study seeks to provide comprehensive and context-specific recommendations balancing the needs of tourists, local communities, and the natural environment.

While previous studies have focused on community involvement and stakeholder collaboration, several research gaps need addressing before forming effective policy. Comprehensive data on existing sustainable practices, their effectiveness, and stakeholder awareness is lacking. Understanding the specific environmental and social impacts of tourism on Buruanga's ecosystems, waste management, resource consumption, and communities is essential. Additionally, research is needed to assess the economic viability and potential return on investment for implementing sustainable practices. Meaningful engagement with stakeholders is crucial to ensure inclusive and effective policy development. Furthermore, analyzing the existing policy landscape and enforcement mechanisms will reveal gaps and weaknesses that need addressing. Addressing these gaps requires investigating the potential and challenges of community-based tourism models, assessing the carrying capacity of Buruanga's resources, and integrating climate change adaptation strategies. By filling these knowledge gaps, this research can provide valuable insights and recommendations for promoting truly sustainable coastal tourism practices in Buruanga, Aklan, benefiting the environment, local communities, and the tourism sector itself.

2.0 Methodology

2.1 Research Design

The study employed a descriptive correlational design, which, without establishing cause and effect, enables the investigation and characterization of relationships between two or more variables. The quantitative descriptive correlational design is utilized in research studies aiming to provide static snapshots of situations and establish relationships between different variables (McBurney & White, 2009). This design involves collecting and analyzing quantitative data that can be measured, typically through instruments, allowing numerical data to be analyzed using statistical procedures (Creswell, 2008). This design involves selecting the study's objectives, determining the order in which data is gathered and analyzed, and outlining the steps or phases of the research process in which quantitative data and results are integrated.

2.2 Research Participants

The study was conducted in the municipality of Buruanga, known for its diverse natural features, including mountains, caverns, coves, beaches, rivers, waterfalls, and seafloors, which entice tourists to explore its breathtaking and captivating natural attractions. The vantage points atop mountains offer viewers stunning vistas of the landscape. Buruanga's natural tourism appeal is a harmonious blend of beach and sun, mountains and highlands, water and water sports, and nature and religion. The respondents consisted of 30 stakeholders, including resort owners, tourists, resort workers, municipal tourism officers, and local government officials. The selection of respondents was done through purposive sampling, a deliberate method of selecting individuals based on their ability to provide insights into a particular theme, concept, or phenomenon.

2.3 Research Instrument

A researcher-made questionnaire was utilized in this study, consisting of five (5) parts. Part I gathered information about the respondents' profiles, including age, gender, civil status, occupation, monthly income, and their involvement with coastal tourism. Part II employed a survey using the Ecotourism Tracking Tool, which included six (6) sets of standards and parameters: policies, operations and management, socio-cultural aspects, products and services, bio-ecological factors, and facilities. Part III focused on identifying challenges encountered, while Part IV addressed opportunities observed and practiced. Part V solicited responses regarding best practices and policy recommendations. Additionally, an interview guide was employed as another instrument.

To establish validity, the instrument underwent evaluation by five (5) experts. Among them, two (2) were research experts, one (1) was a language expert, and two (2) were specialization experts – one specializing in coastal areas and the other in ecological tourism. Their suggestions, recommendations, and comments were carefully considered in refining the instrument.

2.4 Data Gathering Procedures

The researcher collected data from various barangays in Buruanga, Aklan, where coastal attractions are situated. The instrument was distributed and administered by the researcher, who also later collected it. Clear directions for completing the questionnaires were provided to all respondents. Each respondent was allotted 20 to 30 minutes to complete the instruments. Upon completion, the researcher reviewed the completeness of the respondents' answers and asked follow-up questions based on their responses, aiding in the clarification of certain answers pertinent to the study's problem. Upon retrieval of the completed instruments, the researcher gathered them all and ensured their completeness by cross-checking the total number.

2.5 Data Analysis

The collected data underwent analysis using the Statistical Package for Social Sciences (SPSS) software version 21. Descriptive statistics such as frequency count, percent, and mean were employed.

2.6 Ethical Considerations

In conducting this study, the researcher adhered to several ethical considerations. Firstly, informed consent was obtained from all participants. The respondents were fully informed about the purpose of the study, the methods being utilized, and the potential outcomes. This ensured that they were equipped with sufficient information to make an informed decision about participating in the research. Importantly, participants were given the freedom to choose whether or not to take part, without any form of coercion or deception. Furthermore, the researcher emphasized the importance of maintaining anonymity and confidentiality throughout the study. Participants were assured that all information provided in the questionnaires and interviews would be treated with the utmost professionalism. Strict confidentiality measures were implemented to safeguard their privacy rights. This ensured that participants could freely share their thoughts and experiences without fear of their responses being disclosed to others.

3.0 Results and Discussion

3.1 Extent of Implementation of Sustainable Practices

This section shows the extent of sustainable practices of coastal areas at Buruanga, Aklan in terms of policies, operations and management, socio-cultural, products and services, bioecological, and facilities.

Policies

Table 1. Descriptive statistics of the extent of implementation of sustainable practices in terms of policies

INDICATOR	MEAN	DESCRIPTION
1. The existing waste management systems in place for beach attractions in Buruanga, Aklan are effective in maintaining cleanliness and environmental conservation.	3.80	Highly Observed/Practiced
2. The site or project is located within the identified ecotourism site.	4.13	Highly Observed/Practiced
3. The existing policies and regulations effectively protect and preserve the cultural heritage associated with beach attractions in Buruanga, Aklan.	4.30	Highly Observed/Practiced
4. Local businesses and stakeholders demonstrate commitment and adherence to sustainable tourism practices at beach attractions in Buruanga, Aklan.	4.03	Highly Observed/Practiced
5. National/Local permits and licenses (e.g. DTI registration, Mayor's permit, health sanitation certification, FlagT, PAMB resolution, etc.) are issued to legalize operations.	4.43	Highly Observed/Practiced
GRAND MEAN	4.14	Highly Observed/Practiced

Table 1 illustrates the extent of implementation of sustainable practices, particularly in terms of policies, which were highly observed and practiced, with a grand mean of 4.14. Specifically, the issuance of National/Local permits and licenses to legalize operations received a high mean score of 4.43. This suggests that, on average, sustainable practices are widely observed and practiced across various indicators in beach attractions in Buruanga, Aklan. However, an indicator regarding the effectiveness of existing waste management systems received a mean score of 3.80, still categorized as "Highly Observed/Practiced." While this score indicates that waste management systems are generally effective in maintaining cleanliness and environmental conservation, there may be room for improvement to further enhance sustainability within beach attractions. Mycoo (2014) mentions that various methods for combating environmental changes include physical planning policies, integrated coastal zone management, and infrastructure projects.

Overall, while the findings indicate a high level of implementation of sustainable practices, focusing on improving waste management systems could lead to even more effective environmental conservation efforts in the area. These findings align with Schwarz & Lukacs de Pereny Martens (2022), who indicate that the extent of sustainable practices implementation varies across regions and sectors. Despite some local governments taking significant steps to integrate sustainability into their policies, challenges such as financial constraints, lack of training, and inadequate infrastructure persist.

Operational and Management

Table 2. Descriptive statistics of the extent of implementation of sustainable practices in terms of operational and management

INDICATOR	MEAN	DESCRIPTION
1. Measures/ mechanisms are in place and are fulfilled to ensure the security of the visitors.	4.17	Highly Observed/Practiced
2. There is a fee system (e.g. environmental user's fee) implemented in the area that extends contribution to the environmental management/ sustainable activities.	4.33	Highly Observed/Practiced
3. The maintenance/ improvement/ rehabilitation activities are practiced.	3.93	Highly Observed/Practiced
4. Employees/ staff are trained by DENR, DOT, and other certified training providers to fulfill/ apply ecotourism activities.	3.70	Highly Observed/Practiced
GRAND MEAN	4.03	Highly Observed/Practiced

Table 2 displays the extent of implementation of sustainable practices in terms of operational and management, which are significant, obtaining a grand mean of 4.03, interpreted as highly observed/practiced. Specifically, the implementation of the fee system (e.g., environmental user's fee) in the area, contributing to environmental management and sustainable activities of the beach attraction, received a high mean score of 4.33. This suggests that, on average, sustainable practices are highly observed and practiced across the indicators mentioned in beach attractions in Buruanga, Aklan.

However, an indicator regarding the training of employees/staff received a mean score of 3.70, still categorized as "Highly Observed/Practiced." Although this score indicates that employees and staff are certified to fulfill and apply ecotourism activities through training provided by DENR and DOT, there may be room for improvement in the training process to further enhance the quality of services and products that promote sustainability within the beach attractions.

Overall, while all indicators reflect a high level of implementation of sustainable practices, focusing on further improving employee and staff training could potentially lead to even more effective environmental conservation practices in the area. These results are supported by the research of Palupiningtyas (2024), which indicates that the implementation of Green HRM practices, such as training on sustainable practices, positively influences employee engagement and organizational performance.

Socio-Cultural

Table 3. Descriptive statistics of the extent of implementation of sustainable practices in terms of sociocultural

INDICATOR	MEAN	DESCRIPTION
1. Local community involvement and engagement in the management of beach attractions significantly contribute to their sustainability.	4.23	Highly Observed/Practiced
2. Carrying Capacity is being implemented.	3.87	Highly Observed/Practiced
3. There is a feedback mechanism being implemented.	3.33	Observed/Practiced
4. Stakeholders are involved in decision-making processes related to coastal tourism development.	3.47	Observed/Practiced
5. Local community benefits economically and socially.	4.33	Highly Observed/Practiced
GRAND MEAN	3.85	Highly Observed/Practiced

Table 3 illustrates the extent of implementation of sustainable practices in terms of socio-cultural aspects, which was highly observed/practiced, with a grand mean of 3.85. The lowest observed indicator is the implementation of a feedback mechanism, with a mean score of 3.33. This suggests that while there is some implementation of feedback mechanisms, they may not be as prevalent or effective as other sustainable practices. Conversely, the highest observed indicator is that the local community benefits economically and socially, with a mean score of 4.33. This implies that the local community is significantly benefiting both economically and socially from the

management of beach attractions, indicating a strong integration of sustainable practices with community well-being.

Overall, the table indicates a high level of implementation of sustainable practices in managing beach attractions, with a grand mean score of 3.85, categorizing most indicators as "Highly Observed/Practiced." However, there are areas for improvement, particularly in establishing more effective feedback mechanisms. These findings align with the study of Yunus & Ahmad (2016), which suggests that integrating social and cultural aspects in Green Building Rating Tools aims to shift the focus from 'standards of living' to 'quality of life', indicating a move toward more holistic sustainability assessments.

Products and Services

Table 4. Descriptive statistics of the extent of implementation of sustainable practices in terms of product and services

INDICATOR	MEAN	DESCRIPTION
1. Tourism products and services are nature/ environment friendly.	4.47	Highly Observed/Practiced
2. The products and services are hazard and danger-free.	4.23	Highly Observed/Practiced
3. Tourism products and services are accredited per provisions of Rules and Regulations to govern the accreditation of guides, tours, lodges, and coastal facilities.	4.00	Highly Observed/Practiced
4. Coastal Tourism products are culture-based.	4.00	Highly Observed/Practiced
GRAND MEAN	3.34	Observed/ Practiced

In Table 4, we observe the extent of implementation of sustainable practices in terms of tourism products and services, as indicated by various indicators. The mean scores provide insight into the level of adherence to these sustainable practices. The lowest indicator in terms of mean score is "Coastal Tourism products are culture-based," with a mean score of $\bar{x} = 4.00$. While this score still falls within the "Highly Observed/Practiced" category, it is marginally lower compared to other indicators. On the other hand, the highest indicator in terms of mean score is "Tourism products and services are nature/environment-friendly," with a mean score of $\bar{x} = 4.47$. This indicates that there is a strong emphasis on incorporating environmentally friendly practices within tourism products and services.

Overall, it is evident that there is a commendable level of adherence to sustainable practices across the board, with all indicators falling within the "Highly Observed/Practiced" category. However, the slightly lower score for the indicator "Coastal Tourism products are culture-based" suggests that there may be room for further emphasis on cultural aspects within coastal tourism products. This could potentially enhance the overall sustainability and cultural authenticity of the tourism offerings.

In conclusion, the findings from Table 4 highlight the significant focus on environmentally friendly practices within tourism products and services. While this is commendable, it also underscores the importance of maintaining a balance between environmental sustainability and cultural authenticity, as indicated by the need for potential improvements in culture-based coastal tourism products. Such insights can guide future efforts toward enhancing the overall sustainability and quality of tourism experiences. These results are supported by the research of Rathie & Kaswan (2020), which suggests that the trend of using Green Trademarks indicates companies are distinguishing their products and services by emphasizing eco-friendly attributes, potentially enhancing their market presence and appeal to environmentally conscious consumers.

Bioecological

Table 5. Descriptive statistics of the extent of implementation of sustainable practices in terms of bioecological

INDICATOR	MEAN	DESCRIPTION
1. The tourism activities pose threats to biodiversity and the physical attributes of the coastal attraction site.	2.83	Observed/Practiced
2. The maintenance/ improvement/ rehabilitation activities are practiced.	3.80	Highly Observed/Practiced
3. The site is located near or within the habitat of critical biodiversity.	3.03	Observed/Practiced
4. Rules and regulations on gathering and collection of wildlife species is set per provision of RA 9147.	4.00	Highly Observed/Practiced
GRAND MEAN	2.73	Observed/Practiced

Based on Table 5, which outlines the extent of implementation of sustainable practices in terms of bioecological indicators, the lowest indicator, with a mean score of $\bar{x} = 2.73$, pertains to the threat posed by tourism activities to biodiversity and the physical attributes of coastal attraction sites. This suggests that while observed or practiced to some extent, there is room for improvement in mitigating the adverse effects of tourism on these sensitive ecosystems. Conversely, the highest indicator, scoring $\bar{x} = 4.00$, indicates that rules and regulations regarding the gathering and collection of wildlife species are highly observed and practiced as per the provisions of RA 9147. This suggests a strong adherence to legal frameworks aimed at protecting biodiversity and wildlife within the studied area.

In conclusion, while there are areas where sustainable practices could be further enhanced, such as mitigating the impacts of tourism on coastal biodiversity, there are also positive signs of effective implementation, particularly in terms of regulatory compliance regarding wildlife protection. Moving forward, efforts should focus on strengthening practices to address the identified threats while continuing to uphold and enforce existing regulations for the conservation of biodiversity in the area. This balanced approach is crucial for ensuring the long-term sustainability of the studied bioecological site. This finding highlights that tourism can support species conservation and protect traditional practices by providing alternative local sustainable development options, with very few local culturally important species threatened by tourism (Grignon & Morrison, 2015).

Facilities

Table 6. Descriptive statistics of the extent of implementation of sustainable practices in terms of facilities

INDICATOR	MEAN	DESCRIPTION
1. The current infrastructure development (facilities, walkways, etc.) adequately supports sustainable tourism at beach attractions in Buruanga, Aklan.	3.93	Highly Observed/Practiced
2. The design of the site and its structures/ facilities in harmony with the environment per provision of DAO-2009-09 such as tourism carrying capacity is considered in the design, density of the structure in comparison to total area(not too crowded, and took advantage of natural lights and vegetation.	4.23	Highly Observed/Practiced
3. The design of the coastal tourism site and its structure/facilities show cultural considerations.	4.00	Highly Observed/Practiced
4. The materials used in the structures and facilities are natural.	4.10	Highly Observed/Practiced
5. The materials used in the structures and facilities are locally sourced such as primary building materials like stone, earth, plants, and wood that are available locally are prioritized, use of recyclable products and materials are also prioritized, and tertiary materials that are man-made (i.e., artificial, synthetic, non-renewable) that are minimized, if not avoided.	4.10	Highly Observed/Practiced
6. There are conservation practices in the designing of structures and facilities.	3.77	Highly Observed/Practiced
7. The source of water is sustainable.	3.87	Highly Observed/Practiced
8. The site is practicing proper waste management such as for solid waste, there is already an MRF, and wastewater treatment facilities are installed and operational.	3.63	Highly Observed/Practiced
GRAND MEAN	3.95	Highly Observed/Practiced

From Table 6, it's evident that the extent of implementation of sustainable practices in terms of facilities at beach attractions in Buruanga, Aklan, is generally high, with all indicators falling under the category of "Highly Observed/Practiced." The highest indicator in terms of mean score is Indicator 2, with a mean score of ($\bar{x} = 4.23$). This indicator relates to the design of the site and its structures/facilities in harmony with the environment, taking into account factors such as tourism carrying capacity, density of structures, utilization of natural light, and integration with vegetation. The high score indicates that there is strong adherence to these principles in the design and development of coastal tourism sites in the area, suggesting a commendable effort towards sustainable development.

On the other hand, the lowest indicator in terms of mean score is Indicator 8, with a mean score of ($\bar{x} = 3.63$). This indicator pertains to proper waste management practices, including the presence of materials recovery facilities (MRFs) for solid waste and operational wastewater treatment facilities. While still rated as "Highly Observed/Practiced," the comparatively lower score suggests that there might be some room for improvement in waste management practices, emphasizing the importance of further attention and investment in this aspect to ensure holistic sustainability.

In conclusion, the findings indicate a generally positive picture of sustainable practices in facilities at beach attractions in Buruanga, Aklan. However, while certain aspects such as environmental harmony in design receive high scores, there remains a need to bolster waste management efforts to achieve even greater levels of sustainability. Addressing this gap could further enhance the overall sustainability of tourism activities in the area, contributing to long-term environmental conservation and community well-being. The result supports that in the context of waste management, local governments have established regulations and provided guidelines, but full compliance and effective infrastructure remain issues to be addressed (Pujiyanto & Kusumaningrum, 2023).

3.2 Challenges Encountered

Table 7 shows the challenges encountered in implementing sustainable practices in coastal areas at Buruanga, Aklan. The lowest indicator ($\bar{x}=1.93$) concerning wildlife disturbance implies that this aspect might not be a pressing concern for stakeholders, potentially indicating effective management strategies in place to mitigate such disturbances. Conversely, the highest indicator ($\bar{x}=3.30$) highlights the significant hurdle of altering established practices towards more sustainable alternatives. This suggests a need for targeted interventions and strategies to overcome resistance to change and foster a culture of sustainability within the community.

Table 7. Descriptive statistics of the challenges in implementing sustainable practices

INDICATOR	MEAN	DESCRIPTION
1. The lack of proper waste management facilities and practices is a significant challenge impacting the sustainability of beach attractions in Buruanga, Aklan.	3.17	Experience/Encountered
2. Economic barriers for businesses to adopt sustainable practices	3.13	Experience/Encountered
3. Inadequate infrastructure poses a significant challenge to the sustainable management of beach attractions in Buruanga, Aklan.	2.87	Experience/Encountered
4. Difficulty in changing existing practices.	3.30	Experience/Encountered
5. Limited collaboration among stakeholders presents a challenge for achieving sustainable management of beach attractions in Buruanga, Aklan.	2.97	Experience/Encountered
6. Less involvement and participation of the community towards sustainable practices.	2.30	Somewhat Experience/Encountered
7. No accredited ecotour guide, ecotours, ecolodge, and ecotour facilities in the area.	2.47	Somewhat Experience/Encountered
8. Products in the area are not made of locally sourced materials.	2.33	Somewhat Experience/Encountered
9. The wildlife in the site is disturbed.	1.93	Not Experienced/Encountered
10. Medical facilities are not accessible and available within the ecotourism site for tourists and locals.	2.93	Experienced/Encountered
11. There are no available signage, placards, warning signs or similar posting in the area for precaution and advice.	2.73	Experienced/Encountered
GRAND MEAN	2.74	Experience/Encountered

In conclusion, while challenges such as wildlife disturbance appear to be less prevalent, the difficulty in transitioning to sustainable practices emerges as a critical obstacle in the context of beach attractions in Buruanga, Aklan. Addressing this challenge requires comprehensive strategies that promote awareness, education, and collaboration among stakeholders to foster a more sustainable and resilient environment for ecotourism in the region. The participants concurred that coastal tourism development often leads to environmental degradation, such as the decline in biodiversity and the destruction of natural habitats (Hengky, 2019).

3.3 Opportunities

Table 8. Descriptive statistics of the opportunities in implementing sustainable practices

INDICATOR	MEAN	DESCRIPTION
1. Stronger collaboration between government, tourism industry, and local communities	3.93	Highly Experienced/ Encountered
2. Opportunities exist for enhancing community-based tourism initiatives that promote local culture and traditions at beach attractions in Buruanga, Aklan.	3.97	Highly Experienced/Encountered
3. Increased awareness campaigns and education programs	3.80	Highly Experienced/Encountered
4. There are opportunities for revising or implementing policies that could better preserve the natural environment of beach attractions in Buruanga, Aklan.	3.93	Highly Experienced/Encountered
5. Development of eco-friendly tourism activities and infrastructure	4.03	Highly Experienced/Encountered
GRAND MEAN	3.93	Highly Experienced/Encountered

In Table 8, opportunities for implementing sustainable practices in coastal areas at Buruanga, Aklan are outlined. The lowest indicator in the table is "Increased awareness campaigns and education programs," with a mean score of $\bar{x} = 3.80$. This suggests that while respondents generally perceive this aspect positively, there may be room for improvement in terms of the effectiveness or reach of awareness campaigns and education programs in promoting sustainable practices. On the other hand, the highest indicator is "Development of eco-friendly tourism activities and infrastructure," with a mean score of $\bar{x} = 4.03$. This indicates that respondents highly agree or have extensive experience with the potential for developing eco-friendly tourism activities and infrastructure. This suggests that there is a strong recognition of the importance of environmentally sustainable practices in the tourism sector.

In conclusion, the results highlight significant potential for enhancing sustainable practices in Buruanga, Aklan's tourism industry. While there is already a high level of collaboration between the government, the tourism industry, and local communities, there is an opportunity to further strengthen awareness campaigns and education programs. Additionally, the emphasis on developing eco-friendly tourism activities and infrastructure underscores a growing awareness and commitment to environmental sustainability within the region's tourism sector. Overall, these findings provide valuable insights for policymakers, stakeholders, and practitioners in fostering sustainable tourism development in Buruanga, Aklan. This result supports that the implementation of a green economy can enhance social solidarity within communities by promoting environmentally friendly practices that provide equitable economic and social benefits (Sulistiowati and Yasin, 2023).

3.4 Best Practices and Policy Recommendations

Table 9. Descriptive statistics of the best practices and policy recommendations

INDICATOR	MEAN	DESCRIPTION
1. Implementing regular beach clean-up drives and waste recycling initiatives is an effective best practice for ensuring the sustainability of beach attractions in Buruanga, Aklan.	4.40	Highly Experienced/Encountered
2. Promoting community-based tourism activities that highlight local culture and traditions is recommended.	3.97	Highly Experienced/Encountered
3. Establishing eco-friendly infrastructure and facilities (e.g., renewable energy, environmentally friendly amenities) is recommended.	3.83	Highly Experienced/Encountered
4. Developing and enforcing policies that promote responsible tourist behavior and environmental conservation.	3.77	Highly Experienced/Encountered
5. Encouraging active collaboration and partnerships among stakeholders (local government, businesses, and communities).	3.77	Highly Experienced/Encountered
6. Permits and licenses are regularly renewed.	4.43	Highly Experienced/Encountered
7. Constant monitoring and evaluation of various activities (e.g. infrastructure development, landscaping, road accessibility)	3.70	Highly Experienced/Encountered
8. Encourage participation and engagement of the community by conducting festivals, coastal clean-up, and tree planting among others.	3.77	Highly Experienced/Encountered
9. Locally sourced raw materials are available and utilized for the products.	3.70	Highly Experienced/Encountered
10. Seminars, training, and workshops leading to accreditation of Eco tour-guide, Eco tours, Ecolodge, and Eco tour facilities are attended both by the owner/managers and employees.	3.80	Highly Experienced/Encountered
11. Reporting to the authority concerned if there are unlawful/illegal activities happening in the tourism sites.	3.83	Highly Experienced/Encountered
12. Conservation of biodiversity and wildlife is observed.	4.10	Highly Experienced/Encountered
13. There are available signage, placards, warning signs, and similar postings in the area for precaution and advice.	3.70	Highly Experienced/Encountered
GRAND MEAN	3.91	Highly Experienced/Encountered

Table 9 presents the best practices and policy recommendations for sustainability in coastal areas at Buruanga, Aklan. The lowest indicator, with a mean score of $\bar{x} = 3.70$, is a tie between three practices: constant monitoring and evaluation of various activities, encouraging the participation and engagement of the community, and ensuring locally sourced raw materials are available and utilized for products. These aspects seem to be areas where there might be room for improvement or where the implementation might not be as widespread as other practices.

On the other hand, the highest indicator, with a mean score of $\bar{x} = 4.43$, is the regular renewal of permits and licenses. This indicates that this practice is highly observed or practiced among the stakeholders involved in beach

sustainability efforts in Buruanga, Aklan, suggesting a robust regulatory framework or strong adherence to administrative requirements in this aspect.

In conclusion, while the overall mean score of the best practices and policy recommendations is $\bar{x} = 3.91$, indicating a generally high level of experience or encounter across the board, there are still areas for improvement, particularly in aspects such as constant monitoring and community engagement. However, the consistently high scores across most indicators suggest a strong foundation for sustainable beach management in the region, with regulatory compliance being a notable strength. Continued efforts to address areas of improvement while building upon existing strengths can further enhance the sustainability of beach attractions in Buruanga, Aklan. This result is supported by the research of Hall (2020), which stated that signs serve as educational tools, informing tourists about sensitive ecosystems, such as coral reefs, and the importance of conservation efforts.

These findings were supported by one respondent:

"When it comes to cleaning the surroundings is only us here the owners of each resort at their staff clean every day, like cleaning the sand, and throwing of trash especially if we have a day tour, we would clean it immediately, but our problem is when it comes to trash bins, we do not have what we say an area or place that is allocated by the municipal office for the trashes, the MRF particularly, so we would just pile it at the backyard that is out of sight of the guests and we will wait for it to be collected by the municipality."

Another respondent added:

"If in our resorts ma'am especially on the beach areas we do not have an MRF assigned but it is visited by our trucks and collected, there are even cases they do not put their trash already, that is why we want to implement it here that they should have an MRF for the resort or homestay, because the trashes scatters especially during southwest monsoon, trashes gets all over the sea and beaches."

4.0 Conclusion

The study reveals generally positive implementation of sustainable practices, especially in terms of policies, where there is a strong focus on legal compliance of permits and licenses and cultural heritage preservation. Moreover, in regards to operations and management, well-implemented fee systems to support environmental initiatives and security measures for visitors are also practiced. Regarding the bioecological aspect, effective regulations on wildlife gathering and collection are strictly followed. Additionally, in terms of products and services together with facilities, eco-friendly products and accredited services, as well as environmentally friendly design for facilities using locally sourced materials, are observed. However, despite these positive practices, respondents believed that there are areas that need improvements, starting with waste management, where full implementation across all coastal areas is needed. Moreover, employee training also needs improvement, especially concerning ecotourism activities where sustainable practices must be properly observed to protect all biodiversity in the area.

In addition, implementing sustainable practices in coastal areas faces challenges, particularly in changing existing practices, waste management, and minimizing wildlife disturbance. These challenges are likely due to limited intervention time for adjustments and a lack of proper waste management facilities. However, the minimal observed disturbances to wildlife suggest that efforts are being made to mitigate these challenges.

As for opportunities, the findings indicate promising opportunities to advance sustainable practices in coastal attractions in the area. The existing infrastructure made with eco-friendly and local materials provides a strong foundation for developing sustainable tourism activities. Moreover, a strong collaboration between government, the tourism industry, and local communities fosters a supportive environment for implementing sustainable practices. However, there are areas for improvement, such as education and awareness. Increased awareness campaigns and educational programs are crucial to empower stakeholders with the knowledge and skills to effectively implement sustainable practices. To address these, the Department of Environment and Natural Resources, Department of Tourism, and Local Government Unit should collaborate to strengthen waste management systems, update policies, and increase awareness. Educated stakeholders can then share their knowledge with others, creating a ripple effect that drives long-term success to whole coastal areas.

The study highlights both strengths and areas for improvement regarding best practices and policy recommendations in coastal areas. While there is a strength in legal compliance, with regular permit and license renewal indicating a strong focus on legal operations within the coastal attraction site, constant monitoring and evaluation need to be strengthened to track the effectiveness of implemented practices. Additionally, encouraging community participation is needed for better strategies to involve local communities in sustainable practices. The role of tourists, resort owners, and local communities is also crucial in supporting sustainable practices. Overall, despite the need for improvement in some areas, there is generally positive implementation of best practices and policy recommendations.

In conclusion, the findings indicate a commitment to sustainable practices in the coastal areas of Buruanga, Aklan. Addressing the weaknesses can leverage the existing strengths to significantly enhance sustainable practices in these coastal areas, contributing to a more environmentally responsible and economically viable tourism industry.

5.0 Contributions of Authors

This study is initiated and completed with the help of my co author.

6.0 Funding

This work I funded by the author.

7.0 Conflict of Interests

The author declares no conflict of interest.

8.0 Acknowledgment

With a profound sense of gratitude, I embark on expressing my deepest appreciation to those who have played a significant role in the successful completion of this research endeavor.

I begin by expressing my deepest gratitude to the Almighty God, the source of all wisdom and strength. Throughout this journey, Your divine guidance has been my compass and Your grace my fuel. Without Your blessings, this accomplishment would not have been possible.

I extend my sincere appreciation to Aklan State University, for providing me with the academic foundation and nurturing environment that laid the groundwork for this research endeavor. The university's commitment to excellence has instilled in me the values of critical thinking, perseverance, and a thirst for knowledge, all of which proved invaluable in completing this project.

My heartfelt gratitude goes to Dr. Porferio S. Bangcaya, our esteemed campus administrator. Your unwavering support and encouragement throughout my academic journey have been instrumental in my success.

I would like to extend my heartfelt thanks to my adviser, Dr. Tonylen S. De Jose, for his invaluable guidance, encouragement, and expertise throughout this process. Your constructive criticism, and unwavering support have been the cornerstones of this research project. Thank you for sharing your wisdom and for believing in my ability to succeed.

My gratitude also extends to the Local Government Unit (LGU) of Buruanga, particularly the Tourism Office. Their assistance and cooperation in facilitating research access and providing valuable insights into the local tourism landscape were essential to the completion of this project.

My deepest gratitude extends to the key informants of this research. Your willingness to share your experiences, knowledge, and perspectives played a pivotal role in enriching the content of this study. Your valuable contributions have provided a deeper understanding of the intricacies of tourism in the region.

To my wonderful work colleagues, thank you for your understanding and support throughout this journey. Your willingness to cover for me during busy periods and your encouraging words have been greatly appreciated. I am grateful to be part of such a supportive and collaborative work environment.

A special thank you to Mr. Marlo L. Samuya, my unwavering source of love and support. Your constant encouragement, unwavering belief in me, and willingness to shoulder burdens during challenging times have been my anchor. Your patience and understanding throughout this endeavor have been invaluable. Your belief in my potential and your willingness to go the extra mile have provided me with the motivation I needed to persevere during challenging times.

To my furbabies, Rabi, Simba, Dos, Nalo and Blaire my adorable stress relievers, thank you for bringing joy and laughter into my life. Your unconditional love and playful antics provided much-needed breaks and a source of comfort during the demanding moments of this research journey.

Finally, I am eternally grateful to my family, the unwavering pillars of my life. Your unwavering love, unwavering support, and unwavering belief in me have been the driving force behind my achievements. Thank you for celebrating my successes, offering a shoulder to cry on during setbacks, and always reminding me of my capabilities. This accomplishment is as much yours as it is mine.

Thank you to all of you. Your contributions, both big and small, have played a significant role in shaping this research paper and bringing it to fruition.

9.0 References

- Creswell, J.W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. 4th ed. Thousand Oaks, California, SAGE Publications.
- Garcia, R. A., & Santos, M. C. (2018). Sustainable Coastal Tourism: Perspectives and Experiences. MDPI.
- Grignon, J., & Morrison, C. (2015). Interdependencies Among Traditional Resource Use Practices, Sustainable Tourism, and Biodiversity Conservation: A Global Assessment. *Human Dimensions of Wildlife*, 20(4), 327-341. doi.org/10.1080/10871209.2015.1037939
- Hengky, S. H. (2019). Challenges sustainable coastal tourism on Panjang Island. *Journal of Aquaculture & Marine Biology*, 8(1), 259-267. doi.org/10.15406/jamb.2019.08.00259
- Jones, P., & Wang, D. (2020). *Tourism and Water: Interactions and Implications*. Channel View Publications.
- Palupingtyas, D. (2024). Green HRM: Strategies for Sustainable Business Practices and Employee Engagement. *The Developing Human Frontier Journal of Psychology*, 2(3), 1-9. doi.org/10.62207/dhfpj238
- Pujianto, R., & Kusumaningrum, A. E. (2023). Environmental Health-Based Medical Waste Management: Implementation of Local Government Responsibilities in Central Java. *SDGs (Sustainable Development Goals)*, 11(11), 1892-1902. doi.org/10.55908/sdgs.v11i11.1919
- Rathi, R., & Kaswan, M. S. (2020). Green Lean Six Sigma for sustainable development: Integration and framework. *Environmental Impact Assessment Review*, 82, 106396. doi.org/10.1016/j.eiar.2020.106396
- Smith, J., Johnson, M., & Williams, S. (2019). *Tourism and the Environment: A Sustainable Relationship?* Routledge.
- Yunus, R. M., & Ahmad, S. S. (2016, June 1). Underlying Concerns of Socio-cultural Aspects in Green Building Rating Systems towards Improving Quality of Life. In *Procedia - Social and Behavioral Sciences*, Vol. 216, pp. 472-477. doi.org/10.1016/j.sbspro.2016.05.23

The Phenomenon of Teachers' Burnout: Its Implication for Job Satisfaction

Joanna Mae L. De la Cruz*, Denmark S. Macalisang
Southern Capital Colleges, Oroquieta City, Philippines

*Corresponding Author Email: joannadlc30@gmail.com

Dated received: May 12, 2024

Date revised: June 15, 2024

Date accepted: June 21, 2024

Originality: 96%

Grammarly Score: 99%

Similarity: 4%

Recommended citation:

De la Cruz, J.M., & Macalisang, D. (2024). The phenomenon of teachers' burnout: its implication for job satisfaction. *Journal of Interdisciplinary Perspectives*, 2(8), 84-91. <https://doi.org/10.69569/jip.2024.0203>

Abstract. Teachers play an indispensable role in the lives of children; however, in recent years, the demands of teaching have increased significantly. This study aims to determine the feelings of burnout among secondary public-school teachers in the District of Aloran, Division of Misamis Occidental. It examines the elements contributing to teacher burnout, its impact on job satisfaction, and the coping mechanisms teachers use to mitigate it. Informant teachers, who participated in one-on-one interviews, were employed during the 2023–2024 academic year and were identified as experiencing burnout based on the results of the Maslach Burnout Inventory. A transcendental phenomenological approach and a qualitative study design were employed. The findings reveal that concerns about academics, administration, and workload demands significantly contribute to teacher burnout, affecting their well-being and hindering their professional growth. To manage burnout, teachers utilize coping strategies such as seeking social support and engaging in self-care practices. The study proposes program interventions, including upgrading and continuing current programs that support and enhance teacher well-being, along with offering competitive compensation and benefits. These findings suggest that a holistic approach addressing equity and inclusion, enhancing teacher professional development, and promoting cooperation among stakeholders will transform the school system, providing high-quality, relevant, and inclusive education.

Keywords: Burnout; Coping strategies; Job satisfaction; Program interventions; Transcendental phenomenology.

1.0 Introduction

Education, a cornerstone of societal growth and individual development, heavily depends on teachers' performance, dedication, and well-being. However, a significant challenge that threatens the effectiveness of these teachers is the phenomenon of teacher burnout. This burnout is a global issue pervasive within the education sector, impacting the teachers' well-being and overall job satisfaction (Agyapong et al., 2022). Broadly described, teachers' burnout incorporates physical, emotional, and mental exhaustion from continuous exposure to work-related stress (Madigan et al., 2023). Feelings of depersonalization often characterize it as reduced personal accomplishment and emotional exhaustion.

Job satisfaction, a multifaceted concept, refers to the contentment or fulfilment employees derive from their work. Freudenberger (1974), as cited in Fontes (2020), observed that teachers at a mental health clinic lose interest and commitment. This posits that burnout, if left unchecked, could lead to a significant decrease in the quality of education.

Burnout, a severe outcome of chronic occupational stress, has been linked to various job withdrawal behaviours, including absenteeism, intention to quit, and turnover, particularly in high-stress professions like teaching. Teachers often work in high-stress environments, which can impact their physical and mental health and lead to

burnout, affecting their performance and potentially impeding students' academic progress. It is said that teachers at all levels are susceptible to burnout due to different factors (Shaheen & Mahmood, 2015). This burnout may tend to show up as disengagement and demotivation (Hussein et al., 2021) and decreased personal success and emotional exhaustion (Xie et al., 2022). This is evident as Freudenberger (1974), as cited in Fontes (2020), observed that teachers at a mental health clinic lose interest and commitment, which clearly posits that burnout if left unchecked, could potentially lead to a significant decrease in the quality of education. Hence, it becomes indispensable to address burnout proactively, implementing strategies to manage occupational stress and promote job satisfaction, thereby enhancing the overall effectiveness and productivity of the educational ecosystem.

The recently conducted survey by the Movement for Safe, Equitable, Quality, and Relevant Education (Nicholls, 2021) revealed a general dissatisfaction among public school teachers with the Department of Education's response to their needs. This sentiment is mirrored in Labastida's (2021) findings, which highlighted the exhaustion experienced by teachers due to their immense workloads. This exhaustion is also evident among teachers in Misamis Occidental, as highlighted by the study conducted by Jala & Macalisang (2024), which concluded that public school teachers in the region encounter various challenges in conducting in-person classes, such as excessive workload, work-related difficulties, and behavioural problems among students, and issues with students' literacy skill development. It revealed that teachers in Misamis Occidental had exceeded the prescribed optimum weekly workload, which signifies that compound ancillary functions of teachers are one of the struggles experienced by schools in the province (Embang & Ceballos, 2022). Due to these pressures, public school teachers experienced emotional exhaustion and low self-efficacy, which ultimately led to burnout and the primary hindrance to their professional development (Villarejo et al., 2022) which was said are already prevalent emotions experienced by teachers in the Philippines, particularly to those who are new to the profession (Jomoad et al., 2023). In the current teaching environment, it has been observed that these difficulties are not isolated incidents but rather pervasive issues. These issues significantly contribute to teacher burnout and job dissatisfaction, underscoring the urgency for effective strategies and interventions to mitigate these challenges and improve the overall teaching and learning environment.

In response to these pressing concerns, this study aimed to explore the phenomenon of teacher burnout and its potential effects on job satisfaction. The findings will contribute to targeted strategies and interventions to improve teacher well-being and retention. The insights will inform the development of policies and programs to enhance education quality and the health of secondary school teachers, creating a healthier learning environment.

2.0 Methodology

2.1 Research Design

The study utilized the qualitative research method, precisely the transcendental-phenomenological approach. Phenomenology is the study of conscious knowledge related to the expression of what an individual has perceived, sensed, and known as a result of their experience (Moustakas, 1994). In transcendental phenomenology, the researcher is given the ability to comprehend the significance of the meanings that the participants attach to their experiences of an identifiable occurrence (Moustakas, 1994). Using this, the researcher describes the burnout experiences among secondary public school teachers in the Aloran district, a division of Misamis Occidental, including its implications for job satisfaction. This makes it possible to provide solutions to address the issue.

2.2 Research Locale

The study was conducted in the District of Aloran, Division of Misamis Occidental. These schools comprised Aloran Trade High School, Taguanao Integrated School, Mitazan Integrated School, Caputol Integrated School, Conant Integrated School, and Ozamis Integrated School. These schools were chosen for this study's setting due to their unique characteristics that align with the research objectives. Given the schools' diverse teachers and broad educational offerings, these represent an environment where teachers may face varying degrees of stress and challenges, making it an ideal context for studying teacher burnout.

2.3 Research Participants

The study involved six (6) participants who have agreed to become part of the study, belong to the secondary teachers at Aloran District, and have demonstrated signs of burnout based on the Maslach Burnout Inventory.

They were employed, served as regular/full-time teachers for at least three years, and had no administrative pending cases. The sample size was determined using the recommendations of Creswell (1998), which indicated five (5) to twenty-five (25) individuals for a phenomenological study, and Morse (1990), which suggested at least six (6).

2.4 Research Instrument

The researcher played an essential role as the primary instrument in conducting the study. In addition, an interview guide was utilized. This guide was structured into four essential parts: introduction, opening questions, core questions, and concluding questions. Before the interview process, the Maslach Burnout Inventory was administered to all secondary public school teachers in the Aloran district. This inventory, consisting of 22 questions, measures three key dimensions: emotional exhaustion, depersonalization, and personal accomplishment. The results of this inventory aided in identifying the study's informants. The interview guide underwent a process of validation and reliability checking to ensure their efficacy in collecting accurate and meaningful data. This process involved face validity checks, which assess whether the instruments appear effective in measuring what they are intended to measure, and reliability tests, which examine the consistency of the instruments. Experts assigned were graduates of the Doctor of Philosophy concentrating in Psychology, Guidance and Counseling Education. In addition, one validator was involved in the study who currently finished PhD program in Research and Evaluation to ensure the credibility and the quality of the findings obtained from the study.

2.5 Data Gathering Procedure

This study used specific steps which involved (1) forwarding the letter of recommendation signed by the administrative director and the school dean of the graduate studies of Southern Capital Colleges to the Schools Division Superintendent (SDS), (2) signing approval from the SDS was forwarded to the school's principal, guidance counsellor, and teachers who served as informants of the data gathering, (3) signing of informed consent among participants, (4) in-depth interview employing the dual method of data recording which were note taking and voice recording, and (5) doing thematic analysis which includes coding, categorization, and interpretation of the fundamental meanings of the phenomenon.

2.6 Analysis of Data

Coding, categorization, and interpretation of the fundamental meanings of the phenomenon were the researcher's methods of data analysis. From the informants' responses, the researcher identified the critical statements and created core meanings. In order to better understand the description of the participants' lived experiences, the researcher clustered all of the core meanings and created cluster themes. The researcher developed emergent themes that illustrated the answers to the study's sub-questions following extensive reading and analysis. Additionally, the six-phase thematic analysis developed by Braun and Clarke (2013) was applied to the qualitative data analysis of this study.

2.7 Ethical Considerations

This research study followed ethical guidelines such as giving informed consent among the participants stating the study's goals, benefits, and drawbacks. Meanwhile, the security and anonymity of the participants were guaranteed. Furthermore, the assurance of the research's validity and reliability was emphasized through thorough literature reviews, fieldwork observations, proper documentation, and passing the quality, authenticity, accuracy, and integrity requirements.

3.0 Results and Discussion

The transcripts of the teachers' interview responses were examined, analyzed, and assigned codes or labels for interpretation. The formation of the themes was the outcome of interpreting the teachers' answers to each question and formulating meanings. Figure 1 was presented to show the resulting themes of the study.

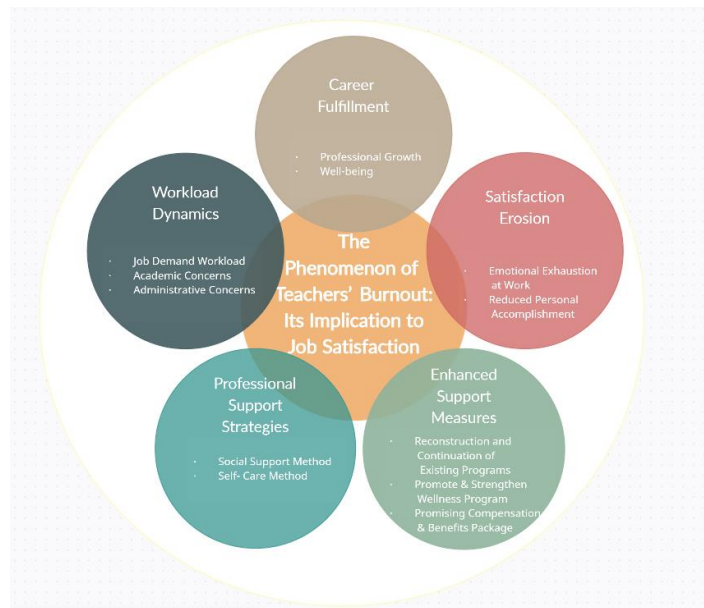


Figure 1. Resulting themes of the study

Theme 1: Workload Dynamics

Participants in the study revealed that the demands of their professions brought on burnout. Workloads increased, hours worked, and personal time decreased due to factors such as being assigned to teach many unexpected subjects or courses unrelated to their expertise. Burnout is largely caused by physical and mental tiredness, exacerbated by the pressure to perform well in all subjects, keep up with innovations, and maintain a work-life balance. This was evident when participants remarked the following:

"Making preparations because I teach both ESP and MAPEH to students in grades 7 through 10" SP1:PS2: SS4

"Doing workload extracurricular like being the sports coordinator" SP1:PS2: SS4

"It's when I must adjust to my new teaching load this school year. I feel very anxious about my load because I'm overthinking that I can't successfully deliver the lesson to my students. There is misalignment of teaching load" SP1:PS4: SS8

"I They assigned me a research subject, which surprised me because I had already prepared study materials for my prior subject, which is actually my area of expertise" SP1:PS6: SS13

These results were evident in the studies of Villarejo et al. (2022) and Xie et al. (2022), which stated that the demands of their jobs cause some burns experienced by the teachers. As a result of this increasing workload, burnout is thought to manifest as emotional tiredness, depersonalization, and a diminished sense of personal success (Agyapong et al., 2022). This was reflected in some issues on the administration's communication and leadership styles, which the study has found to affect teachers' well-being significantly. This was evident in participants stating they experienced humiliation and lack of support and guidance from the administration. This severe lack of administrative support and subpar administrative attitudes and behaviours greatly influenced burnout among teachers (Agyapong, 2022).

Furthermore, academic concerns were also seen as one of the causes of teachers' burnout which was clearly explained that teachers may experience emotional tiredness and a diminished sense of personal success, which can contribute to burnout if they make a significant effort to engage their students' but feel that their efforts are not being returned (Xie et al., 2022). This also includes students' behavioural issues and inadequate reading skill development, as evident in Jala's (2023) study.

Theme 2: Satisfaction Erosion

This study revealed that burnout has adversely affected teacher job satisfaction, evident in emotional exhaustion at work, with feelings of inefficiency, decreased socialization, low energy, no concentration, irritation, and impatience. This was evident when participants remarked the following:

"You may feel as though you are no longer productive because of psychological distress" SP2:PS1: SS15

"When one of your students misbehaves, you become quickly irritated and reprimands them" SP2:PS1: SS17

"My ability to concentrate is gone" SP2:PS1: SS16

"I don't like to engage with my other colleagues" SP2: PS5:SS25.

"I was disheartened with myself" SP2:PS6:SS27

"I really find it hard to wake up every morning thinking that I'm about to face my students with the reality that the subject matter I'm going to teach is not my specialized subject" SP2: PS4:SS23

"Since I wasn't able to prepare my lesson, I just let them copy" SP2:PS2:SS24

"All I wanted to do was sleep" SP2:PS6: SS27

Bravo et al. (2021) state that most public-school teachers frequently experience emotional tiredness. These resulted in a decline in teachers' motivation and general well-being (Kariou et al., 2021), engagement (Skaalvik et al.; S., 2020), feelings of irritation towards students (Frenzel, 2021), and discouragement towards self (Agyapong, 2022).

Moreover, the study found that burnout could impact decreased professional efficacy. This is related to teachers feeling unmotivated to do their tasks and even aiming for professional development. Teachers already hold a negative opinion of themselves, giving them the broader perception that they no longer perform valuable and significant jobs (Xie et al., 2022). These feelings have been evident in Maslach (1981) and Freudenberg's Theory of Burnout (1974), which they categorized as diminished professional success, disengagement from professional activities, cynicism, and disengagement from work.

Theme 3: Career Fulfillment

Having said that the study resulted having effects on teachers' professional growth, thus this explained teachers decline of interest in and participation in professional development activities. Teachers experiencing burnout struggled to find opportunities for growth and education. Additionally, burnout hindered their ability to learn new skills and information, making it challenging to focus, retain information, and engage in deep learning (Agyapong et al., 2022). Participants said:

"Weary of learning new things and of upgrading oneself" SP3:PS3: SS32

"no mastery of subject" SP3: PS6:SS38

"I intended to push myself further and accomplish something that would make me proud, but it's already too exhausting" SP3:PS6: SS39

"I don't get along with my coworkers" SP3:PS4: SS34

"I fake smiles" SP3:PS4: SS35

"My friendship with my coworker suffered as a result, and I would much rather be doing something else than chatting to or with them" SP3:PS5: SS37

"I feel bad about not being a more effective teacher" SP3:PS6: SS41.

Well-being may suffer significantly from teacher burnout. Because they find it impossible to separate themselves from the demands of their employment, teachers who suffer burnout may find it difficult to be empathetic and compassionate toward others. Their obsession with their jobs severely impacts their inability to unwind, uphold relationships, and take care of themselves – discontent results from burnout and a diminished sense of purpose and fulfilment in one's line of work. Additionally, burnout can affect a person's connections with friends, family, and coworkers, resulting in social disengagement and isolation. The absence of support further impacts their general well-being. This experience is undoubtedly what teachers in the Philippines are experiencing, which can be supported by the study of Richardson et al. (2023), which suggested a robust inverse association between teachers' psychological well-being- and burnout at work.

Theme 4: Burnout Coping Strategies

Teachers are an ideal representation of the various coping strategies people use to lessen burnout, according to Lazarus and Folkman's Transactional Theory of Stress and Coping (1984). Teachers used several coping strategies to lessen their feelings of burnout. Teachers' job satisfaction and risk of burnout can be significantly impacted by the coping mechanisms they use when faced with stress at work. According to the result, seeking social support is one of the most common coping strategies teachers have employed to alleviate feelings of burnout. To lessen teacher burnout, it is essential to ask friends, family, and coworkers for social support. It provides a safe environment for emotional expression, diverse viewpoints, and emotional support. Non-teaching friends and family give new perspectives, a vacation from work, and a valued confidant, while colleagues offer empathy, counsel, and workable solutions. Participants emphasized:

"sharing your burnout to your friends" P4:PS3: SS45

"I share my plans and resentments with my husband" SP4:PS4: SS48

"I talk to my colleagues about my situation and ask for pieces of advice" SP4:PS4: SS49

"I could really talk to my coworkers" SP4:PS5: SS52

"I drink water or coffee" SP4:PS1:SS42

"I make myself look good" SP4:PS1:SS42

"I visit beaches or travel to new places" SP4:PS2:SS43

"I do triangle breathing" SP4:PS3:SS44

"I do pray" SP4:PS4:SS47

"Listening to worship songs" SP4:PS6:SS54

"I love hugging babies" SP4:PS6:SS54

"I also pray" SP4:PS6:SS54

To avoid burnout, teachers should practice self-care by giving themselves emotional and physical support. This covers things like sipping water or coffee, eating a balanced diet, taking in the scenery, enjoying music, engaging in hobbies, practising mindfulness or meditation, and turning to spiritual practices for support. These techniques support teachers' ability to remain focused, handle stress, fall in love with teaching, decompress, express themselves, find joy, and foster personal development. Prayer and spiritual pursuits provide guidance and comfort, while mindfulness and meditation help people find inner peace and perseverance amid trying circumstances. Doing such, teachers achieve more personally and experience less burnout (Calumno et al., 2022).

4.0 Conclusion

Public school secondary teachers reveal a complex landscape characterized by multifaceted challenges and crucial support needs. Workload dynamics emerge as a primary concern, involving job demand, academic worries, and administrative burdens, all of which contribute to the strain on teachers' time and resources. Concurrently, satisfaction erosion is evident, marked by diminished personal accomplishment and emotional exhaustion, underscoring the toll these demands take on teachers' morale and mental well-being. Despite these challenges, the theme of career fulfilment signifies the inherent drive for growth and well-being among educators, emphasizing the importance of nurturing their professional development and overall happiness. Furthermore, the identification of professional support strategies, including self-care and social support methods, underscores the significance of holistic support systems in bolstering teachers' resilience and mitigating burnout. In conclusion, addressing these themes holistically is paramount in creating a conducive environment that supports the flourishing of secondary public school teachers, ensuring their continued dedication to student success and overall well-being.

5.0 Contributions of Authors

The authors confirm that they contributed equally to all aspects of this work. The researcher conducted the primary investigation and analysis, while the adviser provided guidance, mentorship, and critical feedback throughout the study. All authors have reviewed and approved the final version.

6.0 Funding

This work received no specific grant from any funding agency.

7.0 Conflict of Interests

The author declares no conflict of interests about the publication of this paper.

8.0 Acknowledgment

The researcher extend heartfelt gratitude to all who have contributed to this writing journey, from those who burned the midnight oil to those who offered support and encouragement. Special thanks to Almighty for wisdom and strength, and to Dr. Propitas Lituánias and Dr. Denmark Macalisang for invaluable guidance. Appreciation is also extended to the panel of evaluators, school officials, teachers, and family members for their support and assistance throughout the research process. A profound thank you is reserved for the spouse, Math Carlo S. Sauro, for endless love and inspiration. All praises are offered in the Glory of the Almighty God. TO GOD BE ALL THE GLORY!

9.0 References

- Agyapong, B., Obuobi-Donkor, G., Burbach, L., & Wei, Y. (2022). Stress, Burnout, Anxiety and Depression among Teachers: A Scoping Review. *International Journal of Environmental Research and Public Health*, 19(17), 10706. <https://doi.org/10.3390/ijerph191710706>
- Belinda A., Gloria Obuobi-D., Lisa B., and Yifeng W. (2022) Stress, Burnout, Anxiety and Depression among Teachers: A Scoping Review. doi: 10.3390/ijerph191710706
- Bravo, A. K., Buenaflor, N. B., Baloloy, J. I., Guarte, L., Osinaga, A. M., & Salartin, A. Amidst the COVID-19 Pandemic: The Job Burnout and Job Satisfaction of Public School Teachers in the Philippines.
- Calumno, F. J. V., Yazon, A. D., Tan, C. S., Bandy, M. M., & Buenvinida, L. P. (2022). Regression of Self-care Practices on Reducing Burnout among Public High School Teachers of Laguna, Philippines. *Organization and Human Capital Development*, 1(2), 76-90. <https://doi.org/10.31098/orcaddev.v1i2.1092>
- Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, CA: Sage Publications.
- Daniel J. Madigan, Lisa E. Kim, Hanna L. Glandorf, Owen Kavanagh (2023). Teacher burnout and physical health: A systematic review, *International Journal of Educational Research*, Volume 119, <https://doi.org/10.1016/j.ijer.2023.102173>.
- Embang, S., Jumamil, V. B., Cabang, L., & Ceballos, R. (2022, May). Teachers' Workload and Work Environment: Inference to NAT Performance of Senior High School Learners in Misamis Occidental.
- Fontes, F. F. (2020). Herbert J. Freudenberger and the making of burnout as a psychopathological syndrome. *Portal de Periódicos da UFMG*. <https://periodicos.ufmg.br/index.php/memorandum/article/download/19144/20331/80357>
- Frenzel, A. C., Daniels, L. M., & Burić, I. (2021). Teacher emotions in the classroom and their implications for students. *Educational Psychologist*, 56(4), 250-264. <https://doi.org/10.1080/00461520.2021.1985501>
- Freudenberger, H. (1974) Staff Burnout. *Journal of Social Issues*, 30, 159-165. <http://dx.doi.org/10.1111/j.1540-4560.1974.tb00706.x>
- Hussein, I., Kaur, A., Al-Ani, W., Poh, S., & Salihu, T. (2021). Teacher burnout and coping Strategies to remain in teaching job in Malaysia: an Interpretative phenomenological analysis. *European Journal of Educational Research*, 10(3), 1075-1088. <https://doi.org/10.12973/eu-jer.10.3.1075>
- Jala, J., & Macalisang, D. Lived Experiences of Public-School Teachers During In-Person Classes: Basis For Proposed Stress Coping Plan. *Sprink Journal of Arts, Humanities and Social Sciences*, 3(3), 01-04. <https://doi.org/10.55559/sjahss.v3i3.220>
- Jomoad, P. D., Antiquina, M. M., Cericos, E. U., Bacus, J. A., Vallejo, J. H., Dionio, B. B., Jame S. Bazar, & Analyn S. Clarin. (2023). Teachers' workload in relation to burnout and work performance. <https://journalissues.org/ijeprr>.

- Kariou, A., Koutsimani, P., Montgomery, A., & Lainidi, O. (2021). Emotional Labor and Burnout among Teachers: A Systematic Review. *International Journal of Environmental Research and Public Health*, 18(23), 12760. <https://doi.org/10.3390/ijerph182312760>
- Labastida, M. (2021, August 18). Teachers are not exempt from stress and exhaustion; we need to rest, too. *Philippine Daily Inquirer*. <https://opinion.inquirer.net/143195/teachers-are-not-exempt-from-stress-and-exhaustion-we-need-to-rest-too>
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal and coping*. New York: Springer.
- Maslach, C. and Jackson, S.E. (1981) The Measurement of Experienced Burnout. *Journal of Organizational Behavior*, 2, 99-113. <http://dx.doi.org/10.1002/job.4030020205>
- Morse, J. M. (1994). Designing funded qualitative research. In Denzin, N. K. & Lincoln, Y. S., *Handbook of qualitative research* (2nd Ed). Thousand Oaks, CA: Sage.
- Moustakas, C. E. (1994). *Phenomenological research methods*. Thousand Oaks, CA: Sage Publications
- Nicholls, AC. Poll shows most public school teachers not satisfied with DepEd response to their needs. *CNN Philippines* <https://www.cnnphilippines.com/news/2021/8/18/survey-DepEd-teachers.html>
- Nicholls, AC. (2021). Poll shows most public school teachers not satisfied with DepEd response to their needs. *CNN Philippines* <https://www.cnnphilippines.com/news/2021/8/18/survey-DepEd-teachers.html>
- Richardson, D. M., Theresa, M. M., Kyla, H., Nicole, K., May, J., Nathalie, D., & Mosi, K. (2023). Stress and avoidant coping: Predictors of quality of life among Filipino graduating students. *European Journal of Psychology and Educational Research*, 6(2), 77-83. <https://doi.org/10.12973/ejper.6.2.77>
- Shaheen, F., & Mahmood, N., (2015). Demographic Variables as Determinants of Emotional Burnout among Public School Teachers. *University of Education*. <https://www.ue.edu.pk/jrre/articles/101004.pdf>
- Skaalvik, E. M., & Skaalvik, S. (2020). Teacher burnout: relations between dimensions of burnout, perceived school context, job satisfaction and motivation for teaching. A longitudinal study. *Teachers and Teaching: Theory and Practice*, 26(7-8), 602-616. <https://doi.org/10.1080/13540602.2021.1913404>
- Villarejo, F. B., Mamburao Jr., R. S., & Lumapenet, H. T. (2022). Work Demands And Occupational Burnout Among Public School Teachers In The Philippines.
- Xie, M., Huang, S., Ke, L., Wang, X., & Wang, Y. (2022). The development of teacher burnout and the Effects of resource Factors: A Latent Transition Perspective. *International Journal of Environmental Research and Public Health*, 19(5), 2725. <https://doi.org/10.3390/ijerph19052725>

Prevalence of Consumers Purchasing Antibiotic Medicine Without Prescription Among Community Pharmacies

Ronnel C. Garcia*, Claudette M. Tugna

School of Pharmacy, Emilio Aguinaldo College Cavite, Dasmarinas Cavite, Philippines

*Corresponding Author Email: ronnel.garcia059@gmail.com

Dated received: June 5, 2024

Date revised: June 17, 2024

Date accepted: June 22, 2024

Originality: 97%

Grammarly Score: 99%

Similarity: 3%

Recommended citation:

Garcia, R., Tugna, C. (2024). Prevalence of consumers purchasing antibiotic medicine without prescription among community pharmacies. *Journal of Interdisciplinary Perspectives*, 2(8), 92-98.
<https://doi.org/10.69569/jip.2024.0264>

Abstract. According to the Global Research on Antimicrobial Resistance, the Philippines has an average antibiotic use of 5.3 DDDs per 1,000 people, with pediatric antibiotic use constituting approximately 56.2%. Although lower than in neighboring countries, this level of use still poses a significant threat to the healthcare system. The widespread availability of antibiotics has been a major contributing factor to the rise of antibiotic resistance (ABR) in the Philippines. Historically, antibiotics could be purchased without a prescription from local pharmacies. This study examined the prevalence of consumers attempting to purchase antibiotics without a prescription in Carmona, Cavite. Utilizing quantitative descriptive and correlational research methodologies, the study employed convenience sampling due to the limited number of community pharmacies and their tendency to cluster in specific areas. A structured survey questionnaire was used to gather data and analyze correlations between variables. Findings indicate that the majority of consumers in Carmona, Cavite, frequently attempt to obtain antibiotics without a prescription, with a preference for penicillin-class antibiotics. The reasons for these purchases vary, including self-medication for minor illnesses, treatment for pets and poultry, and topical wound care. The results underscore the importance of community education and engagement on the risks of ABR. The study suggests that local government educational programs can enhance consumer awareness of the need for prescriptions. The findings indicate that awareness of prescription requirements moderately affects the frequency of attempting to buy antibiotics without a prescription. However, no significant association was found between the reasons for obtaining medicine without a prescription and the type or class of medicine purchased.

Keywords: Antibiotics; Antibiotic resistance; Prescription medication; Community pharmacy; Healthcare.

1.0 Introduction

The advent of antibiotics revolutionized the field of medicine. What should have been a fatal wound because of an infection has been treated as nothing but a scratch nowadays. According to the data gathered by Global Research on Antimicrobial Resistance, the average global antibiotic consumption in 2018 hovers around 14.3 DDDs (Defined Daily Dosage) per 1,000 population from 9.8 DDDs per 1,000 people in 2000, translating to a 46% increase in average antibiotic consumption. According to the same index, the Philippines has an average of 5.3 DDDs per 1,000 people, with around 56.2% of which is for antibiotic usage in children.

Indiscriminate antibiotic use poses a significant threat to the healthcare system. A once powerful weapon is being rendered obsolete due to ABR (Antibiotic Resistance). According to Saleem et al. (2021), the growing rates of ABR are now increasing worldwide morbidity, mortality, and costs. ABR is attributed to the misuse and overuse of antibiotics, which stems from the lack of knowledge, careless use, and outdated beliefs of consumers about

antibiotics (Karuniawati et al., 2021). Furthermore, in addition to increasing the cost of healthcare, ABR poses a threat to other industries such as agriculture and waste management as antibiotic use in animal products increases.

The most contributing factor to the rise of ABR in the Philippines is the previously unregulated availability of antibiotics. Before the implementation DOH-FDA Advisory No. 2012-017, anyone can just show up in a community pharmacy to purchase antibiotics. Nowadays, however, a physician's prescription is required as per DOH-FDA Advisory No. 2012-017, with the help of the strengthened R.A. 10918 or the Philippine Pharmacy Act. This combination of laws helped mitigate the problem; however, due to Filipinos' outdated beliefs, indiscriminate antibiotic use persists, and community-level antibiotic use remains uncertain, as some community pharmacies continue to dispense these medications even without a prescription (Saito et al., 2018).

Research on indiscriminate dispensing of antibiotics without a prescription at community pharmacies reveals significant gaps and challenges. Despite existing laws and regulations prohibiting the sale of antibiotics without a prescription, non-compliance by pharmacy providers is widespread (Ndaki et al. 2021). A study done by Fernandez (2021) indicates that recommendations for public education on antibiotic use are needed to be developed to solve the lack of understanding of antibiotic resistance. A deeper understanding of indiscriminate antibiotic use is required to establish whether patients' use patterns are congruent with optimal treatment techniques. Therefore, public education regarding the proper use of these medications is needed to enhance healthcare outcomes.

The involvement of community pharmacists is crucial in the fight against ABR. Community pharmacies are healthcare institutions where pharmacists distribute drugs, advise patients on medication use, and provide a variety of health-related services. These pharmacies are critical components of the healthcare infrastructure, acting as a link between patients and the larger healthcare system by providing crucial services and enhancing public health outcomes. They are the most accessible to the general public, and they can educate customers about the risks of the ABR. This research explored the prevalence of over-the-counter antibiotic purchases without a prescription in community pharmacies in Carmona Cavite.

2.0 Methodology

2.1 Research Design

The study focused on quantitative descriptive and correlational research methods, intended to determine if there is a correlation between the consumer's frequency of purchase of antibiotics without a prescription and the consumer's level of awareness. The study utilized a structured survey questionnaire to address the study's objectives and established a correlation between each variable. The research used convenience sampling due to the limitations on the number of community pharmacies in the city and their tendency to concentrate on a handful of areas in the city. This ensured that the research gathered as many participants as possible.

2.2 Research Locale

The study focused on Carmona Cavite, Philippines. The city has a population of 106,256 according to PhilAtlas in 2021. This population is spread among 14 barangays. Carmona is a relatively new city, with its status being upgraded last July 8, 2023, and with it, comes the traditional approach and beliefs in medicine.

2.3 Research Participants

The study focused on registered community pharmacies in the city as research participants. A total of 16 community pharmacies participated in this study. The study used a convenience sampling strategy. Participants were chosen based on whether they met onsite or online criteria.

2.4 Research Instrument

The research used a survey questionnaire as a research instrument, with the survey used in the study of Ahmad et al. (2022) being the basis and was modified by being synthesized with the study of Karuniawati et al. (2021) and Ndaki et al. (2021). The results were gathered using an online survey utilizing Google Forms and by onsite approach to community pharmacies. The online poll was distributed to acquaintances via social media, with direct or indirect contact to qualifying community pharmacies. The onsite survey involved physically approaching

community pharmacists to answer the questions and sending the surveys to several barangays in Carmona, Cavite.

The questionnaire included Poka-Yoke features to ensure that the responses were as accurate as feasible. Poka-Yoke aspects prevent mistakes by providing prepared responses, such as multiple-choice questions. The questionnaire consisted of questions like frequency of antibiotic purchase attempts, reason for purchase, antibiotic drug/class being purchased, and assessment of the awareness of the consumers/patients about the prescription requirement for purchasing antibiotic

The validation of the questionnaires was done by submitting the instrument to three different independent validators, with all 3 validators being practicing community pharmacists. The research instrument was judged using 7 different criteria, namely; Clarity of Language, Presentation of Topics, Sustainability of Terms, Adequateness of Purpose, Attainment of Purpose, Respondents' Friendliness, and Objectivity, in which it received a score of 35/40 (Validator 1), 38/40 (Validator 2), and 30/40 (Validator 3) respectively, having an overall score of 34.33/40. Using SPSS to calculate the Cronbach's Alpha, the coefficient value resulted in $\alpha = 0.7778$, translating that the testing instrument was in "Acceptable" Consistency.

2.5 Data Gathering Procedure and Analysis

On-site participants were chosen immediately by approaching them. For the online survey, the researchers distributed the survey form to several contacts who live in Carmona Cavite and know a community pharmacist who is currently working in the city.

For the statistical analysis of the data, Spearman's rank correlation coefficient test was employed to examine the relationship between consumer awareness and their reasons for purchasing. This test yields a correlation coefficient (r) ranging from +1 (indicating a positive correlation) to -1 (indicating a negative correlation), assessing both the strength and direction of the relationship between variables. The coefficient (ρ) indicates how well the data points fit a linear relationship between the variables.

Additionally, the relationship between the reason for purchase and the type or class of antibiotic drug purchased was investigated using the chi-square test. According to Garcia and Duhan (2024), the chi-square test is most effective when observed results align with expected outcomes, thereby confirming that observations are not random. This test is particularly suitable for analyzing categorical variables and assessing goodness of fit between expected and observed frequencies, as well as the independence of two criteria for qualitative variables.

2.6 Ethical Considerations

This research study followed ethical guidelines. Participants in this study provided their complete agreement to participate, and they had the option to withdraw or have their responses redacted at any time. The participating respondents encountered no risks all through the study's implementation. The researchers were responsible for any confidentiality violations that happened during the research process. To ensure the confidentiality of the information gained, only the researchers and statistician had access to the collected data. All study data contained on the drive was to be kept strictly secret and used only for research purposes and be disposed of once the study was completed.

3.0 Results and Discussion

3.1 Frequency of Purchasing Antibiotics Without a Prescription

Table 1 shows that in the community pharmacy setting, the majority of pharmacists encounter consumers trying to purchase antibiotic medicine multiple times a day ($N = 6$, 37.5% of the responders), with another 25% ($N = 4$) saying that they encounter consumers purchasing at least once a day. Only 2 pharmacies (12.5% of the responders) said that they never encounter consumers trying to purchase antibiotic medicine without a prescription, with another pharmacy ($N = 1$, 6.3%) saying that they only encounter such purchases at least once a month.

Table 1. Descriptive statistics of the frequency of purchasing antibiotic without a prescription

Frequency of Purchase	Frequency	Percentage (%)
1 - Never	2	12.5
2 - Rarely	1	6.3
3 - Sometimes	3	18.8
4 - Often	4	25.0
5 - Very Often	6	37.5
Total	16	100.0

These findings are consistent with broader research indicating that consumers attempting to acquire antibiotics without a prescription are common in many parts of the world despite regulations intended to prevent this activity, according to Ahmad et al. in 2022. The frequency with which antibiotics are purchased without a prescription in Carmona's community pharmacies underlines the need for further public health involvement. These could include educational programs to raise awareness about the risks of antibiotic overuse and the significance of following prescription guidelines.

3.2 Common Reasons for Purchasing Antibiotics Without a Prescription.

Table 2. Descriptive statistics of the common reason for purchasing without prescription

Reason	Frequency	Percentage (%)
For self-medication (Treatment for fevers, colds, cough)	12	29.27
For pet and poultry use	12	29.27
For topical treatment of wounds	12	29.27
Prophylaxis (prevention of illness)	3	7.32
For stockpiling/Replenishment of supply	2	4.87
Total	41	100

With regards to the typical reason why the consumers tried to purchase antibiotics without a prescription, 12 Pharmacies (75% of the responders) said that the consumers used them for 3 reasons. (1) for self-medication on minor ailments such as fevers, colds, and coughs, (2) for pet and poultry use, and (3) for topical treatment of wounds. Other minor reasons include prophylaxis to prevent illness (18.8% of the responders) and for stockpiling/replenishment of supply (12.5% of the responders).

According to a study by Robredo et al. in 2022, self-medication is prevalent. At least 31% to 66% of Filipinos practice some kind of self-medication. Self-medication is one of the top reasons for purchasing antibiotics without a prescription at the community level in Carmona Cavite. Along with using antibiotics for pets and poultry and topical application of wounds, this can be a contributing factor in the rise of ABR.

3.3 Common Antibiotics Purchased by Consumers.

Table 3. Descriptive statistics of the common antibiotics being purchased by the consumers

Antibiotic Drug/Class	Frequency	Percentage (%)
Penicillin (e.g. Amoxicillin)	16	29.09
Macrolide (e.g. Azithromycin, Erythromycin)	7	12.73
Cephalosporin (e.g. Cephalexin, Cefdinir)	7	12.73
Fluoroquinolone (e.g. Ciprofloxacin, Levofloxacin)	4	7.27
Beta-lactam with Combination (e.g. Co-amoxiclav)	8	14.54
Tetracycline (e.g. Tetracycline, Doxycycline)	3	5.46
Trimethoprim-Sulfamethoxazole	2	3.64
Lincosamides (Clindamycin)	8	14.54
Total	55	100

Table 3 indicates that Penicillin was the preferred antibiotic class purchased without a prescription across all 16 community pharmacies surveyed (100% of respondents). Beta-lactam antibiotics and Lincosamides tied for second place, with eight pharmacies each (50% of respondents) reporting consumer attempts to purchase these antibiotics. Additionally, seven pharmacies (43.8% of respondents) noted the popularity in purchasing macrolides and cephalosporins without a prescription. In contrast, only two pharmacies (12.5% of respondents) reported attempts to purchase Trimethoprim-Sulfamethoxazole.

In a study by Fenta et al. conducted in 2022, it was found that 49.6% of gram-negative bacteria isolates, 46.2% of *S. pneumoniae* isolates, 28.6% of *S. pyogenes* isolates, and over 49% of *S. aureus* isolates were resistant to penicillin. Being the top drug of choice for consumers purchasing antibiotics without a prescription, it can be attributed to the rising levels of ABR, and it can render the penicillin antibiotic drug class obsolete in the future. According to this study however, Lincosamides and Beta-lactams were still effective against isolated bacteria species.

3.4 Awareness of Laws and Regulations Relating to Prescription for Purchasing Antibiotics.

Table 4. Descriptive statistics of the awareness of the consumers in the prescription requirements of purchasing of antibiotics

Level of Awareness	Frequency	Percentage (%)
1 – Not Aware	2	12.5
2 – Somewhat aware but have limited knowledge (e.g. restrictions only for certain types of antibiotics)	11	68.8
3 – Fully aware but still chose to buy	3	18.8
Total	16	100.0

Table 4 indicates that most consumers attempting to purchase antibiotics without a prescription in community pharmacies were somewhat aware of the prescription requirements (11 pharmacies, accounting for 68.8% of the respondents). The majority of these consumers mistakenly believed that the requirement applies only to specific antibiotics, not universally. Only two community pharmacies (12.5% of respondents) reported that consumers were completely unaware of the prescription requirement, while three pharmacies (18.8% of respondents) noted that consumers were fully aware but still chose to purchase without a prescription.

This misconception among consumers underscores a significant gap in public knowledge regarding the consistent application of prescription requirements across all types of antibiotics. In a study by Ornos et al. (2022), it is emphasized that there is a critical need for targeted educational initiatives aimed at improving public awareness about the prescription requirements for antibiotics. These efforts should concentrate on dispelling misconceptions and fostering a thorough understanding of the legal and health implications associated with antibiotic misuse.

3.5 Relationship Between Consumer's Awareness and Frequency of Purchase without Prescription

Table 5. Correlation analysis of the consumer awareness and the frequency of purchase

		Frequency	Awareness
Spearman's rho	Frequency	Correlation Coefficient, ρ	1.000
		Sig. (2-tailed) (p-value)	0.000
		N	16
	Awareness	Correlation Coefficient, ρ	0.434
		Sig. (2-tailed) (p-value)	0.093
		N	16

Based on the results from Table 5, there is a moderate correlation between the frequency of purchasing antibiotics without a prescription and consumers' awareness of prescription requirements ($\rho = 0.434$, p-value = 0.093). This indicates that consumers' awareness of prescription requirements moderately influences how often they attempt to buy antibiotics without a prescription.

According to a study conducted by Saleem et al. (2021), antibiotics were frequently dispensed in community pharmacies. Given the high frequency of purchasing antibiotics without a prescription and consumers' varying levels of awareness regarding prescription requirements, the risk of Antibiotic Resistance (ABR) in the community of Carmona, Cavite, is notably high. Ensuring comprehensive public education could significantly reduce the prevalence of ABR. Increased awareness of prescription policies is crucial in affecting how frequently consumers purchase antibiotic medication.

3.6 Relationship Between Reason for Purchase and Type of Antibiotic Purchased

Table 6. Analysis for the relationship between reason for purchase and the type of antibiotic purchased

	Value	df	p-value
Pearson Chi-Square	69.067	80	0.803
Likelihood Ratio	42.810	80	1.000
Linear-by-Linear Association	0.590	1	0.442
N of Valid Cases	16		

Based on Table 6, the chi-square value of 0.803 ($p > 0.05$) indicates that there is no relationship between the reason for purchasing antibiotics without a prescription and the class of antibiotics being purchased. This implies that the reasons consumers choose to buy antibiotics without a prescription do not vary significantly based on the type of antibiotic they purchase. For example, whether a consumer opts for penicillin or another class of antibiotics, the underlying reasons (such as self-diagnosis or advice from non-medical sources) do not differ significantly across these categories.

4.0 Conclusion

The study findings revealed that the majority of consumers in Carmona, Cavite, frequently attempt to purchase antibiotic medications without a prescription, with antibiotics from the penicillin class being their drug of choice. The reasons for these purchases vary widely, from self-medication for minor ailments to use in pets and poultry, and even topical application for wounds. This underscores the importance of community education and engagement regarding the dangers of antibiotic resistance (ABR). The results suggest that efforts to educate the public through local government programs can increase consumer awareness about the necessity of prescriptions.

The study also found that awareness of the prescription requirement moderately influences how often consumers purchase antibiotics without a prescription. However, there is no significant relationship between the reasons for purchasing medication without a prescription and the type or class of medicine being bought.

The research reveals general behaviors and attitudes towards indiscriminate antibiotic use, emphasizing the need for comprehensive public health education and policy strategies to combat misuse and reduce antibiotic resistance development. The findings underscore the necessity of a holistic approach to address antibiotic misuse, including widespread educational campaigns to correct misconceptions about antibiotics, stricter regulations on antibiotic sales, and improved healthcare access to lessen the need for self-medication.

Further research is needed to explore additional factors such as the socio-demographic profiles of consumers attempting to purchase antibiotics without prescriptions. Gathering such data can provide deeper insights into the underlying motivations driving these behaviors.

It is also recommended to expand the research to neighboring towns and cities to account for factors such as the residents of Carmona purchasing antibiotics in nearby towns like GMA, Cavite, or residents of Binan, Laguna, buying antibiotics in Carmona. This could significantly impact research outcomes since these areas were not included in the current study.

Additionally, incorporating perspectives from hospital pharmacists is crucial for a comprehensive assessment of antibiotic purchase without prescriptions. Involving pharmacies in clinics and hospitals will provide a more holistic understanding of the issue.

Understanding each of these factors is crucial for improving the policymaking process aimed at combating the rise of antibiotic resistance.

5.0 Contributions of Authors

Ronnel Garcia – Conception of the topic, writing of the introduction and methodology, supervising the data analysis for results and discussion, editing of the manuscript for revisions.

Claudette Tugna – Conception of the topic, writing of the results and discussion, writing of the conclusion, data gathering (online and onsite data gathering), data analysis using SPSS.

6.0 Funding

There is no funding agency for this research

7.0 Conflict of Interests

There was no conflict of interest to declare in this study.

8.0 Acknowledgment

We want to express our deepest gratitude to the following people for being with us in every effort throughout this challenging and exciting journey:

To our participants, the community pharmacies in Carmona Cavite, for the data that they have provided.

To Professors Aldrix Guevarra and Miguel Patriarca, for their support in the creation of this study. Their ideas were of great help for the conceptualization of the study.

To Professors Frederick Francisco and Ariel Geno Santos, for their insights. Their consults were of great help in the formation of the survey for this study.

To Ms. Judea Moralidad, for her consults in statistical treatment of data and support in ensuring that this study follows the highest statistical standard.

Thank you very much, this work is dedicated to you all.

9.0 References

- Ahmad, T., Khan, F. U., Ali, S., Rahman, A. U., & Khan, S. A. (2022). Assessment of without prescription antibiotic dispensing at community pharmacies in Hazara Division, Pakistan: A simulated client's study. *PLOS ONE*, 17(2), e0263756. <https://doi.org/10.1371/journal.pone.0263756>
- Fenta, F., Alemu, D., & Alelign, D. (2022). Magnitude of drug-resistant gram-positive bacterial pathogens, and its associated factors from external ocular infected patients attending at Jinka General Hospital Ophthalmic Clinic, Southern Ethiopia. *Dovepress*, 15, 947–959. <https://doi.org/10.2147/IDR.S356974>
- Fernandez, R. A. V. (2021). Awareness on the use of antibiotic and over-the-counter (OTC) drugs among selected residents in Cabaluay, Zamboanga City. *Science Asia Review*, 4, 33–56.
- Garcia, R. C., & Duhan, D. A. V. (2024). Perception of senior citizens on paid value-added community pharmacy services in Dasmarinas, Cavite. *Ignatian International Journal for Multidisciplinary Research*, 2(5), 2632–2653. <https://doi.org/10.5281/zenodo.11393778>
- Global Research on Antimicrobial Resistance. (2018). Global antibiotic consumption & use. Retrieved from <https://www.tropicalmedicine.ox.ac.uk/gram/research/visualisation-app-antibiotic-usage-and-consumption>
- Karuniawati, H., Hassali, M. A. A., Suryawati, S., Ismail, W. I., Taufik, T., & Hossain, M. S. (2021). Assessment of knowledge, attitude, and practice of antibiotic use among the population of Boyolali, Indonesia: A cross-sectional study. *International Journal of Environmental Research and Public Health*, 18, 8258. <https://doi.org/10.3390/ijerph18168258>
- Ndaki, P. M., Mushi, M. F., Mwangi, J. R., Konje, E. T., Ntinginya, N. E., Mmbaga, B. T., Keenan, K. L., Sabiiti, W., Kesby, M., Benitez Paez, M. F., Sandeman, A. F., Holden, M., & Mshana, S. E. (2021). Dispensing antibiotics without prescription at the community pharmacies and accredited drug dispensing outlets in Tanzania: A cross-sectional study. *Antibiotics*, 10(8), 1025. <https://doi.org/10.3390/antibiotics10081025>
- Ornos, E. D., Quebral, E. P. B., Ceriales, J. A., & Tantengco, O. A. G. (2022). Inappropriate antibiotic dispensing and use: A public health threat in the Philippines. *Asian Pacific Journal of Tropical Medicine*, 15(8), 341–342. <https://doi.org/10.4103/1995-7645.354417>
- PhilAtlas. (2024). Carmona: Province of Cavite. Retrieved from <https://www.philatlas.com/luzon/r04a/cavite/carmona.html>
- Robredo, J. P. G., Eala, M. A. B., Paguio, J. A., Salamat, M. S. S., & Celi, L. A. G. (2022). The challenges of combatting antimicrobial resistance in the Philippines. *Correspondence*, 3(4), E246. [https://doi.org/10.1016/S2666-5247\(22\)00029-5](https://doi.org/10.1016/S2666-5247(22)00029-5)
- Saito, N., Takamura, N., Retuerma, G. P., Frayco, C. H., Solano, P. S., Ubas, C. D., Lintaq, A. V., Ribo, M. R., Solante, R. M., Dimapilis, A. Q., Telan, E. O., Go, W. S., Suzuki, M., Ariyoshi, K., & Parry, C. M. (2018). Frequent community use of antibiotics among a low-economic status population in Manila, the Philippines: A prospective assessment using a urine antibiotic bioassay. *The American Society of Tropical Medicine and Hygiene*, 98(5), 1512–1519. <https://doi.org/10.4269/ajtmh.17-0564>
- Saleem, Z., Faller, E. M., Godman, B., Malik, M. S. A., Iftikhar, A., Iqbal, S., Akbar, A., Hashim, M., Amin, A., Javeed, S., Amir, A., Zafar, A., Sabih, F., Hashmi, F., & Hassali, M. (2021). Antibiotic consumption at community pharmacies: A multicenter repeated prevalence surveillance using WHO methodology. *Medicine Access @ Point of Care*, 5, 1–9. <https://doi.org/10.1177/23992026211064714>

Service Quality and Client Satisfaction in Calamba City Civil Registry

Alexandra V. Carreon

Laguna College of Business and Arts, Calamba City, Laguna, Philippines

Author Email: alexandravcarreon07@gmail.com

Dated received: June 7, 2024

Date revised: June 17, 2024

Date accepted: June 22, 2024

Originality: 95%

Grammarly Score: 99%

Similarity: 5%

Recommended citation:

Carreon, A. (2024). Service quality and client satisfaction in Calamba City civil registry. *Journal of Interdisciplinary Perspectives*, 2(8), 99-113. <https://doi.org/10.69569/jip.2024.0272>

Abstract. The study conducted at the Calamba City Civil Registry Office aimed to evaluate service quality and client satisfaction using quantitative methods, focusing on marriage certificate registration and marriage license application services in Calamba City, Laguna, Philippines. The research employed a descriptive correlational design with quota sampling, involving 22 employees, 71 marriage license applicants, and 52 marriage registration clients. Data collection was carried out through a survey instrument with a high reliability (Cronbach's Alpha = 0.790), assessing service quality dimensions such as tangibility, reliability, responsiveness, assurance, empathy, personnel, process, equipment and facilities, and value for money. Statistical analyses included frequency distributions, Likert scale interpretations, t-tests, and Pearson correlation coefficients. Key findings revealed significant differences between employee and client assessments in terms of reliability, responsiveness, and assurance ($p < 0.05$), whereas tangibility and empathy showed no significant differences. Additionally, a positive relationship was identified between service quality and client satisfaction, with correlation coefficients ranging from 0.25 to 0.60 ($p = 0.000$). These results highlight the importance of enhancing service quality to improve client satisfaction. In conclusion, the study provides valuable insights into specific areas where the Calamba City Civil Registry Office can focus its improvement efforts. The findings suggest that initiatives such as regular staff training, system upgrades, fee transparency, quality control measures, and a one-stop-shop approach are crucial for enhancing service delivery and increasing client satisfaction. These conclusions are significant for policymakers and managers seeking evidence-based strategies to improve public service quality and client experiences at governmental service centers like civil registry offices.

Keywords: Service quality; Client satisfaction; Government; Civil registry; City of Calamba.

1.0 Introduction

In today's digital age, government services are important for societies. They cover a wide range of responsibilities aimed at improving citizens' lives. The quality of these services is measured by how satisfied people are with them. When services are delivered well, it builds trust and confidence in the government. If services are not good enough, people can get frustrated and lose faith in the government's ability to solve society's problems. Client satisfaction is an important way to measure government services. It shows how responsive, accessible, and good the services are. Satisfied clients are more likely to support government initiatives, creating a cycle of involvement and cooperation.

The Civil Registry is responsible for recording vital events like births, marriages, and deaths, shaping individuals' legal identities. The quality of its services significantly impacts citizens' lives, affecting access to rights and services. However, the institution faces challenges in managing data, navigating legal frameworks, and ensuring privacy. Client satisfaction is crucial, dependent on accessibility, responsiveness, and efficiency. Safety and

security measures, such as encryption and authentication, are essential to protect personal information and maintain the integrity of vital records.

Integrating constitutional provisions with civil registry services is essential for ensuring that the government operates within the bounds of the law and respects citizens' fundamental rights. Privacy, non-discrimination, and access to essential services are crucial principles emphasized in constitutional documents that are particularly relevant to civil registry services. The collection and handling of personal information must adhere to stringent privacy standards to ensure individuals can control their data. Constitutional non-discrimination guarantees contribute to the equitable provision of civil registry services, ensuring that registration processes remain accessible to all citizens, irrespective of their background.

Different countries have varying levels of efficiency and effectiveness in their civil registry services. A well-functioning system prioritizes accuracy, accessibility, and security, recognizing their significant role in individual well-being and broader societal development. Governments are guided by international standards, such as those set by the United Nations, in establishing and maintaining robust civil registry systems. Nordic countries like Sweden, Norway, and Denmark serve as examples of best practices with advanced and efficient systems, emphasizing digitalization, interconnected databases, streamlined processes, and user-friendly interfaces.

Furthermore, Singapore is known for its advanced and technology-driven civil registry practices. The city-state has implemented biometric identification and automated registration processes, making resident experience seamless and secure. Singapore's commitment to technological advancements has improved the efficiency of its civil registry services, setting an example for other nations looking to enhance their systems. (Smith, 2019). However, some developing nations need help improving their civil registry services. African countries face challenges due to limited resources, remote rural populations, and poor infrastructure. International organizations like the United Nations Development Programme (UNDP) are working on initiatives to enhance civil registration processes in these regions. These efforts include training programs, technological support, and sharing knowledge to improve civil registry services in developing nations. (World Bank, 2018).

The Philippines values civil registry services, which handle important records like birth certificates, marriage licenses, and death certificates. However, the quality of these services varies by region, depending on factors like population, income, and resources. In big cities like Manila, digitalization has been used to make it easier to get these records. The National Statistics Office (NSO) has become the Philippine Statistics Authority (PSA), which now accepts applications online. This change to digital services has made it simpler for people to access records and reduced the amount of paperwork they need to do.

Challenges persist in remote and economically disadvantaged areas. Rural communities face obstacles related to infrastructure, awareness, and accessibility. These communities are the most affected due to their limited financial resources and fewer opportunities. Local government units (LGUs) play a crucial role in ensuring that civil registry services are available and tailored to meet the community's unique needs. To address these challenges, LGUs are implementing mobile registration units, community outreach programs, and localized information campaigns to make civil registry services more inclusive. Mobile registration units are crucial in remote areas, while community outreach programs and localized information campaigns help raise awareness about the importance of civil registry services and how to access them.

This study focused on improving government services for citizens, specifically the Calamba City Civil Registry. It emphasized the importance of maintaining accurate records of life events for residents to build trust and facilitate access to government services. The research supported national and international efforts to inform policymaking and development by maintaining accurate vital event records. The research differed from previous studies by focusing on identifying significant differences between two groups of respondents in terms of the manifestation of service quality, specifically in the context of marriage registration and license application in the Civil Registry. The study was conducted with extensive readings and gathered additional information from related literature and studies, which proved to be invaluable in conducting a thorough analysis. This study marked the second instance of a research study aimed at assessing service quality and client satisfaction in the Calamba City Civil

Registry. Unlike previous studies that encompassed a broad range of services, this research specifically honed in on the registration of marriage and application for marriage licenses.

2.0 Methodology

2.1 Research Design

The study used quantitative research methods, specifically descriptive correlational research, to explore the relationship between service quality and client satisfaction at the Calamba City Civil Registry Office. By collecting numerical data from a substantial sample, the study aimed to generalize findings to the entire clientele, utilizing structured questionnaires and survey tools for unbiased data collection. The goal was to provide insights and recommendations for enhancing service quality and supporting policymaking through statistically backed conclusions.

2.2 Research Locale

Conducted in Calamba City, Laguna, Philippines, the research focused on the Civil Registry Office due to its crucial role in managing vital records for residents and businesses. This office handles services such as birth, marriage, and death certificates, making it a pivotal institution for the community. Analyzing client interactions and experiences provided valuable insights for improving service delivery.

2.3 Research Respondents

The study's respondents were clients applying for marriage licenses (49%), clients registering for marriages (36%), and employees (15%). This distribution highlighted the Civil Registry's primary focus on marriage-related documentation and provided insights from different stages of service interaction.

2.4 Research Instrument

A 45-question survey questionnaire based on the ServQual Model and Value Percept Disparity Theory was developed to assess service quality (tangibility, reliability, responsiveness, assurance, empathy) and client satisfaction (personnel, process, equipment and facilities, value for money). The questionnaire was validated by experts and tested for reliability using Cronbach's Alpha, achieving a value of .790.

2.5 Data Gathering Procedure

Data collection involved distributing validated questionnaires to clients and employees at the Civil Registry Office. Permissions were obtained to ensure cooperation, and survey stations were set up for easy access. The data was analyzed using statistical methods, and findings were used to develop an action plan for improving service quality.

2.6 Ethical Consideration

The study adhered to ethical guidelines, ensuring voluntary participation, informed consent, and confidentiality. Participants were fully informed about the research and could withdraw at any time. Data handling complied with the Data Privacy Act of 2012, maintaining the integrity and reliability of the research.

3.0 Results and Discussion

3.1 Service Quality in the City Civil Registry of Calamba

In terms of Tangibility

Tangibility was Fully Manifested (3.83) as to the level of service quality in the City Civil Registry of Calamba. This garnered a standard deviation of 0.31 for the employees and 0.25 for the clients. All indicators were verbally interpreted as Fully Manifested. The indicator "Signage and instructions within the office premises sufficiently guided clients through the registration and application processes" yielded the highest mean score of 3.88. On the other hand, the indicator "Additional amenities or services to enhance the client experience at the office would be appreciated" received the lowest mean score of responses with 3.73.

It implies that both employees and clients are quite satisfied with the clarity and conciseness of the signage and instructions, as they strongly agree that these are effective in guiding them through the registration and application processes. The Anti-Red Tape Authority, also known as ARTA, requires that every office has a citizen charter posted on the bulletin board so that clients are aware of the step-by-step procedures, as well as how long

it takes for every service. This helps to ensure that clients are well-informed and can easily navigate through the process. However, while both employees and clients agree that additional amenities or services will be appreciated, the agreement is not as strong in this regard. There are a few devices that can be used to enhance the client experience. For example, there is a television located outside the office for the clients to use, but only the office programs are displayed on the screen. Unfortunately, not all clients are interested in this.

Table 1. Descriptive statistics of the level of service quality in the City Civil Registry of Calamba in terms of tangibility

Indicators	Employee		Clients		Composite	
	Mean	Interpretation	Mean	Interpretation	Mean	Interpretation
1. The materials and equipment used by the office are of high quality and sufficient for needs.	3.80	FM	3.88	FM	3.84	FM
2. The overall cleanliness and organization of the office premises meet expectations.	3.90	FM	3.71	FM	3.81	FM
3. Signage and instructions within the office premises sufficiently guide clients through the registration and application processes.	3.90	FM	3.86	FM	3.88	FM
4. Waiting areas provided by the office are comfortable and welcoming.	4.00	FM	3.74	FM	3.87	FM
5. Additional amenities or services to enhance the client experience at the office would be appreciated.	3.80	FM	3.65	FM	3.73	FM
Standard Deviation	0.31		0.25			
General Assessment	3.88	FM	3.77	FM	3.83	FM

Legend: 3.25 - 4.00 Strongly Agree – Fully Manifested (FM), 2.50 - 3.24 Agree – Manifested (M), 1.75 - 2.49 Disagree – Slightly Manifested (SM), 1.00 - 1.74 Strongly Disagree – Not Manifested (NM)

Furthermore, students express dissatisfaction with certain areas such as the condition of hostels and equipment on campuses. This highlights the need for additional amenities or services to enhance the overall student experience. The positive association between service tangibility and student satisfaction, as revealed by the study, further supported the implications. This finding emphasizes the importance of improving service tangibility to increase student satisfaction with teaching and learning facilities. The insights provided by Kanori et al. (2020) regarding the importance of service tangibility in higher education institutions shed light on the impact it had on student satisfaction. The study noted that students tended to rely on tangible cues such as learning materials and spaces to evaluate the quality of academic services. This emphasized the significance of providing clear and concise signage and instructions to guide students through registration and application processes.

In terms of Reliability

Table 2. Descriptive statistics of the level of service quality in the City Civil Registry of Calamba in terms of reliability

Indicators	Employee		Clients		Composite	
	Mean	Interpretation	Mean	Interpretation	Mean	Interpretation
1. Employees ensure that there are no errors or delays in the registration of marriage certificates and application for marriage licenses.	3.80	FM	3.68	FM	3.74	FM
2. The office consistently meets promised deadlines.	3.90	FM	3.56	FM	3.73	FM
3. Accuracy of information provided by the office staff regarding necessary documentation and procedures is generally satisfactory.	3.90	FM	3.61	FM	3.76	FM
4. Communication regarding the status of applications is consistently maintained.	3.90	FM	3.59	FM	3.75	FM
5. The office has effective mechanisms in place for handling and resolving client complaints or grievances.	3.80	FM	3.64	FM	3.72	FM
Standard Deviation	0.26		0.31			
General Assessment	3.86	FM	3.62	FM	3.74	FM

Reliability was Fully Manifested (3.74) as to the level of manifestation of service quality in the City Civil Registry of Calamba. This garnered a standard deviation of 0.26 for employees and 0.31 for clients. All indicators were verbally interpreted as Fully Manifested. The indicator “The accuracy of information provided by the office staff regarding necessary documentation and procedures was generally satisfactory” with the highest mean score of 3.76. Moreover, the indicator “The office also had effective mechanisms for handling and resolving client complaints or grievances” got the lowest mean score of 3.72. It implies that both employees and clients fully

manifested the office staff's commendable performance in delivering precise and current information concerning essential documentation and procedures. All guidance provided to clients adheres strictly to the implementing rules, regulations, and memoranda set forth by the Philippine Statistics Authority, guaranteeing the provision of dependable and precise information. When faced with clients' differing viewpoints, employees adeptly manage the situation by furnishing pertinent documents to substantiate the correct procedures.

Furthermore, the office has effective mechanisms in place for handling and resolving client complaints or grievances. Both employees and clients agree that the office staff is responsive and helpful in addressing any issues that may arise. The staff is well-trained in customer service, making the clients feel valued and heard. It is clear that the office staff takes customer satisfaction seriously and strives to provide an excellent customer experience. However, it is unfortunate that there are instances when no staff is assigned to the help desk due to a lack of workforce. This results in delays in addressing client complaints or grievances, leading to frustration and dissatisfaction among clients. The office must take steps to address this issue and ensure that enough staff members are available to handle client inquiries and complaints promptly.

Dam and Dam (2021) provided a theoretical framework that supported the implications drawn from the study. Firstly, the study highlighted the significance of service quality in influencing customer satisfaction and loyalty. It established that providing accurate information and efficient handling of procedures, as demonstrated by the office staff, aligned with the notion of service quality. This connection was crucial because it suggested that the office's efforts to deliver accurate and up-to-date information contributed to customer satisfaction and loyalty. Moreover, the study emphasized the importance of brand image in influencing customer satisfaction and loyalty. By ensuring that the instructions given to clients were based on official regulations and standards, the office maintained a positive brand image. This aligned with the findings of the study, which indicated that a positive brand image led to higher levels of customer satisfaction and loyalty. Additionally, the study discussed the role of customer satisfaction in driving customer loyalty. The effective handling of client complaints and grievances, as noted in the implications, contributed to customer satisfaction. This was supported by the study's findings, which revealed a positive relationship between customer satisfaction and loyalty.

In terms of Responsiveness

Table 3. Descriptive statistics of the level of service quality in the City Civil Registry of Calamba in terms of responsiveness

Indicators	Employee		Clients		Composite	
	Mean	Interpretation	Mean	Interpretation	Mean	Interpretation
1. Inquiries or concerns are promptly addressed by the staff.	4.00	FM	3.76	FM	3.88	FM
2. Staff members are attentive and proactive in assisting with needs.	4.00	FM	3.7	FM	3.85	FM
3. Various channels for contacting the office are readily available.	3.90	FM	3.58	FM	3.74	FM
4. Office staff actively seek feedback and suggestions for improvement.	4.00	FM	3.59	FM	3.80	FM
5. Challenges in accessing or utilizing the office's online services for registration of certificate of marriage and application for marriage license have been minimal.	3.70	FM	3.5	FM	3.60	FM
Standard Deviation	0.26		0.29			
General Assessment	3.92	FM	3.62	FM	3.77	FM

Responsiveness was Fully Manifested (3.77) as to the level of manifestation of service quality in the City Civil Registry of Calamba. All indicators were verbally interpreted as Fully Manifested. This garnered standard deviations of 0.26 and 0.29, respectively. The indicator "The staff quickly responded to inquiries or concerns" got the highest mean score of 3.88. On the other hand, It also appeared that accessing the office's online services to register the certificate of marriage and application for a marriage license had been relatively easy, as indicated by the lowest mean score of responses with 3.60, which was also interpreted as Fully Manifested.

It implies that both employees and clients fully manifested the City Civil Registry Office's apparent possession of a proficient and well-trained staff capable of efficiently managing a range of transactions and inquiries. One factor enabling employees to address inquiries or concerns beyond their designated roles is their requisite understanding

of every transaction process. This ensures seamless transactional continuity even in the absence of specific employees. Moreover, employees demonstrate responsiveness to inquiries or concerns via multiple communication channels including telephone, email, and the Facebook page, thereby enhancing and preserving elevated levels of customer satisfaction and loyalty.

However, despite the office's efforts to simplify the process of applying for a marriage license using Google Forms, some clients still face challenges in accessing or utilizing the online services. For instance, some clients may have encountered difficulties in understanding the instructions or filling out the form, leading to delays or errors in the process. As a result, some clients may prefer the traditional process of writing their information on forms, which they find more familiar and straightforward.

The findings of the study are consistent with the implications drawn from the literature, emphasizing the significance of well-trained staff who can efficiently handle transactions and inquiries. This aligns with the notion of reliability, where customers value consistency and dependability in service delivery. Additionally, the study emphasizes the importance of responsiveness through various communication channels such as telephone, email, and social media, which helps address customer concerns promptly and contributes to high levels of satisfaction and loyalty.

Setiono and Hidayat (2022) highlighted the importance of service quality in shaping customer perceptions and attitudes towards a business. This included aspects such as reliability, responsiveness, assurance, empathy, and tangibles, which played a significant role in determining customer satisfaction levels. Furthermore, the study indirectly addressed the issue of customer convenience and ease of access, which was pertinent to the challenges faced by some clients in accessing or utilizing online services. As mentioned in the study's implications, despite efforts to simplify processes, some clients still preferred traditional methods due to familiarity and perceived simplicity. Understanding customer preferences and ensuring that service offerings catered to diverse needs and preferences was critical in ensuring high levels of customer satisfaction.

In terms of Assurance

Table 4. Descriptive statistics of the level of service quality in the City Civil Registry of Calamba in terms of assurance

Indicators	Employee		Clients		Composite	
	Mean	Interpretation	Mean	Interpretation	Mean	Interpretation
1. Confidence exists in the competence and knowledge of staff members.	3.90	FM	3.83	FM	3.87	FM
2. Procedures and requirements communicated by the office are transparent.	3.90	FM	3.77	FM	3.84	FM
3. Information and guidance regarding legal implications are sufficient.	3.90	FM	3.67	FM	3.79	FM
4. Personal data handling and storage by the office are deemed secure	3.90	FM	3.63	FM	3.77	FM
5. Clients feel reasonably informed about their rights and responsibilities regarding registration or application by the Calamba City Civil Registry Office.	3.90	FM	3.59	FM	3.75	FM
Standard Deviation	0.27		0.25			
Composite Assessment	3.90	FM	3.70	FM	3.80	FM

Assurance was Fully Manifested (3.80) as to the level of manifestation of service quality in the City Civil Registry of Calamba. This garnered a standard deviation of 0.27 for the employees and 0.25 for the clients. All indicators were verbally interpreted as Fully Manifested. The indicator "Confidence exists in the competence and knowledge of staff members." got the highest mean score of 3.87. However, the indicator "Clients feel reasonably informed about their rights and responsibilities regarding registration or application by the Calamba City Civil Registry Office." had the lowest mean score of responses of 3.75.

It implies that both employees and clients fully manifested that the staff members of the Calamba City Civil Registry Office exhibits a high degree of competence and expertise in their assigned tasks. Their assure handling of client transactions suggest a deep familiarity with all procedures and requisites associated with registration and application processes. This level of proficiency and understanding play a crucial role in guaranteeing the delivery

of precise information and effective assistance to clients, consequently fostering elevated levels of customer satisfaction and loyalty.

Moreover, the office's efforts to provide clients with the necessary information regarding their rights and responsibilities are commendable. By posting the requirements for every transaction on their Facebook page, the office ensures that clients are well-informed and prepared when they visit. This initiative not only make it easier for clients to prepare the necessary documents but also reflects the office's commitment to delivering quality service. However, it is important to note that not all clients may have access to the office's Facebook page or may not have seen the post.

Htang (2021) provided valuable insights into the factors influencing customer satisfaction and loyalty, which indirectly supported the implications drawn for the Calamba City Civil Registry Office. The study revealed that service quality dimensions such as hostel facilities significantly influenced student satisfaction. This finding highlighted the importance of facilities and infrastructure in shaping customer satisfaction. Similarly, the implications drawn for the Civil Registry Office underscored the competence and knowledge of staff members, suggesting that these factors contributed to higher levels of customer satisfaction. Moreover, the study discussed significant gender and year of study differences in satisfaction levels among students. While these specific factors may not have directly related to the Civil Registry Office context, they underscored the importance of understanding demographic differences in customer satisfaction. The implications for the Civil Registry Office acknowledged the diversity of clients and the importance of ensuring all clients were well-informed, regardless of their access to information channels like Facebook. Additionally, the study highlighted the correlation between service quality dimensions and overall satisfaction, revealing that satisfaction levels were significantly higher when all service quality dimensions were met. This finding stressed the interconnectedness of various factors in influencing customer satisfaction and loyalty. In the context of the Civil Registry Office, the implications suggested that providing accurate information, efficient assistance, and clear communication about clients' rights and responsibilities could enhance overall satisfaction and loyalty, aligning with the literature's emphasis on the importance of service quality.

In terms of Empathy

Table 5. Descriptive statistics of the level of service quality in the City Civil Registry of Calamba in terms of empathy

Indicators	Employee		Clients		Composite	
	Mean	Interpretation	Mean	Interpretation	Mean	Interpretation
1. Assistance or accommodations from office staff based on unique circumstances or needs have been appreciated by clients.	3.80	FM	3.89	FM	3.85	FM
2. The office fosters a supportive and empathetic environment for clients dealing with the complexities of registration or application.	3.90	FM	3.76	FM	3.83	FM
3. The level of empathy and understanding demonstrated by the office staff in handling sensitive or emotional situations is generally satisfactory.	3.90	FM	3.64	FM	3.77	FM
4. The Clients feel that the office is fair to everyone, or "walang palakasan" during their transaction.	4.00	FM	3.49	FM	3.75	FM
5. Clients receive recommendations or referrals from the Calamba City Civil Registry Office to support them in navigating related legal or administrative processes.	3.80	FM	3.69	FM	3.75	FM
Standard Deviation	0.36		0.27			
Composite Assessment	3.88	FM	3.70	FM	3.79	FM

Empathy was Fully Manifested (3.79) as to the level of manifestation of service quality in the City Civil Registry of Calamba. This garnered a standard deviation of 0.36 for employees and 0.27 for clients. All indicators were verbally interpreted as Fully Manifested. The indicator "Clients had appreciated the assistance and accommodations provided by the office staff based on their unique circumstances or needs" got the highest mean score of 3.85. However, the indicators "The Clients feel that the office is fair to everyone, or "walang palakasan" during their transaction." and "Clients receive recommendations or referrals from the Calamba City Civil Registry

Office to support them in navigating related legal or administrative processes.” received the lowest mean score of 3.75.

It implies that both employees and clients fully manifested that the assistance and accommodations provide by the staff of the Calamba City Civil Registry Office are appreciated by clients, particularly in addressing their specific circumstances or requirements. It is admirable that the staff extended themselves to aid clients, even in simple tasks like form completion. Nonetheless, it is regrettable that some clients perceived a "Palakasan" system within the office, potentially impacting their perception of equity and impartiality during transactions. Addressing this issue is crucial for the office to ensure equitable and fair treatment of all clients.

Furthermore, the low rating received by the office in terms of referrals or recommendations have been an area for improvement. While it is good that the staff advised clients on the registration process and recommend seeking legal help when necessary, it is important to ensure that clients receive adequate support and guidance throughout the process. The office may need to review its referral system and identify ways to improve its effectiveness in helping clients navigate related legal or administrative processes.

Berinyuy (2021) shed light on the importance of responsiveness and empathy in service provision, as highlighted by the study conducted in Shisong Hospital. The study found a significant relationship between employee responsiveness, empathy, and customer satisfaction, which aligned with the implications drawn from the scenario of the Calamba City Civil Registry Office. The study emphasized the significance of responsiveness and empathy in meeting customer expectations and enhancing satisfaction, which was similar to the appreciation expressed by clients for the assistance and accommodations provided by the staff at the Civil Registry Office. This suggested that client satisfaction was influenced by how well staff responded to their needs and demonstrated empathy towards their concerns. Furthermore, the study's recommendation for Shisong Hospital to improve on these facets of service quality directly supported the implication that the Civil Registry Office should address issues such as the perception of a "Palakasan" system and the effectiveness of its referral process. This implied that the Civil Registry Office needed to enhance its responsiveness and empathy to meet customer expectations and ensure fairness, equality, and the effectiveness of their support mechanisms.

3.2 Difference of the Assessment of Two Groups on the Level of Service Quality

Table 6. Analysis for the difference of the assessment of two groups on the level of service quality

	Variables	t test	P value	Remarks	Decision
1	Tangibility	0.533	0.595	Not Significant	Accept Ho
2	Reliability	3.685	0.000	Significant	Reject Ho
3	Responsiveness	3.654	0.000	Significant	Reject Ho
4	Assurance	3.278	0.001	Significant	Reject Ho
5	Empathy	1.717	0.088	Not Significant	Accept Ho

There was a significant difference between the assessment of employees and clients regarding the level of manifestation of service quality in the Calamba City Civil Registry. There was a significant difference between the assessments of employees and clients regarding the level of manifestation of service quality in terms of reliability, responsiveness, and assurance. This was indicated by the probability values of .000, .000, and .001, which were less than the level of significance at .05, thus leading to the rejection of the null hypothesis.

On the other hand, there was no significant difference between the assessments of employees and clients regarding the level of manifestation of service quality in terms of tangibility and empathy. This was shown by the probability values of .595 and .088, which were greater than the level of significance at .05, thus leading to the acceptance of the null hypothesis.

Supriyanto et al. (2021) offered valuable insights into the factors influencing customer loyalty to bank services, with a particular focus on the role of service quality and customer satisfaction. The study emphasized the importance of service quality and customer satisfaction in achieving and maintaining customer loyalty, essential for the long-term sustainability of an organization. The research underscored that service quality played a pivotal role in shaping customer satisfaction, which, in turn, was a key driver of customer loyalty. While the study did not establish a direct relationship between service quality and customer loyalty, it highlighted the significance of

service quality in indirectly influencing loyalty through its impact on customer satisfaction. These findings corroborated the implications drawn from the research, which identified differences in perceptions of service quality between employees and clients, with reliability, responsiveness, and assurance being the most salient factors. These differences had implications for customer satisfaction, which ultimately impacted customer loyalty.

3.3 Client Satisfaction on the Service Quality of Calamba City Civil Registry

In terms of Personnel

Personnel was Very Satisfied (3.81) as to the level of client satisfaction on the service quality of Calamba City Civil Registry. This got a standard deviation of 3.84 for employees and 3.78 for clients. All indicators were verbally interpreted as Very Satisfied. The indicator “Commitment to continuous improvement and learning demonstrated by office personnel was generally appreciated by clients” got the highest mean score of 3.85. However, the indicator “Areas of improvement for the training or development of office personnel had been identified” received the lowest mean score of 3.75.

Table 7. Descriptive statistics of the client satisfaction on the service quality in the City Civil Registry of Calamba in terms of personnel

Indicators	Employee		Clients		Composite	
	Mean	Interpretation	Mean	Interpretation	Mean	Interpretation
1. Accessibility and approachability of office personnel when seeking assistance or information are generally satisfactory.	3.80	VS	3.80	VS	3.80	VS
2. Clients are satisfied with staff behavior or attitude.	3.90	VS	3.73	VS	3.82	VS
3. Areas of improvement for the training or development of office personnel have been identified and should be addressed.	3.70	VS	3.80	VS	3.75	VS
4. Commitment to continuous improvement and learning demonstrated by office personnel is generally appreciated by clients.	3.90	VS	3.80	VS	3.85	VS
5. Accessibility and responsiveness of office personnel in providing assistance or information via telephone or email have been generally satisfactory.	3.90	VS	3.75	VS	3.83	VS
Standard Deviation	0.39	VS	0.26	VS	3.81	VS
General Assessment	3.84		3.78			

Legend: 3.25 - 4.00 Strongly Agree - Very Satisfied (VS), 2.50 - 3.24 Agree - Satisfied (S)

1.75 - 2.49 Disagree - Dissatisfied (D), 1.00 - 1.74 Strongly Disagree - Very Dissatisfied (VD)

It implies that both employees and clients are very satisfied with the performance of the staff members at the Calamba City Civil Registry Office, noting their exceptional competence and proficiency in their designated roles. The skilled management of client transactions demonstrates a thorough understanding of the procedures and requisites associated with registration and application processes. This high level of proficiency played a crucial role in guaranteeing the provision of precise information and prompt assistance to clients, ultimately resulting in heightened levels of customer satisfaction and loyalty.

Moreover, the demonstrated commitment to continuous improvement and learning by office personnel is generally well-received by clients. Annually, the City Civil Registry Office participates in the convention organized by the Philippine Association of Civil Registrars. However, due to budget constraints, only a limited number of employees can attend the conference. Nevertheless, knowledge gains from these conventions is disseminated among workers, ensuring that new knowledge and skills are effectively spread throughout the office. Yet, it is crucial to address identified areas of improvement for the training or development of office personnel, particularly for those unable to attend seminars due to budget limitations.

Ogbu and Imafidon (2021) highlighted the importance of competence and proficiency in service delivery, indicating that clients were more satisfied when they received accurate information and expedient assistance. This aligned with the observed adept handling of client transactions by the office staff, showcasing their deep familiarity with procedures and requirements. Furthermore, the literature underscored the significance of continuous improvement and learning in service organizations. The commitment shown by the office personnel to participate in conventions organized by professional associations reflected a proactive approach to staying updated on industry trends and best practices. Despite budget constraints limiting the number of attendees, the

dissemination of knowledge gained from these conventions ensured that all staff members benefited from new insights and skills.

In terms of Process

Table 8. Descriptive statistics of the client satisfaction on the service quality in the City Civil Registry of Calamba in terms of process

Indicators	Employee		Clients		Composite	
	Mean	Interpretation	Mean	Interpretation	Mean	Interpretation
1. The office adequately communicates changes or updates to its processes or requirements to clients.	3.80	VS	3.80	VS	3.80	VS
2. Procedures for submitting documents are efficient and convenient.	3.90	VS	3.73	VS	3.82	VS
3. Instances of unclear or confusing procedures are rare.	3.70	VS	3.80	VS	3.75	VS
4. Clarity and transparency of procedures involved in the marriage registration and license application process are satisfactory.	3.90	VS	3.80	VS	3.85	VS
5. Overall administrative processes are smooth.	3.90	VS	3.75	VS	3.83	VS
Standard Deviation	0.39		0.26			
Composite Assessment	3.84	VS	3.78	VS	3.81	VS

Process was Very Satisfied (3.81) as to the level of client satisfaction on the service quality of Calamba City Civil Registry. This got a standard deviation of 0.39 for employees and 0.26 for clients. All the indicators were verbally interpreted as Very Satisfied. The indicator “The clarity and transparency of procedures involved in the marriage registration and license application process were found to be satisfactory” got the highest mean score of 3.85. Additionally, the indicator “Unclear or confusing procedures were rare” received the lowest mean score of 3.75. It implies that both employees and clients are very satisfied with the evaluation of the marriage registration and license application process, suggesting that the procedures are transparent and easily understood. The authorities implement effective measures to inform clients about the process, such as posting it on the bulletin board. Instances of confusion or unclear procedures for clients are rare. Even if some clients initially struggle to understand the instructions, employees are well-equipped to offer clear explanations and ensure full comprehension of the information.

Emiru et al. (2020) emphasized the importance of clear procedures and effective communication in achieving higher levels of client satisfaction. In the context of marriage registration and license application processes, transparent procedures and effective communication from authorities were crucial in reducing confusion and ensuring a smooth experience for clients. This viewpoint was supported by the findings of a study on antenatal care (ANC) quality in Northwest Ethiopia, which highlighted the significance of both process and structure in determining client satisfaction with ANC services. The study found that while structural variables did not significantly impact satisfaction levels, process quality indicators were strongly associated with higher satisfaction levels. The study identified history taking, counseling, and screening as key predictors of client satisfaction in the ANC process. Similarly, in the context of marriage registration, effective communication and clear procedures contributed to smoother client experiences, reducing confusion and improving satisfaction levels.

In terms of Equipments and Facilities

Equipments was Very Satisfied (3.80) as to the level of client satisfaction on the service quality of Calamba City Civil Registry. This garnered a standard deviation of 0.32 for employees and 0.30 for clients. All indicators were verbally interpreted as Very Satisfied. The indicators “The office had the necessary resources to ensure fast and smooth transactions.” and “Suggestions were available for clients to offer suggestions for improvements or additions to enhance their experience.” yielded the highest mean score of 3.86. Meanwhile, the indicator “The technological advancements or upgrades to meet clients' evolving needs better” received the lowest mean score of responses with 3.75.

It implies that both employees and clients are very satisfied with the implementation of various measures by the City Civil Registry Office to guarantee seamless and efficient services. Notably, the development of the Civil Registry Management System greatly streamlines the process of producing certified true copies of civil registry

documents. Additionally, the provision of three photocopying machines for document reproduction further bolster the speed and efficiency of transactions.

Table 9. Descriptive statistics of the client satisfaction on the service quality in the City Civil Registry of Calamba in terms of equipment and facilities

Indicators	Employee		Clients		Composite	
	Mean	Interpretation	Mean	Interpretation	Mean	Interpretation
1. The office equipped with necessary resources for smooth and fast transactions.	4.00	VS	3.72	VS	3.86	VS
2. Suggestions for improvements or additions to enhance the client experience exist using suggestion boxes.	4.00	VS	3.72	VS	3.86	VS
3. Employees are able to find solutions quickly when experiencing technical difficulties or malfunctions with equipment.	3.90	VS	3.59	VS	3.75	VS
4. Accessibility and condition of facilities and equipment provided by the office are satisfactory.	4.00	VS	3.54	VS	3.77	VS
5. Technological advancements or upgrades to better meet the evolving needs of clients are considered by the office.	3.90	VS	3.54	VS	3.72	VS
Standard Deviation	0.32		0.30			
Composite Assessment	3.96	VS	3.63	VS	3.80	VS

To foster continuous improvement, the Office institutes a customer feedback system utilizing suggestion boxes. The feedback received is addressed by the employees to ensure that client suggestions, comments, and complaints are responded to promptly. The Office also conducts a Customer Survey Satisfaction program to gather feedback from clients on their experience. However, while the Office make significant strides in providing efficient services, it recognizes that technological advancements are necessary to keep pace with the evolving needs of clients. Presently, the Office has an application in place, although it is not yet fully functional. The Office is committed to exploring opportunities for technological upgrades and improvements to further enhance the quality of service delivery to its clients.

Hussen and Worku (2022) provided useful insights that supported the implications drawn from the City Civil Registry Office's initiatives. One of the key takeaways was the significance of quality service and customer satisfaction in increasing service utilization. This was consistent with the Office's efforts to improve its service delivery to ensure client satisfaction. Moreover, the literature highlighted the data gap in the study area, indicating a need for assessments like the one conducted by the Civil Registry Office. This suggested that the Office's measures to implement the Civil Registry Management System and customer feedback mechanisms were aligned with addressing a recognized need for improvement in service quality and client satisfaction. The study's results showed that although the quality of antenatal care (ANC) was low, client satisfaction was moderately low, highlighting the need for improvement in both input and output processes. This aligned with the Office's understanding of the requirement for technological advancements and continuous improvement to meet the changing needs of clients.

In terms of Value for Money

Value for Money was Very Satisfied (3.80) as to the level of client satisfaction on the service quality of Calamba City Civil Registry. This got a standard deviation of 0.31 for employees and 0.28 for clients. All indicators were verbally interpreted as Very Satisfied. Additionally, the indicator "The transparency and breakdown of fees charged by the Calamba City Civil Registry Office for its services were also satisfactory" garnered the highest mean score of 3.84. However, the indicator "The quality and level of service received in exchange for fees paid" received the lowest mean score of responses of 3.76.

It implies that the Calamba City Civil Registry Office is known for its commitment to providing transparent and clear information about their fees. Clients are provided with detailed information about the fees they will be charged, helping them make informed decisions about the services they need. In terms of the quality of service provided, clients generally report that the office provides satisfactory service. They are assisted by courteous and professional staff who are willing to answer questions and provide guidance as needed. However, there are some instances where clients report issues with the accuracy of the documents provided. Specifically, some clients report that the staff responsible for preparing certificates may overlook spelling errors in names, which will cause

complications down the line. Despite these occasional issues, the Calamba City Civil Registry Office remains a reliable service provider for clients in need of civil registry services. The office's commitment to transparency and quality service is evident in the way they interacted with clients and handled their requests.

Table 10. Descriptive statistics of client satisfaction on the service quality in the City Civil Registry of Calamba in terms of value for money

Indicators	Employee		Clients		Composite	
	Mean	Interpretation	Mean	Interpretation	Mean	Interpretation
1. Fees charged by the office for the services are reasonable and justified.	3.80	VS	3.79	VS	3.80	VS
2. Quality and level of service received in exchange for fees paid are satisfactory.	3.80	VS	3.72	VS	3.76	VS
3. The Transparency and breakdown of fees charged by the Calamba City Civil Registry Office for its services are satisfactory.	4.00	VS	3.67	VS	3.84	VS
4. Clients believe that the office's fees accurately reflect the level of effort and resources required to provide the services.	4.00	VS	3.62	VS	3.81	VS
5. There is no additional cost or hidden fee for transactions.	4.00	VS	3.62	VS	3.81	VS
Standard Deviation	0.31		0.28			
Composite Assessment	3.92	VS	3.68	VS	3.80	VS

Kissi et al. (2020) conducted a study on value for money (VfM) within the construction industry, providing a comprehensive framework for understanding the implications of the Calamba City Civil Registry Office's commitment to transparency and quality service. The paper highlighted several external factors that impacted the achievement of VfM in the construction industry, including institutional culture and policy constraints. Similarly, the implication of the Civil Registry Office's commitment to providing transparent and clear information about their fees suggested a proactive approach to addressing institutional barriers. Furthermore, the literature identified technical and decision-making factors as contributing to the challenges in achieving VfM. In the context of the Civil Registry Office, the implication noted occasional issues with the accuracy of documents provided, particularly regarding spelling errors. This aligned with the technical challenges highlighted in the literature and emphasized the importance of attention to detail in service provision. Moreover, human-related factors were identified in the construction industry literature as influencing VfM. The implication echoed this by mentioning that clients were generally assisted by courteous and professional staff. However, it also noted instances where errors were made, indicating the potential impact of human-related factors on service quality. In this regard, the literature highlighted the importance of training and development programs for staff to enhance their technical and interpersonal skills, which could significantly improve service quality.

3.4 Relationship Between Service Quality and Client Satisfaction

Table 11. Analysis of the relationship between service quality and client satisfaction

Service Quality		Client Satisfaction	r value	p value	Remarks	Decision
1	Tangibility	Personnel	.518**	.000	Significant	Reject Ho
		Process	.472**	.000	Significant	Reject Ho
		Facilities and equipment	.427**	.000	Significant	Reject Ho
		Value for money	.400**	.000	Significant	Reject Ho
2	Reliability	Personnel	.398**	.000	Significant	Reject Ho
		Process	.257**	.000	Significant	Reject Ho
		Facilities and equipment	.487**	.000	Significant	Reject Ho
		Value for money	.396**	.000	Significant	Reject Ho
3	Responsiveness	Personnel	.480**	.000	Significant	Reject Ho
		Process	.443**	.000	Significant	Reject Ho
		Facilities and equipment	.374**	.000	Significant	Reject Ho
		Value for money	.401**	.000	Significant	Reject Ho
4	Building Trust	Personnel	.473**	.000	Significant	Reject Ho
		Process	.484**	.000	Significant	Reject Ho
		Facilities and equipment	.536**	.000	Significant	Reject Ho
		Value for money	.425**	.000	Significant	Reject Ho
5	Encouraging Innovation	Personnel	.425**	.000	Significant	Reject Ho
		Process	.570**	.000	Significant	Reject Ho
		Facilities and equipment	.474**	.000	Significant	Reject Ho
		Value for money	.437**	.000	Significant	Reject Ho

There was a significant relationship between the levels of manifestation of service quality and the level of client satisfaction regarding the service quality of Calamba City Civil Registry. The findings showed that the probability values were all 0.000, which was less than the level of significance at .05, leading to the rejection of the null hypothesis. The *r* values ranged between 0.25 to 0.60, indicating a moderately small to high positive correlation. This indicated a substantial link between the levels of manifestation of service quality and the level of client satisfaction regarding the service quality of Calamba City Civil Registry. It also suggested that the more manifestation of service quality, the greater the client satisfaction regarding the service quality of Calamba City Civil Registry.

Aluko et al. (2020) provided strong evidence to support the idea that there is a clear connection between service quality and client satisfaction. It emphasized the importance of high-quality service in achieving customer satisfaction, which is crucial for business success. The literature also provided a structured framework for analyzing client satisfaction, identifying specific technical and managerial indicators that can be used to measure it. The statistical analysis presented in the literature further supported the idea that there is a positive relationship between perceived service quality and client satisfaction. This evidence confirmed that as service quality increases, so does client satisfaction, both in technical and managerial aspects.

4.0 Conclusions

Based on the above-mentioned results of the research, the following conclusions were made:

- a) That the Calamba City Civil Registry Office shows positive aspects in service quality, including effective guidance, competent staff, and responsive handling of inquiries. However, there were areas for improvement such as enhancing amenities, addressing staffing issues, and ensuring equitable treatment of clients.
- b) That there was a clear distinction in how reliability, responsiveness, and assurance were evaluated. There exists a substantial variance between the perspectives of employees and clients regarding the manifestation of service quality in the aforementioned areas.
- c) That the Calamba City Civil Registry Office demonstrates a commitment to client satisfaction through efficient service delivery and continuous improvement. Staff competency, clear procedures, and proactive feedback mechanisms contributed to positive experiences for clients. While areas for enhancement existed, the Office's dedication to adaptability and responsiveness reflected its pursuit of excellence in public service.
- d) That as service quality manifestation increases, so does client satisfaction. This underscores the importance of consistently maintaining and enhancing service quality standards to ensure optimal satisfaction among clients utilizing the services of the Calamba City Civil Registry.
- e) That the proposed action plan is essential to address the problems and challenges encountered by the Calamba City Civil Registry in providing good service quality to the clients.

Based on the results and conclusions reached, the following recommendations are proposed:

- a) The Calamba City Civil Registry Office may prioritize initiatives aimed at enhancing amenities, addressing staffing issues, and ensuring equitable treatment of clients. This may involve investing in facility upgrades, conducting thorough assessments of staffing needs, and implementing policies and training programs to promote fairness and consistency in client interactions.
- b) Given the notable contrast in perceptions between employees and clients regarding service quality dimensions such as reliability, responsiveness, and assurance, it was recommended that the employees initiate dialogue and feedback mechanisms to bridge this gap. Regular communication channels, such as surveys and focus group discussions, can be established to gather insights from both employees and clients, fostering mutual understanding and alignment in service delivery goals.
- c) The Calamba City Civil Registry Office may continue efforts in efficient service delivery and continuous improvement. This can be achieved through ongoing staff training and development programs, the implementation of streamlined procedures, and the establishment of robust feedback mechanisms to identify areas for enhancement and address them promptly.
- d) To further strengthen the relationship between service quality manifestation and client satisfaction, it is recommended to prioritize initiatives aimed at consistently maintaining and enhancing service quality standards. This may involve regular monitoring and evaluation of service delivery processes, soliciting

feedback from clients to identify areas for improvement, and implementing measures to address any gaps or shortcomings identified.

- e) Considering the importance of the proposed action plan in addressing the challenges faced by the Calamba City Civil Registry Office, the office may implement the plan with clear timelines, responsibilities, and monitoring mechanisms in place. Regular review and evaluation of the action plan's progress may also be conducted to ensure its effectiveness in improving service quality and meeting the needs of clients effectively.
- f) Future researchers may consider expanding the scope of their studies to include multiple civil registry offices across different regions for broader insights. Employing a mixed-methods approach, combining qualitative and quantitative research, can provide a more comprehensive understanding of service quality and client satisfaction. Additionally, exploring the impact of specific improvement initiatives on service delivery and client perceptions would be valuable.

5.0 Contributions of Authors

This paper has a single author and confirms that the author reviewed this study.

6.0 Funding

This work received no specific grant from any funding agency.

7.0 Conflict of Interests

The authors declare no conflicts of interest about the publication of this paper.

8.0 Acknowledgment

The researcher would like to express her deepest appreciation to everyone who provided and helped her accomplish this piece of work. The researcher would like to thank the following people:

Firstly, heartfelt thanks to God Almighty for granting her life and the strength to pursue her goals, serving as her ultimate source of guidance and determination without whom she could not have achieved anything;

Secondly, Dr. Ramir R. Larino, her thesis adviser, whose insightful guidance and encouragement propelled her forward, instilling in her the significance of her research;

Thirdly, Dr. Eulalia M. Javier, her quantitative data analyst;

Fourthly, Ms. Ronavie O. Talon, her grammar and format editor;

Her friends and colleagues, for all the support and companionship they provided while this work was in progress, especially to Ms. Ednalina S. Masongsong, Ms. Ma. Zinnia T. Gecolea, Ms. Donata M. Magpantay, Mr. John Bernard D. Calabia, Ms. Angela D. Elec, Mr. Joseph Tulauan, Ms. Ma. Elaine F. De Guzman, Ms. Jannice D. Naval, Ms. Miriam Videña, Ms. Jan Richelle A. Gotengco, Ms. Susana D. Ofren, Ms. Leonora P. Magpantay, Ms. Emiliana V. Gonzales, Mr. Eric Jason E. Hamor, Ms. Mary Grace M. Rizal, Ms. Regina J. Baylon, Ms. Wilma V. Carurucan, Ms. Nery A. San Juan, Ms. Myleen R. Revilloza, Ms. Marilou P. Rodriguez, Mr. Jeff M. Tangcango, Mr. Philip Albert Nicolai C. Masongsong, Ms. Ma. Danica M. Motas, and Mr. Bong Paulo V. Copas, for the aid they extended to the researcher;

Dr. Regina G. Almonte, for her advice in conducting the research;

Ms. Mildred S. Maranan and Mr. Edrian D. Mercado, her classmates, for their moral support and encouragement;

Dr. Ma. Lorena M. Tagala, one of the panelists and her proofreader, for her motherly care and treatment;

Mr. Alfredo G. Perez, Jr., for his advice and encouragement to the researcher; and

Most importantly, her family, for their unwavering love, support, and understanding throughout her research journey.

9.0 References

- Aluko, O. R., Idoro, G. I., & Mewomo, M. C. (2020). Relationship between perceived service quality and client satisfaction indicators of engineering consultancy services in building projects. *Journal of Engineering, Design and Technology*, ahead-of-print(ahead-of-print). <https://doi.org/10.1108/jedt-03-2020-0084>
- Berinyuy, B. (2021). Service quality, a correlation of customer expectation and customer perception of services received responsiveness and empathy in Shisong Hospital. *International Journal of Social Science and Human Research*, 4(12). <https://doi.org/10.47191/ijsshr/v4-i12-07>
- Dam, S. M., & Dam, T. C. (2021). Relationships between service quality, brand image, customer satisfaction, and customer loyalty. *The Journal of Asian Finance, Economics and Business*, 8(3), 585-593. <https://koreascience.kr/article/JAKO202106438543453.page>

- Emiru, A. A., Alene, G., & Debelew, G. T. (2020). Women's satisfaction with the quality of antenatal care services rendered at public health facilities in Northwest Ethiopia: The application of partial proportional odds model. *BMJ Open*, 10(9), e037085. <https://doi.org/10.1136/bmjopen-2020-037085>
- Htang, L. K. (2021). A look at university student service quality and satisfaction. *Quality Assurance in Education*, 29(2/3), 101-115. <https://doi.org/10.1108/qa-09-2020-0108>
- Hussen, M. A., & Worku, B. T. (2022). Quality of antenatal care service and factors associated with client satisfaction at public health facilities of Bele Gasgar District. *Journal of Patient Experience*, 9, 237437352210831. <https://doi.org/10.1177/23743735221083163>
- Kanori, E., Kimani, G., & Kalai, J. (2020). Service tangibility, teaching and learning, and students' satisfaction at the University of Nairobi, Kenya. *Journal of Pedagogy, Andragogy and Heutagogy in Academic Practice*, 1(2), 16-28. <https://uonjournals.uonbi.ac.ke/ojs/index.php/pedagogy/article/view/681>
- Kissi, E., Adjei-Kumi, T., Twum-Ampofo, S., & Debrah, C. (2020). Identifying the latent shortcomings in achieving value for money within the Ghanaian construction industry. *Journal of Public Procurement*, 20(3), 313-330. <https://doi.org/10.1108/jopp-11-2019-0075>
- Ogbu, C. P., & Imafidon, M. O. (2021). Influence of selection criteria on clients' satisfaction with construction consultancy services in Nigeria. *Journal of Engineering, Design and Technology*, ahead-of-print(ahead-of-print). <https://doi.org/10.1108/jedt-02-2021-0081>
- Setiono, B. A., & Hidayat, S. (2022). Influence of service quality with the dimensions of reliability, responsiveness, assurance, empathy and tangibles on customer satisfaction. *International Journal of Economics, Business and Management Research*, 6(9), 330-341. <https://doi.org/10.51505/ijebmr.2022.6924>
- Smith, J. A. (2019). Advancements in civil registry systems: A comparative analysis. *Journal of Public Administration*, 45(2), 123-145.
- Supriyanto, A., Wiyono, B. B., & Burhanuddin, B. (2021). Effects of service quality and customer satisfaction on loyalty of bank customers. *Cogent Business & Management*, 8(1), 1937847. <https://doi.org/10.1080/23311975.2021.1937847>
- World Bank. (2018). The state of identification systems in Africa (A synthesis of country assessments). Washington, DC: World Bank.

Development and Efficacy of Child's Holistic, Individualized Learning and Development Program for Children with Autism

Raul S. Gana*, Marie Ann S. Vargas
University of Santo Tomas, Manila, Philippines

*Corresponding Author Email: raul.gana.gs@ust.edu.ph

Dated received: May 8, 2024

Date revised: June 17, 2024

Date accepted: June 24, 2024

Originality: 85%

Grammarly Score: 99%

Similarity: 15%

Recommended citation:

Gana, R., Vargas, M.A. (2024). Development and efficacy of child's holistic, individualized learning and development program for children with autism. *Journal of Interdisciplinary Perspectives*, 2(8), 114-119.
<https://doi.org/10.69569/jip.2024.0228>

Abstract. The primary objective of treating Autism Spectrum Disorder (ASD) is to alleviate symptoms that might disrupt everyday functioning and overall well-being. With this aim in mind, this research sought to highlight the benefits of employing the Child's Holistic, Individualized Learning and Development (CHILD.) Program as a therapeutic approach to enhance the quality of life for children with ASD. Utilizing a mixed methods research approach, the study was conducted at a child learning and development center, involving a cohort of 20 student participants. The researcher employed the Developmental Assessment of Young Children-Second Edition (DAYC-2) to gather data. From the significant findings of the study, it is inferred that the Child's Holistic, Individualized Learning, and Development Program effectively enhances the behavior of children diagnosed with ASD. Additionally, the locally developed program emerges as a credible and effective psychological intervention, presenting considerable potential for improving the skills and conduct of children with ASD. These findings emphasize the significance of personalized interventions to meet the varied needs of individuals with ASD, offering promising avenues for future research and practical implementation in clinical settings.

Keywords: Autism Spectrum Disorder (ASD); Child development; Individualized learning; Behavioral intervention; Quality of life.

1.0 Introduction

Autism Spectrum Disorder (ASD) presents unique challenges to children's learning and development, necessitating specialized interventions tailored to individual needs. In response to this imperative, the Child's Holistic, Individualized Learning and Development (CHILD.) Program emerges as a comprehensive approach aimed at addressing the multifaceted requirements of children with autism (Smith et al., 2021).

As the prevalence of autism continues to rise globally, there is a growing urgency to provide effective interventions that optimize children's potential and facilitate their integration into society (Jones & Brown, 2019). Traditional educational frameworks often struggle to accommodate the diverse needs of children with ASD, highlighting the necessity for innovative and personalized approaches (Anderson & Hudson, 2022). The CHILD. The program represents a concerted effort to bridge this gap by offering a holistic and individualized curriculum tailored to each child's unique strengths, challenges, and learning styles (Makrygianni et al., 2018).

Drawing upon principles of Applied Behavior Analysis (ABA), developmental psychology, and evidence-based practices, the CHILD. The program adopts a multidisciplinary approach to foster comprehensive growth across cognitive, communicative, social, emotional, and adaptive domains (Cherry, 2024). By prioritizing the child's

autonomy, dignity, and well-being, the program aims to create a nurturing environment conducive to learning, exploration, and self-discovery (Obibuba, 2020).

Central to the CHILD Program is its emphasis on personalized intervention plans, which are collaboratively developed by a team of educators, therapists, and caregivers (Marlina, 2024). These plans integrate diverse evidence-based techniques, including discrete trial training, positive reinforcement, social skills training, sensory integration, and assistive technology, among others (Agi, 2020). By tailoring interventions to each child's unique profile and progress, the program seeks to optimize outcomes and promote long-term success (Raypole, 2021).

This paper presents an in-depth examination of the development process behind the CHILD. Program, elucidating its theoretical foundations, pedagogical approaches, and intervention strategies (Scott et al., 2023). Furthermore, it comprehensively analyzes the program's efficacy based on empirical data, including pre-and post-intervention assessments, qualitative observations, and stakeholder feedback (Lory et al., 2020). Through rigorous evaluation, this study aims to contribute to the growing body of research on effective interventions for children with autism and inform future practice and policy initiatives in special education.

In the Philippines, most developmental pediatricians advocate early intensive behavioral intervention for ASD. Consequently, parents of children diagnosed with ASD often explore various treatment modalities they believe are best for their child. While many treatment modalities have been attempted, structured educational programs tailored to the child's developmental level, such as the Child's Holistic, Individualized Learning and Development (CHILD.) Programs have stood the test of time and proven effective for all children with ASD (Siegel, 2003). This paper serves as a testament to the ongoing commitment to innovation and excellence in the field of autism intervention. It underscores the importance of tailored approaches in promoting the well-being and success of children with special needs.

2.0 Methodology

2.1 Research Design

The study utilized mixed methods research methodology. Mixed methods research involves collecting, analyzing, and integrating both quantitative (e.g., experiments, surveys) and qualitative (e.g., focus groups, interviews) research. This approach is employed when the integration of these methods provides a more comprehensive understanding of the research problem. The present study consisted of two phases. The first phase involved the development of a holistic and individualized intervention program for children with Autism Spectrum Disorder (ASD). The second phase entailed testing the efficacy of the developed program using a mixed quantitative and qualitative research design.

2.2 Research Participants

The study was conducted at a child learning and development center in Quezon City, Philippines. This research focuses on a Therapy Center and Home Care Center catering to Children with Autism Spectrum Disorder (ASD), from which 20 student participants were selected. The participants in the study are divided into two sets: For the pilot study, participants are children diagnosed with Autism Spectrum Disorder (ASD) without any other co-morbid neurodevelopmental disability, with varied ages and capacities. For the main study, children participants are those recently diagnosed with Autism Spectrum Disorder (ASD), aged 4 years old during the study duration, newly referred to the CHILD. Center where the research will be conducted, and have not undergone any form of therapy from other professionals. Children who are existing students of the CHILD. Centers, diagnosed with conditions other than Autism Spectrum Disorder (ASD) or with co-morbid neurodevelopmental disabilities, and who have undergone therapy before the study are excluded. Additionally, children under 4 years old or over 5 years old are not considered. The student participants were selected for the study through a purposive sampling procedure. The primary objective of the proposed study is to develop an effective program for children with Autism Spectrum Disorder (ASD). To ensure the selection of appropriate student respondents, it is essential to establish efficient inclusion and exclusion criteria.

2.3 Research Instrument

For the pre-test and post-test of the children-participants, the researcher used the Developmental Assessment of Young Children-Second Edition (DAYC-2) an individually administered, norm-referenced measure of early

childhood development in the following domains: cognition, communication, social-emotional development, physical development, and adaptive behavior for children. The DAYC-2 is a popular test used to identify children from birth through 5 to 11 with possible delays in the following domains: cognition, communication, social-emotional development, physical development, and adaptive behavior.

2.4 Data Gathering Procedure

The data gathering process for this study comprises two distinct phases. In the initial phase, the researcher conducted an extensive review of literature and related materials to identify areas where children with Autism Spectrum Disorder (ASD) typically experience delays, contributing to behavioral concerns. The proposed Child's Holistic, Individualized, and Development (CHILD.) The program is then presented to a panel of experts including professionals such as Developmental Pediatricians, Behavior Specialists, Special Educators, ABA Practitioners, Clinical Psychologists, and Speech Therapists. Following expert evaluation and refinement through a Focus Group Discussion, the program undergoes pilot testing with ASD-diagnosed participants lacking comorbid neurodevelopmental disabilities. Feedback from this pilot run is collated and used to revise the program content. The outcome of this phase is the finalized Child's Holistic, Individualized Learning, and Development (CHILD.) Program.

In the subsequent phase, the developed program is implemented in a real-world setting. Potential participants are identified through referrals to the CHILD. Center, and upon obtaining parental consent, children undergo an Initial Assessment/Pre-Test using the DAYC 2 tool. This assessment, coupled with qualitative interviews with parents, helps gauge the child's current abilities and behavioral concerns. Treatment sessions using the CHILD. Programs are then scheduled, with six hours per week over three months. Following completion of the treatment, a re-assessment/post-test is conducted to measure any changes or improvements in the child's abilities. This includes a post-treatment interview with parents. The process continues until the desired sample size of twenty participants is achieved.

2.5 Ethical Considerations

This research study adhered to ethical guidelines to ensure the well-being and rights of the student participants. Participation in the study was voluntary, and as minors, their parents were required to sign an Informed Consent Form. Participants had the option to withdraw from the study at any point if they felt uncomfortable. Measures were taken to protect participants from physical, social, psychological, and other forms of harm, with utmost care to minimize risks. The dignity and well-being of the student participants were always prioritized and safeguarded throughout the research process. Confidentiality of research data was maintained at all times, and respondents' rights were upheld to maintain scientific and academic integrity. Additionally, proper communication of results was ensured to prevent plagiarism or research misconduct.

2.6 Data Analysis

The data gathered from the participants using the pre-test and post-test of the participants using the Developmental Assessment of Young Children-Second Edition (DAYC-2) were analyzed using the Statistical Package for the Social Sciences (SPSS). This study employed several statistical treatments such as Analysis of Variance (ANOVA). ANOVA is a statistical technique used to compare events, groups, or processes and determine differences among them. It enabled the researcher to ascertain which method is most suitable for performing a task. By analyzing the results, the feasibility and effectiveness of a particular method can be evaluated, providing valuable insights for the study.

3.0 Results and Discussion

3.1 Pretest Performance of the Respondents

Before introducing the respondents to the CHILD Program, the researcher administered a pretest. This step was crucial in the study as it allowed the researcher to assess the current level of the respondents. By conducting the pretest, the researcher gained insight into the baseline abilities, behaviors, and needs of the participants, which served as a valuable point of reference for evaluating the effectiveness of the CHILD Program.

Table 1. The pretest result of the respondents

STANDARD SCORE	FREQUENCY	%	DESCRIPTIVE TERM
Above 130	0	0.00	Very Superior
121-130	0	0.00	Superior
111-120	4	20.0	Above Average
90-110	1	5.00	Average
80-89	15	75.0	Below Average
70-79	0	0.00	Poor
Below 70	0	0.00	Very Poor
OVERALL		92.6	Average

Based on Table 1, the initial assessment scores of the respondents indicate that 75% of them were categorized as below average, with 20% described as average, and 5% classified as poor. The mean score during the pre-test was 92.55, suggesting that the overall group performance falls within the average range. Participants with below average score means that they are way beyond their age-level performances in the cognition, communication, social-emotional development, physical development, and adaptive behavior domains. The standard deviation, calculated as 12.3, reflects the dispersion of scores around the mean, providing additional insight into the variability of individual performance within the group.

3.2 Posttest Performance of the Respondents

Table 2. The post-test results of the respondents

STANDARD SCORE	FREQUENCY	%	DESCRIPTIVE TERM
Above 130	0	0.00	Very Superior
121-130	0	0.00	Superior
111-120	4	20.0	Above Average
90-110	5	25.0	Average
80-89	10	50.0	Below Average
70-79	1	5.00	Poor
Below 70			Very Poor
OVERALL		96.5	Average

As indicated in Table 2, following the posttest, 20% of the respondents scored above average, with 25% scoring average, and 50% evaluated as below average. As seen in the post-test of the respondents using the Developmental Assessment of Young Children-Second Edition (DAYC-2) as assessment tool, an increase in the areas of cognition, communication, social-emotional development, physical development, and adaptive behavior after undergoing the Child's Holistic, Individualized Learning and Development Program. Additionally, 5% of respondents scored poor. The mean score during the posttest was 96.55, suggesting that the overall group performance remained within the average range. The standard deviation, calculated as 14.77, indicates the dispersion of scores around the mean, providing insight into the variability of individual performance within the group following the intervention.

3.3 Difference between Pre-test and Post-Test Scores

Table 3. Test of difference between the pretest and posttest of the respondents

MEASUREMENT	MEAN	SD.	DF.	COMP. VALUES	TABULAR VALUES	DESCRIPTION	DECISION
Pretest	92.55	12.31	19	2.345	2.093	Significant	Reject Null Hypothesis
Posttest	96.55	14.77					

As illustrated in Table 3, the respondents' mean score during the pretest was 92.55, with a standard deviation of 12.31. Following exposure to the CHILd Program and the post-test administration, the mean score increased to 96.55. The standard deviation also increased to 14.77. Upon computing the T-value at a significance level of 0.05, the result was found to be 2.345, exceeding the tabular value of 2.093. This indicates that the null hypothesis, which suggests no significant difference between the posttest and pretest scores of children with Autism Spectrum Disorder (ASD), was rejected. Therefore, there is a significant difference in the pretest and posttest scores of children with ASD after implementing the CHILd Program. This suggests that implementing the CHILd Program contributed to an improvement in the areas of cognition, communication, social-emotional development, physical development, and adaptive behavior of the respondents.

The World Health Organization (WHO) (2022) describes evidence-based psychosocial interventions as interventions that can improve communication and social skills, positively impacting the well-being and quality of life of both autistic individuals and their caregivers. Participants initially referred to the CHILd Center due to manifesting negative behaviors were the focus of this study. This study developed a locally constructed Psychological Program objectively designed for children diagnosed with Autism Spectrum Disorder (ASD). The development of this program is rooted in Behaviorism, particularly the principles espoused by BF. Skinner, which posit that human behavior can be learned through practice in natural phenomena (Fiest, 2013).

4.0 Conclusion

Based on the noteworthy findings of the study, the researcher concludes that the Child's Holistic, Individualized Learning, and Development Program demonstrated efficacy in improving the adaptive behavior, cognition, communication, social-emotional development, and physical development of the participants who are children diagnosed with Autism Spectrum Disorder (ASD). With the use of Developmental Assessment of Young Children-Second Edition (DAYC-2), an assessment tool that has an standard scores, which provides percentile ranks, and age equivalents for each of its five (5) domains, that was used as pretest and post-test for the study. Therefore, the locally developed program emerges as a reliable and valid Psychological Program, offering substantial potential to enhance the skills and behavior of children with ASD. These conclusions underscore the importance of tailored interventions in addressing the diverse needs of individuals with ASD, offering promising avenues for further research and practical applications in clinical settings.

5.0 Contributions of Authors

The authors indicate equal contribution to each section. The authors reviewed and approved the final work.

6.0 Funding

This work received no specific grant from any funding agency.

7.0 Conflict of Interests

The authors declare no conflicts of interest about the publication of this paper.

8.0 Acknowledgment

The researcher extends heartfelt gratitude to the Almighty for guiding this study to its super delayed completion. Special appreciation is reserved for Dr. Marie Ann Sunga Vargas, whose expert guidance and valuable insights significantly enhanced the quality of the research. Gratitude is also extended to the dedicated teachers of the CHILd Center for their unwavering support throughout the study. The researcher acknowledges UST Graduate School Dean, Michael Anthony C. Vasco Ph.D, for the support and understanding, Prof. Dr. Grecebio Jonathan D. Alejandro, the UST Graduate Research Director, for his invaluable patience and understanding. To Ms. Rowena L. Batoon and Mr. Allan T. Megote the Support Staff of the Office for Graduate Research for all the support. Additionally, thanks are due to friends Dr. Rosalito De Guzman, Mrs. Rosalie Tubog, Gemma Perucho, Joeriza Ruaya and Dr. Cynthia Castrillo MD and Mr. Carfel Dimapilis and Ms. Jelly Cabug for listening to all my rants and for their encouragement. The researcher expresses profound gratitude to all the parents of the student participants for their participation. Lastly, this accomplishment is offered to the Saygan-Gana family and a tribute is paid to the researcher's Nanay, Tatay and Kuya Noel whose presence is deeply missed but whose spirit continues to inspire.

9.0 References

- Allam, H., Eldine, N. G., & Helmy, G. (2008). Scalp acupuncture effect on language development in children with autism: a pilot study. *The Journal of Alternative and Complementary Medicine*, 14(2), 109-114. doi:10.1089/acm.2007.0508.
- Adina ABA. (2024, May 5). The history of ABA therapy. <https://www.adinaaba.com/post/history-of-aba-therapy>
- Agi, W. C. (2020). Influence of Negative Reinforcement on Teaching Exceptional Children in Rivers State. *International Journal of Innovative Education Research*, 8(1), 52-61. <https://seahipaj.org/journals-ci/mar-2020/IJIER/full/IJIER-M-7-2020.pdf>
- Al-Kindi Publisher. (2023). Development of Discrete Trial Training (DTT)
- Anderson, A., & Hudson, A. (2022). Applied Behavior Analysis. In Elsevier eBooks (pp. 67-88). <https://doi.org/10.1016/b978-0-12-818697-8.00088-1>
- Anderson, K. (2022, October 4). What is applied behavior analysis and why is it important? Graduate Blog. [https://graduate.northeastern.edu/resources/what-is-applied-behavior-analysis/Autism Learning Partners. \(2024\). Natural Environment Teaching \(NET\). Retrieved from https://www.autismlearningpartners.com/natural-environment-teaching-net](https://graduate.northeastern.edu/resources/what-is-applied-behavior-analysis/Autism Learning Partners. (2024). Natural Environment Teaching (NET). Retrieved from https://www.autismlearningpartners.com/natural-environment-teaching-net)
- Ashcroft, W., & Keohane, J. (2010). Success Strategies for Teaching Kids With Autism. *PruFrock*.
- Baron-Cohen, S., Lombardo, M. V., Auyeung, B., Ashwin, E., Chakrabarti, B., Knickmeyer, R. (2011). Why are autism spectrum conditions more prevalent in males? *PLoS Biology*, 9(6), e1001088. <https://doi.org/10.1371/journal.pbio.1001088>
- Bass, M. M., Duchowny, C. A., & Labre, M. M. (2009). The effect of therapeutic horseback riding on social functioning in children with autism. *Journal of Autism and Developmental Disorders*, 39, 1261-1267. <https://doi.org/10.1007/s10803-009-0734-3>
- Baudouin, S. J., Gaudias, J., Gerharz, S., Hatstatt, L., Zhou, K., Punnakal, P., et al. (2012). Shared synaptic pathophysiology in syndromic and nonsyndromic rodent models of autism. *Science*, 338(6103), 128-132. <https://doi.org/10.1126/science.1224159>
- Bayes, A., van de Lagemaat, L. N., Collins, M. O., Croning, M. D. R., Whittle, I. R., Choudhary, J. S., et al. (2011). Characterization of the proteome, diseases, and evolution of the human postsynaptic density. *Nature Neuroscience*, 14(1), 19-21. <https://doi.org/10.1038/nn.2719>
- Ben-David, E., & Shifman, S. (2013). Combined analysis of exome sequencing points toward a major role for transcription regulation during brain development in autism. *Molecular Psychiatry*, 18(10), 1054-1056. <https://doi.org/10.1038/mp.2013.27>
- Ben-Itzhak, E., & Zachor, D. A. (2007). The effects of intellectual functioning and autism severity on outcome of early behavioral intervention for children with autism. *Research in Developmental Disabilities*, 28(3), 287-303. <https://doi.org/10.1016/j.ridd.2006.03.002>
- Betancur, C. (2011). Etiological heterogeneity in autism spectrum disorders: More than 100 genetic and genomic disorders and still counting. *Brain Research*, 1380, 42-77. <https://doi.org/10.1016/j.brainres.2010.11.078>
- Berry, A., Borgi, M., Francia, N., Alleva, E., & Cirulli, F. (2013). Use of assistance and therapy dogs for children with autism spectrum disorders: A critical review of the current evidence. *Journal of Alternative and Complementary Medicine*, 19(2), 73-80. <https://doi.org/10.1089/acm.2011.0835>

- Blake, J. A., Bult, C. J., Kadin, J. A., Richardson, J. E., & Eppig, J. T. (2011). The Mouse Genome Database (MGD): Premier model organism resource for mammalian genomics and genetics. *Nucleic Acids Research*, 39(D1), 842–848. <https://doi.org/10.1093/nar/gkq1008>
- Braun, J. M., Kalkbrenner, A. E., Just, A. C., Yoltos, K., Calafat, A. M., Sjödin, A., et al. (2014). Gestational exposure to endocrine-disrupting chemicals and reciprocal social, repetitive, and stereotypic behaviors in 4- and 5-year-old children: The HOME study. *Environmental Health Perspectives*, 122(5), 513–520. <https://doi.org/10.1289/ehp.1307259>
- Bottema-Beutel, K., Kapp, S. K., Lester, J. N., Sasson, N. J., & Hand, B. N. (2021). Concerns about ABA-based intervention: An evaluation and recommendations. *Journal of Autism and Developmental Disorders*, 51(11), 4056–4067. <https://doi.org/10.1007/s10803-021-05137-y>
- Brock, M. E., & Carter, E. W. (2019). Effectiveness of peer-mediated interventions on children with autism spectrum disorder (ASD): a systematic review. *Early Child Development and Care*, 189(4), 597–612. <https://doi.org/10.1080/03004430.2019.1580275>
- Borgi, M., & Cirulli, F. (2015). Attitudes toward animals among kindergarten children: Species preferences. *Anthrozoös*, 28(1), 45–59. <https://doi.org/10.2752/089279315X14129350721891>
- Borgi, M., Cogliati-Dezza, L., Brelsford, V., Meints, K., & Cirulli, F. (2014). Baby schema in human and animal faces induces cuteness perception and gaze allocation in children. *Frontiers in Psychology*, 5, 411. <https://doi.org/10.3389/fpsyg.2014.00411>
- Bronson, C., Brewerton, K., Ong, J., Palanca, C., & Sullivan, S. J. (2010). Does hippotherapy improve balance in persons with multiple sclerosis: A systematic review. *European Journal of Physical and Rehabilitation Medicine*, 46, 347–353.
- Brothers, K. B., Glascoe, F. P., & Robertshaw, N. S. (2008). PEDS: Developmental Milestones – An accurate brief tool for surveillance and screening. *Clinical Pediatrics*, 47(3), 271–279. <https://doi.org/10.1177/000922807309419>
- Brown, H. K., Ouellette-Kuntz, H., Hunter, D., & Kelley, E. (2010). Assessing need in school-aged children with an autism spectrum disorder. *Research in Autism Spectrum Disorders*, 4(4), 539–547. <https://doi.org/10.1016/j.rasd.2009.12.009>
- Bruder, M. B. (2010). Early childhood intervention: A promise to children and families for their future. *Exceptional Children*, 76(3), 339–355. <https://doi.org/10.1177/001440291007600306>
- Bryant, G. M., Davies, K. J., & Newcombe, R. G. (2008). The Denver Developmental Screening Test. Achievement of test items in the first year of life by Denver and Cardiff infants. *Developmental Medicine & Child Neurology*, 16(4), 475–484. <https://doi.org/10.1111/j.1469-8749.1974.tb03372.x>
- Byrge, L., Dubois, J., Tyszk, J. M., Adolphs, R., & Kennedy, D. P. (2015). Idiosyncratic brain activation patterns are associated with poor social comprehension in autism. *Journal of Neuroscience*, 35(14), 5837–5850. <https://doi.org/10.1523/JNEUROSCI.5182-14.2015>
- Casenhiser, D. M., Shanker, S. G., & Stieben, J. (2013). Learning through interaction in children with autism: Preliminary data from a social-communication-based intervention. *Autism*, 17(2), 220–241. <https://doi.org/10.1177/1362363111422052>
- Chahrour, M. H., Yu, T. W., Lim, E. T., Ataman, B., Coulter, M. E., Hill, R. S., et al. (2012). Whole-exome sequencing and homozygosity analysis implicate depolarization-regulated neuronal genes in autism. *PLoS Genetics*, 8(4), e1002635. <https://doi.org/10.1371/journal.pgen.1002635>
- Chanda, S., Aoto, J., Lee, S. J., Wernig, M., & Südhof, T. C. (2015). Pathogenic mechanism of an autism-associated neuroligin mutation involves altered AMPA-receptor trafficking. *Molecular Psychiatry*, 20(2), 299–310. <https://doi.org/10.1038/mp.2015.20>
- Cherry, K. (2024, January 9). What is ABA therapy? Verywell Mind. <https://www.verywellmind.com/what-is-an-aba-design-2794809>
- Child Mind Institute. (n.d.). The Controversy Around ABA. Retrieved from <https://childmind.org/article/controversy-around-applied-behavior-analysis/>
- Contesse, V. A., Gage, N. A., & Lane, H. B. (2021). Practical use of Single-Case Research design to target improved behavioral outcomes for students with SLD. *Learning Disability Quarterly*, 46(1), 32–45. <https://doi.org/10.1177/07319487211041127>
- Craig, A. M., & Kang, Y. (2007). Neurexin-neuroligin signaling in synapse development. *Current Opinion in Neurobiology*, 17(1), 43–50. <https://doi.org/10.1016/j.conb.2007.01.011>
- Cerino, S., Cirulli, F., Chiarotti, F., & Seripa, S. (2011). Non-conventional psychiatric rehabilitation in schizophrenia using therapeutic riding: The FISE multicentre Pindar project. *Annali dell'Istituto Superiore di Sanità*, 47(4), 409–414. https://doi.org/10.4415/ann_11_04_13
- Church, C., & Coplan, J. (2010). The benefits of music therapy for children with autism spectrum disorders: Evidence-based research. *Caring*, 29(5), 12–15.
- Cirulli, F., Borgi, M., Berry, A., Francia, N., & Alleve, E. (2011). Animal-assisted interventions as innovative tools for animal and human health and welfare. *Animal Frontiers*, 1(1), 5–11. <https://doi.org/10.2527/af.2011-0008>
- Corbett, B. A., Swain, D. M., Coke, C., Simon, D., Newsom, C., Houckins-Juarez, N., et al. (2014). Improvement in social deficits in autism spectrum disorders using a theatre-based, peer-mediated intervention. *Autism Research*, 7(1), 4–16. <https://doi.org/10.1002/aur.1341>
- Department of Health, Victoria, Australia. (2024, February 2). Restrictive interventions. [health.vic.gov.au. https://www.health.vic.gov.au/mental-health-and-wellbeing-act-handbook/treatments-and-interventions/restrictive-interventions](https://www.health.vic.gov.au/mental-health-and-wellbeing-act-handbook/treatments-and-interventions/restrictive-interventions)
- Didehban, N., Allen, T., Kandalaf, M., Krawczyk, D., & Chapman, S. (2016). Virtual reality social cognition training for children with high functioning autism. *Computers in Human Behavior*, 62, 703–711. <https://doi.org/10.1016/j.chb.2016.04.033>
- Diehl, J. J., Bennetto, L., & Young, E. C. (2006). Story recall and narrative coherence of high-functioning children with autism spectrum disorders. *Journal of Abnormal Child Psychology*, 34(1), 87–101. <https://doi.org/10.1007/s10802-005-9003-x>
- Doherty, R. F. (2010). Using the iPad to support autistic students in the classroom. *Journal of Special Education Technology*, 25(3), 31–38. <https://doi.org/10.1177/016264341002500305>
- Duncan, A. W., & Klinger, L. G. (2010). Autism spectrum disorders: Building social skills in group therapy. *Pediatric Nursing*, 36(5), 278–285.
- Dunn, M. E., Burbine, T., Bowers, C. A., & Tantleff-Dunn, S. (2001). Moderators of stress in parents of children with autism. *Community Mental Health Journal*, 37(1), 39–52. <https://doi.org/10.1023/A:1026592305436>
- Elementary Classrooms: A Conceptual Replication. *Journal of Special Education Apprenticeship*, 9(2), Article 2. <https://scholarworks.lib.csusb.edu/josea/vol9/iss2/2/>
- Ethical principles and practice standards. (n.d.). Council for Exceptional Children. <https://exceptionalchildren.org/standards/ethical-principles-and-practice-standards>
- Ewa, J. A., & Nanjwan, J. (2019). Attitudes of Primary School Children with Hearing Impairment toward Visual Arts and School Refusal. *ResearchGate*. https://www.researchgate.net/publication/337153604_Atitudes_of_Primary_School_Children_with_Hearing_Impairment_toward_Visual_Arts_and_School_Refusal_Tendencies_in_an_Inclusive_Education_Setting_in_Calabar_Education_Zone_Nigeria
- Fisher, W. W., Piazza, C. C., & Roane, H. S. (2021). Applied Behavior Analysis: Principles and Procedures.
- Flores, M. M., & Hott, B. L. (2022). Introduction to a special series on Single Research Case Design: Information for peer reviewers and researchers designing behavioral interventions for students with SLD. *Learning Disability Quarterly*, 073194872210852. <https://doi.org/10.1177/07319487221085267>
- García, L. A., & Harrison, S. T. (2022). Enhancing Verbal Communication in Children with Autism Spectrum Disorder: The Role of Positive Reinforcement. *Autism Research and Treatment*, 14(2), 45–58.
- Garry, M., Pear, J., & Fitch, C. (2019). Behavior Modification: What it is and how to do it. *Psychology Teaching Review*, 25(2), 119–120. <https://doi.org/10.53841/bpspr.2019.25.2.119>
- Henderson, J. T., Henninger, M., Bean, S. I., Senger, C. A., Redmond, N., & O'Connor, E. A. (2020, August 1). Behavioral counseling interventions to prevent sexually transmitted infections: A systematic evidence review for the U.S. Preventive Services Task Force. NCBI Bookshelf. <https://www.ncbi.nlm.nih.gov/books/NBK562383/>
- Hirsch, S. E., Bruhn, A. L., et al. (2020). Developing and Implementing FBA-BIPs in intervention on social skills for children with autism spectrum disorder: a randomized controlled trial. *National Library of Medicine*, 12(3), 123–134. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7137870/#t1>
- Hogue, A., Henderson, C. E., Becker, S. J., & Knight, D. K. (2018). Evidence Base on Outpatient Behavioral Treatments for Adolescent Substance Use, 2014–2017: Outcomes, treatment delivery, and Promising Horizons. *Journal of Clinical Child and Adolescent Psychology*, 47(4), 499–526. <https://doi.org/10.1080/15374416.2018.1466307>
- Hyman, S.L., Levy, S.E., Myers, S.M., & AAP Council on Children with Disabilities, Section on developmental and behavioral pediatrics. (2020). Identification, evaluation, and management of children with autism spectrum disorder. *Pediatrics*, 145(1), e20193447.
- Innis, N. K. (1981). Ethics of behavior modification: Behavioral and medical psychology. *Social Science & Medicine*. Part F, Medical & Social Ethics, 15(1), 69–73. [https://doi.org/10.1016/0271-5392\(81\)90028-9](https://doi.org/10.1016/0271-5392(81)90028-9)
- Koegel, R. L., & Koegel, L. K. (2019). A review of research on the use of naturalistic teaching procedures to promote spontaneous communication. *Journal of Applied Behavior Analysis*, 52(3), 632–655. <https://doi.org/10.1002/jaba.523>
- Law, E., Fisher, E., Eccleston, C., & Palermo, T. M. (2019). Psychological interventions for parents of children and adolescents with chronic illness. *Cochrane Library*, 2021(6). <https://doi.org/10.1002/14651858.cd009660.pub4>
- Lory, C., Mason, R. A., Davis, J. L., Wang, D., Kim, S. Y., Gregori, E., & David, M. (2020). A Meta-analysis of Challenging Behavior Interventions for Students with Developmental Disabilities in Inclusive School Settings. *Journal of Autism and Developmental Disorders*, 50(4), 1221–1237. <https://doi.org/10.1007/s10803-019-04329-x>
- MacLeod, K., Causton, J. N., Radcl, M., & Radcl, P. (2017). Rethinking the Individualized Education Plan process: voices from the other side of the table. *Disability & Society*, 32(3), 381–400. <https://doi.org/10.1080/09687599.2017.1294048>
- Makrygianni, M. K., Gena, A., Katoudi, S., & Galanis, P. (2018). The effectiveness of applied behavior analytic interventions for children with Autism Spectrum Disorder: A meta-analytic study. *Research in Autism Spectrum Disorders*, 51, 18–31. <https://doi.org/10.1016/j.rasd.2018.03.006>
- Mandriota, M. (2021, November 11). All about operant conditioning. *Psych Central*. <https://psychcentral.com/health/operant-conditioning#how-it-works>
- Marlina. (2018). Increasing Social Behavior through Self-Management Strategy with Children with Autism in the Inclusive Kindergarten. *Advances in Social Science, Education and Humanities Research*, 169. <http://repository.unp.ac.id/12703/1/2017%20Artikel%20di%20Atlantis%20Press%20Increasing%20Social%20Behavior.pdf>
- Martin, G., & Pear, J. (2019). Behavior modification. In *Routledge eBooks*. <https://doi.org/10.4324/9780429020599>
- National Center for Biotechnology Information. (2016). Journal of clinical child & adolescent psychology. <https://pubmed.ncbi.nlm.nih.gov/27739336/>
- Pradhan, M., & Mhatre, M. P. (2020). Role of play therapy in enhancing social skills and self-esteem among children with autism spectrum disorder: A systematic review. *Journal of Indian Association for Child and Adolescent Mental Health*, 16(3), 34–49. <https://doi.org/10.1177/0973134220912277>
- Reichow, B., Barton, E. E., & Maggin, D. M. (2018). Overview of Meta-Analyses on Early Intensive Behavioral Intervention for Young Children with Autism Spectrum Disorders. *National Institute of Health*, 18(4), 26–47. <https://doi.org/10.1007/s10803-018-3574-6>
- Rodgers, M. A., & Dunsmuir, S. (2020). Measuring the effectiveness of Early Intensive Behavioral Intervention (EIBI) for children with autism: Evidence from a clinical setting. *National Institute of Health*, 50(6), 1782–1792. <https://doi.org/10.1007/s10803-020-04413-6>
- Skinner, B. F. (2019). The shaping of a behaviorist. In *Elsevier eBooks*. <https://doi.org/10.1016/b978-0-12-398398-5.50001-7>
- Smith, T. (2023, March 10). The growing field of applied behavior analysis. *Psychology Today*. <https://www.psychologytoday.com/us/blog/the-autism-spectrum/202303/the-growing-field-of-applied-behavior-analysis>
- Springgs, A. D., Matthews, C. B., & Lyons, J. S. (2022). Effects of video modeling on social skills acquisition for children with Autism Spectrum Disorder: A systematic review and meta-analysis. *Autism Research*, 15(6), 1004–1017. <https://doi.org/10.1002/aur.2665>
- Wang, Q., & Kuo, Y. L. (2022). Social skills training for children with autism spectrum disorder: A meta-analysis of randomized controlled trials. *Research in Developmental Disabilities*, 120(1), 104113. <https://doi.org/10.1016/j.ridd.2021.104113>
- Ward-Horner, J. C., & Sturmey, P. (2012). Functional Analysis in the Classroom: A Meta-analysis. *Journal of Autism and Developmental Disorders*, 42(8), 1900–1909. <https://doi.org/10.1007/s10803-011-1436-8>
- White, E. L. (2020). Evaluating the use of visual supports for students with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 50(3), 1268–1283. <https://doi.org/10.1007/s10803-019-04278-5>

Exploring the Challenges of Printed Modular Instruction for Learners with Special Needs

Mirbeth A. Pinote

Cebu Technological University-Main Campus, Cebu City, Philippines

Author Email: mirbethpinote@gmail.com

Dated received: May 18, 2024

Date revised: June 17, 2024

Date accepted: June 24, 2024

Originality: 85%

Grammarly Score: 99%

Similarity: 15%

Recommended citation:

Pinote, M. (2024). Exploring the challenges of printed modular instruction for learners with special needs. *Journal of Interdisciplinary Perspectives*, 2(8), 120-124. <https://doi.org/10.69569/jip.2024.0238>

Abstract. This study explored the challenges parents and teachers face as a foundation for developing an action plan to enhance printed modular distance learning implementation. This study used a descriptive-comparative research design to compare the challenges teachers and parents encountered during the printed modality implementation. The study sample comprised six teachers and 54 parents, selected through universal sampling. Respondents completed a questionnaire adapted from Abante et al. (2021). Data were analyzed using frequency counts, percentages, weighted means, and independent samples t-tests. The findings revealed that parents experienced significant challenges hiring tutors, while teachers faced substantial difficulties in parent-teacher communication and validating learners' progress. The statistical analysis indicated no significant difference in the challenges reported by parents and teachers. The study concludes that printed modular distance learning facilitates continuing education at home but falls short of adequately supporting learners with special needs. Consequently, a targeted action plan should be implemented to address these challenges and improve educational outcomes.

Keywords: Special education; Distance learning; Printed modules.

1.0 Introduction

Education is the bedrock of independence, equipping individuals to navigate life's challenges. It encompasses essential skills such as literacy, numeracy, and moral development. Education is not a privilege; it is a fundamental human right that should be accessible to all, regardless of socioeconomic status or gender. This principle extends to learners with special needs, who are equally entitled to education and support tailored to their unique requirements. This study makes a unique contribution by exploring the challenges of printed modular instruction for learners with special needs, aiming to propose an action plan for improvement.

Traditionally, learners with special needs have been educated through face-to-face interactions, facilitating direct engagement and tailored instructional methods. However, the onset of the COVID-19 pandemic necessitated a sudden shift to remote learning, posing significant challenges for students, parents, and educators. The abrupt transition to home-based education disrupted established routines and created difficulties in delivering and receiving instruction effectively. The pandemic had a profound impact on the education of special needs learners.

Globally, the education sector had to adapt swiftly to ensure continuity of learning amidst the pandemic. Various interventions, such as online classes and printed modules, were introduced to maintain educational standards. While some countries had already integrated digital learning methods, many faced substantial challenges in shifting from traditional face-to-face teaching to online platforms.

In the Philippines, the pandemic prompted the first large-scale implementation of distance learning, transforming the educational landscape. In response to health and safety protocols, the Department of Education (DepEd) introduced the Basic Education Learning Continuity Plan (BE-LCP), which outlines four learning modalities: printed modular distance learning, offline modular distance learning, online distance learning, and blended learning. This plan had a significant impact on special needs learners. Surveys conducted by DepEd indicated a preference for printed modular distance learning among parents and learners.

Learners with special needs were particularly impacted by this transition due to significant changes in their daily routines, reliance on paper-based activities, and limited direct interaction with teachers. These students often struggle to adjust to home-based learning, which restricts their engagement with peers and the broader learning environment. The standardized nature of printed modules fails to accommodate the diverse strengths and needs of special needs learners, highlighting the necessity for differentiated instruction.

Teachers encountered numerous obstacles in communicating with parents, validating and assessing student progress, and providing suitable instructions for special needs learners. The lack of face-to-face interaction hindered the effectiveness of teaching strategies tailored for these students. Conversely, parents were thrust into the role of primary educators at home, facing challenges due to limited knowledge about their child's disability and a lack of specialized training.

The printed modular approach presented specific difficulties, as many activities were not aligned with the diverse needs of special needs learners. Inconsistent parental support and participation further compounded the issue, with some parents struggling to maintain their child's focus and engagement with the modules. Additionally, the demands of their schedules and limited resources made it challenging for many parents to adequately support their children's learning.

This significant study assessed the challenges faced by teachers and parents of learners with special needs in using printed modular learning during the pandemic. By identifying these challenges, the study seeks to inform the development of an action plan that could potentially revolutionize the effectiveness of remote learning for special needs students. In light of the issues presented, this study provides insights and potential solutions for improving the educational experience of learners with special needs during unprecedented times.

2.0 Methodology

2.1 Research Design

The research employed a descriptive-comparative design, which is appropriate for identifying differences and similarities between the challenges teachers and parents encounter. This method allows for a detailed examination of the variables to determine which group faces greater difficulties and in what aspects.

2.2 Research Participants

This study's respondents were selected parents and teachers affiliated with two Special Education (SPED) Centers: Labangon Elementary School and City Central Elementary School. Labangon Elementary School employs four SPED teachers. Two of these teachers specialize in educating learners with autism and intellectual disabilities. Another teacher instructs learners with hearing impairments in the lower primary grades, while a fourth teacher manages the upper primary grades. City Central Elementary School has three SPED teachers. These teachers educate learners with intellectual disabilities, learning disabilities, and autism in the lower primary grades and during transition.

Additionally, they teach deaf students in grades 2, 4, 5, and 6. The teachers and parents were chosen as respondents for this study due to their critical roles in educating learners with special educational needs (SENs), particularly during the COVID-19 pandemic. The abrupt shift to printed learning modalities has significantly impacted these stakeholders, presenting numerous challenges. This study recognizes the unique experiences of these educators and parents and aims to gather their perspectives and insights into the educational adaptations and difficulties encountered during this period.

2.3 Research Instrument

This questionnaire is adapted from Abante et al. (2021). It comprises two sets, each with two parts. Part one gathers the demographic and professional profiles of the respondents. Part two addresses the challenges the respondents face in implementing printed modular instruction.

2.4 Data Gathering Procedure

The researchers distributed the questionnaire to the study respondents, ensuring their identities and information would be protected and used solely for research purposes. Respondents were given adequate time to complete the questionnaire. Upon completion, the researchers collected and tabulated the data.

2.5 Ethical Considerations

All procedures in this study involving human respondents were conducted with the utmost regard for confidentiality, and participation was entirely voluntary. The author of the study declares that there is no conflict of interest. Informed consent was obtained from all participants involved. The study underwent a plagiarism check to ensure academic integrity, and all sources were appropriately cited. The interpretation of findings was free from bias, and the results were used solely for research purposes.

3.0 Results and Discussion

3.1 Extent of Challenges Encountered by Parents

Table 1 illustrates the varying degrees of challenges parents face, with a notable emphasis on item number 2, where an extreme challenge is identified: the financial constraint of engaging tutors. This financial strain is exacerbated by the predominantly minimal wages many parents earn, particularly those supporting multiple children. This underscores the disparate socioeconomic realities experienced amidst the pandemic, wherein families with stable employment and additional resources perceive the situation as conducive to familial cohesion. In contrast, those grappling with unemployment perceive it as an added burden. It's crucial to acknowledge the complexity of these challenges and the need for a comprehensive approach to address them.

Moreover, transitioning to this new educational paradigm has revealed a lack of preparedness among parents and learners alike. While some parents possess access to supplementary educational tools, a significant proportion lack the requisite proficiency in utilizing them effectively. However, this also presents an opportunity for growth and learning, as parents and learners can acquire these skills over time. Furthermore, a prevailing perception exists among parents that the modular approach merely facilitates compliance rather than fostering genuine mastery of the subject matter. This perception can be changed with the right support and understanding. Additionally, many parents lack subject matter knowledge and pedagogical strategies for facilitating effective learning outcomes (Kintanar et al., 2021).

Table 1. Descriptive statistics of the challenges parents encountered

Indicators	Mean	Interpretation
1 I/We lack the financial resources to provide other learning tools like cell phones, tablets, laptops, or computers.	3.00	Moderately Challenged
2 I/We lack the money to hire tutors.	3.30	Extremely Challenged
3 My/Our child lacks motivation to learn and answer the modules.	3.07	Moderately Challenged
4 I/We lack time in guiding and monitoring our child's learning.	2.85	Moderately Challenged
5 I/We lack knowledge in using technology.	2.85	Moderately Challenged
6 I/We have difficulty teaching the module topics to our child.	2.94	Moderately Challenged
7 I/We have difficulty in maintaining our child's focus.	3.07	Moderately Challenged
8 My/Our child won't listen because we are not their teacher.	2.87	Moderately Challenged
9 I/We have not fully understood our child's disability.	2.70	Moderately Challenged
10 I/We have little to no knowledge about the strategies for teaching children with special educational needs (LSENs).	3.00	Moderately Challenged
Aggregate Weighted Mean	2.97	Moderately Challenged

Legend: 3.25-4.00-Extremely Challenged; 2.50- 3.24-Moderately Challenged ;1.75 - 2.49- Slightly Challenged; 1.00 - 1.74-Not Challenged

3.2 Extent of Challenges Encountered by Teachers

Table 2 delineates the challenges encountered by teachers during the implementation of printed modular distance learning, indicating a spectrum of difficulty ranging from moderate to extreme across various facets. It's important

to note that these challenges are not simple but rather complex and multifaceted. Notably, items 1-3 and 10 register moderate challenges, whereas items 4-9 present pronounced difficulties. The data underscores the pivotal role of parental engagement and support in the success of printed modular distance learning. While teachers demonstrate proficiency in module dissemination, their primary concern is parental module accessibility. The logistical barriers many parents face, such as delayed receipt of materials or technological limitations, hinder effective communication channels. This is further complicated by the absence of smartphones or internet connectivity, leading to failed contact attempts via social media. Instances of incorrect or inactive contact information parents provide exacerbate the situation, emphasizing the need for improved parental involvement.

Regarding the assessment of learner progress, teachers face formidable obstacles that significantly impact the quality of education. Instances abound where external aids, such as tutors, assume responsibility for completing modules, compromising assessment outcomes' integrity. Moreover, the exigencies of parental employment often result in parental completion of assignments on behalf of their children, contributing to inconsistencies in submission timelines and legibility issues. Additionally, administrative constraints stemming from the pandemic preclude the possibility of conducting in-person evaluations, further complicating the assessment process (Guiamalon et al., 2021).

Table 2. Descriptive statistics of the challenges teachers encountered

Indicators	Mean	Interpretation
1. The government provides a lack of materials for printed modules.	2.83	Moderately Challenged
2. I have difficulty providing supplementary materials like videotaped and audio-recorded lessons.	2.83	Moderately Challenged
3. It is difficult to communicate with parents through their number and social media accounts like Facebook Messenger.	3.17	Moderately Challenged
4. Parents have poor attendance during parent-teacher conferences.	3.50	Extremely Challenged
5. Parents do not get the modules on time.	3.50	Extremely Challenged
6. Parents have many concerns and problems about the self-learning modules.	3.50	Extremely Challenged
7. It is difficult to check the learners' progress.	3.33	Extremely Challenged
8. Learners' progress through the written works and performance tasks cannot be validated.	3.33	Extremely Challenged
9. Parents have difficulty guiding the learners in answering the modules.	4.00	Extremely Challenged
10. I cannot conduct home visitation constantly.	3.00	Moderately Challenged
Aggregate Weighted Mean	3.30	Extremely Challenged

3.3 Difference between Challenges Encountered by Parents and Teachers

Table 3. Test of difference between the challenges of the teachers and parents

Source of Difference	Mean	Standard Deviation	Mean Difference	t- value	p-value	Decision	Result
Parents	29.67	8.08					
Teachers	33.00	3.74	-3.33	-1.771	0.104	Do not reject Ho	Not Significant

*significant at $p < 0.05$

Table 3 presents the results of a t-test conducted at a significance level of 0.05 to determine whether there is a significant difference between parents' and teachers' perceptions of challenges encountered in implementing printed modular distance learning. The computed mean perception score for parents is 29.67, with a standard deviation of 8.08, while for teachers, it is 33.00, with a standard deviation of 3.74. The mean difference between the two groups is -3.33, yielding a computed t-value of -1.771. The resulting p-value is 0.104, which exceeds the 0.05 significance level. Consequently, the null hypothesis is not rejected, indicating that there is no statistically significant difference between the perceptions of parents and teachers regarding the challenges encountered in printed modular distance learning implementation.

This convergence of perceptions underscores a shared acknowledgment by both parents and teachers of the challenges inherent in this educational modality. Thus, concerted efforts are imperative to address these challenges, emphasizing communication and collaboration between the two stakeholder groups to foster learners' progress. Given the absence of direct learner-teacher interaction in printed modular learning, parental

involvement assumes heightened importance. Parents are integral to the teaching-and-learning process, necessitating active engagement to support various aspects of the child's development. Teachers can demonstrate support by engaging in regular communication via calls, texts, and chats, conducting follow-ups, providing feedback, and offering guidance to parents on instructional strategies aligned with module content. Conversely, parents should maintain open communication with teachers regarding their child's progress and seek insights on effective teaching approaches and strategies (Pajariato et al., 2020). This collaborative framework not only enhances educational outcomes but also contributes to the holistic development of learners.

4.0 Conclusion

After an extensive examination and interpretation of the research findings, it is evident that teachers and parents encounter difficulties executing printed modular distance learning. Consequently, there exists no notable distinction in the level of challenges faced. These findings underscore the need for educational institutions and policymakers to provide adequate support and resources to address the challenges associated with printed modular distance learning. Additionally, targeted training programs may be necessary for teachers and parents to effectively navigate these challenges and facilitate the successful implementation of distance learning strategies. This study reveals the needs in order to have a quality education using the printed modular distance learning; we can't predict when an epidemic will happen and in times like this, we need to have modifications in order to have a continuous learning at home. We are already in the 21st century where advance technology arises which can be used to fill the gaps or even make education easy and accessible to everyone. Further research could further examine the challenges faced by teachers and parents with special needs and the effective ways on how to overcome or improve the educational system in using the printed modular distance learning.

5.0 Contributions of Authors

The author drafted the manuscript, created the participated in formulating the survey questions, performed the data gathering procedure, and interpreted the data gathered. The author also participated in revising the manuscript.

6.0 Funding

This study received no specific grant from any agency.

7.0 Conflict of Interests

The author declares that there is no conflict of interest about the publication of this paper.

8.0 Acknowledgment

The researcher will be forever grateful to Dr. Raymond C. Espina, who shared his knowledge and expertise to complete this study, his unlimited patience, and meaningful words of encouragement made the researcher finish this study. The researcher is also grateful to her family in providing the needed materials and support in this study.

9.0 References

- Abante, A. S. (2021). A comparative analysis on the challenges of online learning modality and modular learning modality: A basis for training program. *International Journal of Multidisciplinary Research and Analysis*, 4(4). <https://doi.org/10.47191/ijmra/v4-i4-17>
- Guiamalon, T., Sittie, A., Alon, S., & Camsa, S. (2021). Teachers' issues and concerns on the use of modular learning modality. *IJASOS-International E-Journal of Advances in Social Sciences*, 7. <https://doi.org/10.46529/socioint.202115>
- Kintanar, F. C., Elladora, S. T., & Cuizon, F. R. (2021). Plight of the parents of the Filipino learners in the implementation of the modular distance learning. *International Journal of Educational Science and Research*, 11(2), 35-48. <https://doi.org/10.24247/ijesrdec20216>
- Pajariato, H., Kadir, A.N., Galugu, N., Sari, P., & Februanti, S. (2020). Study from Home in the Middle of the COVID-19 Pandemic: Analysis of Religiosity, Teacher, and Parents Support Against Academic Stress..

School Heads' Leadership Quality, Organizational Climate, and Learning Environment as Predictors of Teachers' Innovativeness

Juanito Jr. B. Gabutan*, Janet C. Parpa, Edwin C. Du
Capitol University, Cagayan de Oro City, Philippines

*Corresponding Author Email: 2079666@g.cu.edu.ph

Dated received: June 8, 2024

Date revised: June 18, 2024

Date accepted: June 24, 2024

Originality: 91%

Grammarly Score: 99%

Similarity: 9%

Recommended citation:

Gabutan, J., Parpa, J., Du, E. (2024). School heads' leadership quality, organizational climate, and learning environment as predictors of teachers' innovativeness. *Journal of Interdisciplinary Perspectives*, 2(8), 125-136. <https://doi.org/10.69569/jip.2024.0274>

Abstract. This study aimed to investigate the impact of school administrators' leadership quality, organizational climate, and learning environment on teachers' innovativeness in elementary and secondary public schools in the Lagonglong District, Misamis Oriental Division. Employing a descriptive-correlational and causal research design, the study included public school teachers as participants. Data were collected using proportionate stratified random sampling and analyzed with descriptive statistics, correlational analysis, and multiple regression analysis. The findings revealed a highly positive educational landscape characterized by effective leadership, a supportive organizational climate, conducive learning environments, and a culture of innovation among teachers. Significant positive relationships were identified between school leaders' leadership quality, organizational climate, learning environment, and teachers' innovativeness. Enhanced leadership quality, a favorable organizational climate, and a nurturing school learning environment were associated with increased levels of teacher innovation. The study emphasized the importance of leadership development, creating positive climates, supportive learning environments, and fostering an innovative culture to achieve long-term educational excellence. Multiple regression analysis identified significant predictors of teachers' innovativeness, with organizational climate being statistically significant. The results demonstrated the influential impact of quality leadership, organizational climate, and learning environment on teacher innovativeness in school settings. Effective communication and team building were key contributing factors to enhancing innovative teaching. Schools developed team-building activities, communication strategies, a common vision, and meaningful support to inspire and guide teachers in creating an environment conducive to innovative learning.

Keywords: Teacher innovativeness; School leadership; Organizational climate; Learning environment.

1.0 Introduction

In exploring effective educational practices, teachers' innovativeness emerges as a crucial element influencing learning dynamics and student outcomes (Anaktototy, 2023). Innovative pedagogies, encompassing holistic approaches, adaptability, and continuous improvement, are pivotal for enhancing student experiences (Peterson et al., 2018). Teachers, as key figures in education, must foster adaptability and inspiration, catering to diverse learning styles through varied strategies (Chia & Goh, 2016; Ukpokodu, 2019). In the context of the Fourth Industrial Revolution (4IR), rapid technological advances and evolving pedagogies underscore the importance of teacher innovation (Haleem et al., 2022; Kovacs, 2017).

Research highlighted the transformative power of dedicated teachers in preparing students for future challenges by linking classroom learning to real-world applications and equipping them with critical 21st-century skills

(Grigoropoulos, 2021; Han & Abdrahim, 2023). Despite theoretical discussions, there is a scarcity of empirical studies examining how leadership, organizational climate, and learning environment impact teacher innovativeness, particularly in specific geographic contexts like the Lagonglong District (Aquino et al., 2021; Oco, 2022).

Using a hybrid methodology combining qualitative insights from focus group discussions and in-depth interviews, the study seeks to fill this gap by exploring leadership quality, organizational climate, and learning environment dynamics. Theoretical frameworks like Transformational Leadership (Burns, 1978), Path-Goal Theory (House, 1971), and Diffusion of Innovations (Rogers, 1962) guide the research. These frameworks emphasize the role of leaders in fostering innovation, creating conducive environments, and understanding the adoption of new practices (Fairhan et al., 2023; Hasbi, 2018; Daing & Mustapha, 2023).

The study aims to provide insights into how school leaders can influence teacher innovativeness through their practices, organizational climate, and the learning environment, with a focus on the Lagonglong District. Findings are expected to inform leadership training, enhance organizational climates, and improve teaching methods and curricula, ultimately contributing to educational research and practice in the Philippines (Peschl, 2023; Akbar, 2020).

2.0 Methodology

2.1 Research Design

The study aimed to explore how school heads' leadership quality, organizational climate, and learning environment affect teachers' innovativeness. It used descriptive-correlational and causal research design. It assessed teachers' perceptions on leadership quality, organizational climate, and learning environment . employing ANOVA to identify differences in innovativeness across various demographics. Correlational analysis and regression were used to assess relationships and impacts of the independent variables on teachers' innovativeness.

2.2 Research Participants

The study was conducted in the district of Lagonglong, Misamis Oriental Division, the district is comprised of six school principals, five head teachers, and two schools in charge, covering 13 public schools. Proportionate stratified random sampling was used in determining teacher-respondents. The study involved 167 public school teachers. Using proportionate stratified random sampling method, where proportionate random samples were taken according to population size per school relative to a total population was adopted.

2.3 Research Instrument

The questionnaire developed by the researchers was divided into four sections. Part I aimed to gather important background information about the teacher respondents. This section helped to understand the demographics and characteristics of the sample, which were useful for data analysis and identifying any potential demographic factors that influenced the research results. Part II is a self-created questionnaire that assessed teachers' perceptions of school administrators' leadership. It focused on gathering data about how teachers perceive the leadership quality of school administrators. Part III is a self-created questionnaire on organizational climate. The questions explored the teachers' perceptions of the overall atmosphere within the school, including relationships, communications, and collaboration. Part IV is another self-made questionnaire. This one assessed the learning environment's conduciveness to innovation. Questions included were about resource availability, safety and well-being, and instructional strategy. Part V teachers' innovativeness utilized a self-made questionnaire designed to measure the level of innovativeness exhibited by teachers themselves. It assessed their innovative practices, creative teaching methods, and the extent to which they apply new ideas or techniques in their teaching. Questions in this section focused on technology integration, adaptability, and creativity in the classroom.

The questionnaire's validation process involved expert review and evaluation by qualified validators to ensure its accuracy. Three validators were selected based on their extensive experience and expertise in relevant fields such as psychology, counseling, and education. Through expert review, the questionnaire's content validity was assessed to ensure that it comprehensively covered all relevant aspects of the constructs being measured. Additionally, factor analysis examined construct validity to confirm alignment with theoretical constructs. The

researchers tested for reliability to see if these instruments could accurately measure what they were intended for. The reliability test was done to gauge whether the questionnaire was reliable, and it found that its internal consistency and test-retest reliabilities were acceptable. To measure the internal consistency of the items on the questionnaires, Cronbach's Alpha Reliability Coefficient was employed.

2.4 Data Analysis

For problems 1, 2, 3, 4, and 5, descriptive statistics such as frequency, mean, and standard deviation were employed to determine the level of innovativeness exhibited by teachers. ANOVA was utilized to determine whether there was a significant difference in teachers' innovativeness based on differences in respondents' demographic profiles. Pearson product correlation was employed to determine whether there was a significant relationship between the leadership qualities of school heads, organizational climate, learning environment, and the innovativeness of the teachers. Correlation analysis was used to determine the strength and direction of the relationship between these two variables. Moreover, multiple regression analysis was used to examine the combined effect of several independent variables on a dependent variable – in this case, teachers' innovativeness.

2.5 Ethical Considerations

Ethical considerations, carried out by this study, were very strict to ensure that the rights and welfare of the respondents are protected. All participants gave informed consent, thereby ensuring openness about the purpose of the research. Participants were assured that becoming part of this investigation was completely voluntary. They had the right not to participate or drop out at any time without influencing anything in the research. All study-related information was kept secret within the limits of the law. Information was maintained securely, with only the researchers having access to it. The participants maintained the strictest confidentiality, as no names were used in any research publications or presentations.

3.0 Results and Discussion

3.1 Demographic Profile

Table 1 presents the distribution of respondents based on their age, sex, rank, highest educational attainment, and years of service.

Table 1. Descriptive statistics of the demographic profile of the respondents

Age (in years)	Frequency	Percentage (%)
21-25	7	4.2
26-30	24	14.4
31-35	35	21.0
36-40	29	17.4
41-45	29	17.4
46-50	17	10.2
51-above	26	15.6
Sex		
Male	52	31.1
Female	115	68.9
Rank		
Teacher I	74	44.3
Teacher II	28	16.8
Teacher III	52	31.1
Master Teacher	13	7.8
Educational Attainment		
College Graduate	56	33.5
Postgraduate	111	66.5
Years of Service		
1-5	25	15.0
6-10	47	28.1
11-15	52	31.1
16-20	17	10.2
21-above	26	15.6

Table 1 shows that 21.0% of respondents were aged 31-35, 17.4% are 36-40, another 17.4% were 41-45, 14.4% were 26-30, and 15.6% were 51 and older. A large proportion of the sample belonged between 30 and 40 years old. Research highlights the importance of age in teaching efficiency and professional development (Afzal et al., 2023).

Younger teachers tend to use technology more effectively and adopt innovative instructional approaches (Haleem et al., 2022). For the sex distribution, 68.9% of participants were female and 31.1% were male, highlighting a gender disparity in teaching roles. Teaching is traditionally viewed as a nurturing profession, leading to more women in the field. This trend is reinforced by societal norms and lower salaries, making it challenging to attract more male teachers. Studies, like those by ElAtia et al. (2022) and Stewart et al. (2021), confirm women dominate education and face specific career challenges. Research also indicates that male and female teachers bring different perspectives and teaching styles, affecting classroom dynamics and outcomes (Tarrayo et al., 2021). The distribution of teaching ranks among participants: 44.3% were Teacher I, 31.1% were Teacher III, 16.8% were Teacher II, and 7.8% were Master Teacher. This indicated a varied composition of teaching ranks within the sample. Most teachers were in the Teacher I position, often fresh graduates facing challenges like classroom management and curriculum development. Research emphasized the importance of supporting early-career teachers to enhance job satisfaction and retention. Studies by Johler et al., (2022) and Hulme & Wood (2022) highlight the significance of tailored support systems for novice teachers. The Table also shows that 33.5% of participants were college graduates, and 66.5% held postgraduate degrees. This indicated a highly educated group. Teachers with postgraduate degrees tend to have better teaching skills and positive learning outcomes. Research supports that higher education levels lead to greater teaching effectiveness and professional development (Malanchini et al., 2020; Ventista & Brown, 2023). Among the respondents, 31.1% have served for 11-15 years, 28.1% for 6-10 years, 15.0% for less than five years, 10.2% for 16-20 years, and 15.6% for over 21 years. This distribution highlighted a mix of early-career, mid-career, and experienced teachers. Research indicated that teachers at different career stages have varying views, abilities, and interactions. Experienced teachers often have better teaching and classroom management skills, positively affecting student engagement and performance (Hayak & Avidov-Ungar, 2020; Cents-Boonstra et al., 2020). Studies also show that long-serving teachers might experience job dissatisfaction and poor work-life balance. Additionally, there is a correlation between length of service and factors like burnout, turnover intentions, and organizational commitment (Hoque et al., 2023).

3.2 Level of Leadership Quality of the School Administrators

Table 2 shows teachers perceived visioning ability, team-building skills, supportive nature, and innovativeness as indicators of administrators' quality leadership.

Table 2. Descriptive statistics of the level of leadership quality of the school administrators as perceived by teachers

Components	Mean	SD	Interpretation
Vision	3.53	0.50	Outstanding
Team Building	3.52	0.51	Outstanding
Support	3.51	0.53	Outstanding
Innovation	3.54	0.51	Outstanding
Total Measure	3.53	0.47	Outstanding

Table 2 shows high mean scores (3.51 to 3.54) with low standard deviations, indicating strong consensus among teachers. "Innovation" scored highest at 3.54, while "Support" rated lowest at 3.51 but still "Outstanding." These results highlighted effective leadership across various dimensions like vision, teamwork, support services, and innovation. Research confirms that visionary, inclusive leadership, along with support for innovation, enhances teacher motivation and student outcomes. Effective leaders foster collaboration, provide professional development, and encourage creativity, creating a positive environment for better educational results. It has been concluded that creative practices by school principals can enhance teacher creativity, improve instruction quality, and increase student motivation, consequently improving their performance at school (O'Shea, 2021). Furthermore, innovatively inclined instructors use technology in conjunction with data-driven decision-making to ensure constant improvement and adaptation in teaching settings (Schmidt, 2023).

3.3 School's Organizational Climate

Table 3 provides a consolidated overview of teachers' perceptions of the school's organizational climate, encompassing the components of relationships, communication, and collaboration. Table 3 shows consistently high mean scores (3.45 to 3.54) across components, indicating strong agreement on the positive organizational climate in the school. "Relationships" received the highest mean score at 3.54, reflecting strong camaraderie among colleagues. "Communication" had the lowest mean at 3.45 but was still rated as "Outstanding" for effective information sharing.

Table 3. Descriptive statistics of the school's organizational climate as perceived by teachers

Components	Mean	SD	Interpretation
Relationship	3.54	0.50	Outstanding
Communication	3.45	0.56	Outstanding
Collaboration	3.51	0.50	Outstanding
Total Measure	3.50	0.48	Outstanding

These findings underscored the importance of a positive school climate, promoting teacher satisfaction and collaboration through effective leadership practices, ongoing professional development, and team-building activities. Fostering supportive relationships, transparent communication, and collaboration are essential for creating a positive organizational climate, benefiting both teachers and students. Importantly, these findings demonstrated the need to prioritize a holistic approach toward organizational climate in school leadership and management practices. School leaders can foster a positive organizational climate by building supportive relationships, creating transparent communication, and facilitating collaboration among staff members (Cooray, 2023). Investing in leadership development programs and training initiatives that focus on relational, communicative, and collaborative skills could further boost the overall school climate, thereby increasing teacher satisfaction and student success (Tingle et al., 2017).

3.4 School's Learning Environment

Table 4 shows school's learning environment as perceived by teachers.

Table 4. Descriptive statistics of the school's learning environment as perceived by teachers

Components	Mean	SD	Interpretation
Resource Availability	3.35	0.55	Very Satisfactory
Safety and Well-being	3.47	0.55	Very Satisfactory
Instructional Strategy	3.53	0.53	Very Satisfactory
Total Measure	3.45	0.48	Very Satisfactory

Table 4 shows consistently high mean scores ranging from 3.35 to 3.53, with an overall average of 3.45 and standard deviations between .48 and .55, indicating strong agreement among teachers about the positive learning environment in the school "Instructional Strategy" received the highest mean score at 3.53, indicating high satisfaction, while "Resource Availability" had the lowest mean at 3.35, still rated as "Very Satisfactory." Teachers reported positive experiences with resource availability, safety measures, and instructional strategies, emphasizing the importance of a holistic approach to the learning environment. Positive perceptions of the environment are crucial for teacher morale, teaching effectiveness, and student engagement. A positive learning environment fosters motivation, student success, and feelings of belongingness among teachers and students. Rusticus et al.'s (2023) findings highlighted the significance of an affirmative learning space in school leadership and management approaches. Based on teachers' opinions, principals may solve some problems related to resource allocation, self-preservationist guidelines, and instructional support (Yang et al., 2021).

3.5 Level of Innovativeness

Table 5 provides an overview of teachers' innovativeness based on various factors such as technology integration, adaptability, and creativity.

Table 5. Descriptive statistics of the level of innovativeness exhibited by teachers

Components	Mean	SD	Interpretation
Technology Integration	3.52	0.37	Highly Innovative
Adaptability	3.61	0.39	Highly Innovative
Creativity	3.62	0.38	Highly Innovative
Total Measure	3.59	0.32	Highly Innovative

Table 5 reveals a high level of teacher innovation across various dimensions, with an overall average score of 3.59. Teachers exhibit significant innovativeness in areas like technology integration, adaptability, and creativity, as reflected in mean scores ranging from 3.52 to 3.62. These findings emphasize the importance of nurturing teacher innovation, which significantly impacts successful learning dynamics. Supportive school leadership and a positive organizational climate are crucial in fostering teacher innovation, with professional development programs focusing on enhancing teachers' capacity for technology integration, adaptability, and creativity. Innovative teachers demonstrate flexibility, seek growth opportunities, and view obstacles as chances for innovation.

Creativity in teaching involves designing compelling learning experiences that foster creative thinking among students and enhance their problem-solving capabilities. This underscored the importance of supporting and providing resources for teachers to enhance their innovativeness across different dimensions (Barcelona et al., 2023). As such, professional development programs should focus on building teachers' capacity for technology integration, adaptability, and creativity. School leaders play a critical role in creating a supportive environment that values and rewards innovative practices (Westgate & Noble, 2019).

3.6 Test of Difference in Teachers' Innovativeness and Profile

Table 6 presents the results of a test of difference in teachers' innovativeness based on their sex, examining three dimensions: technology integration, adaptability, and creativity, along with a total measure.

Table 6. Analysis for the difference in teachers' innovativeness when grouped to their sex

Teachers' Innovativeness ¹	Sex group		t-value (p-value) ²	Remarks
	Male (n=52)	Female (n=115)		
Technology Integration	3.51 (.37)	3.53 (.37)	-.306 (.760)	Not significant
Adaptability	3.58 (.41)	3.63 (.38)	-.838 (.403)	Not significant
Creativity	3.57 (.43)	3.64 (.36)	-1.083 (.281)	Not significant
Total Measure	3.55 (.35)	3.60 (.31)	-.882 (.379)	Not significant

Note: ¹based on Mean (SD), ²based on Independent Two-sample T-test, Not significant (p>.05)

Table 6 presents data showing no significant differences in innovativeness between male and female teachers across various dimensions. For instance, in technology integration, men scored 3.51 (SD=0.37) and women 3.53 (SD=0.37), with a non-significant t-value of -0.306 (p=0.760). These findings suggest that a gender-neutral approach to supporting teacher innovation is crucial for fostering an inclusive and collaborative environment. Wrigley-Asante et al. (2023) discussed the importance of gender inclusivity in professional development initiatives, emphasizing equal opportunity and fairness. Conversely, Lord et al. (2020) suggest subtle, non-significant gender-based differences that warrant further investigation. While some studies show gender-based creativity gaps (Huang et al., 2022), recent research, including Alnahdi & Schwab (2023) and Copur-Gencturk et al. (2023), indicate no significant distinctions, underscoring the need to move beyond traditional gender divisions.

Table 7 shows the test of difference in teachers' innovativeness when grouped to their age.

Table 7. Analysis for the difference in teachers' innovativeness when grouped to their age

Teachers' Innovativeness ¹	Age group						F (p-value) ²	Remarks
	21-30 (n=31)	31-35 (n=35)	36-40 (n=29)	41-45 (n=29)	46-50 (n=17)	51+ (n=26)		
Technology Integration	3.66 ^b (.35)	3.50 ^{ab} (.30)	3.41 ^a (.35)	3.65 ^b (.28)	3.51 ^{ab} (.55)	3.39 ^a (.37)	2.995* (.014)	Significant
Adaptability	3.46 ^a (.34)	3.54 ^{ab} (.38)	3.66 ^{abc} (.37)	3.79 ^c (.28)	3.51 ^{ab} (.54)	3.72 ^{bc} (.39)	3.316** (.007)	Significant
Creativity	3.52 (.36)	3.63 (.29)	3.59 (.42)	3.68 (.38)	3.53 (.47)	3.72 (.39)	1.231 (.297)	Not significant
Total Measure	3.55 (.27)	3.56 (.24)	3.56 (.34)	3.71 (.28)	3.51 (.51)	3.61 (.34)	1.213 (.306)	Not significant

Note: ¹based on Mean (SD), ²based on One-way ANOVA test, Not significant (p>.05), *significant (p<.05), **significant (p<.01), abc-based on Duncan test

According to Table 7, the results of a one-way ANOVA showed that technology integration (F=2.995, p=0.014) and adaptability (F=3.316, p=0.007) significantly varied across age groups. Duncan's test revealed age-related differences in technology integration and adaptability among teachers, with younger teachers excelling in technology integration and older teachers showing higher adaptability. However, no significant differences were found in creativity across age groups. Tailored professional development strategies based on age could enhance technology integration and adaptability skills. Recent research suggests ongoing professional development can improve competencies across all age groups. Younger teachers are more open to experimenting with innovative methods, while older teachers adjust their approaches based on learner needs. Age does not significantly impact teachers' creativity levels, suggesting diversity-oriented creativity programs can benefit teachers at all career stages.

Table 8 shows the results of the test on the differences in innovativeness levels among instructors of different ranks.

Table 8. Analysis for the difference in teachers' innovativeness when grouped to their rank

Teachers' Innovativeness ¹	Rank group				F (p-value) ²	Remarks
	T1 (n=74)	TII (n=28)	TIII (n=52)	MT (n=13)		
Technology Integration	3.56 (.33)	3.54 (.44)	3.45 (.39)	3.57 (.33)	1.079 (.360)	Not significant
Adaptability	3.59 (.38)	3.57 (.43)	3.61 (.40)	3.85 (.17)	1.752 (.158)	Not significant
Creativity	3.62 ^a (.35)	3.57 ^a (.43)	3.57 ^a (.42)	3.91 ^b (.16)	3.024* (.031)	Significant
Total Measure	3.59 (.28)	3.56 (.39)	3.54 (.36)	3.77 (.20)	1.907 (.131)	Not significant

Note: ¹based on Mean (SD), ²based on One-way ANOVA test, Not significant (p>.05), *significant (p<.05)
ab-based on Duncan test

The result in Table 8 indicates higher creativity levels among Master Teachers compared to other ranks, but no significant differences in technology integration or adaptability were observed. Master Teachers may possess unique skills acquired over their careers, enabling them to innovate more in instructional practices. Further research could explore how rank influences teachers' adaptability and inform professional development initiatives for fostering adaptive teaching practices across all ranks.

Table 9 presents the results of a test showing differences in teachers' innovativeness based on their educational attainment.

Table 9. Analysis for the difference in teachers' innovativeness when grouped to their educational attainment

Teachers' Innovativeness ¹	Educational Attainment group		t-value (p-value) ²	Remarks
	College Graduate (n=56)	Postgraduate (n=111)		
Technology Integration	3.55 (.34)	3.51 (.38)	.544 (.587)	Not significant
Adaptability	3.62 (.34)	3.61 (.41)	.082 (.935)	Not significant
Creativity	3.64 (.33)	3.61 (.41)	.486 (.628)	Not significant
Total Measure	3.60 (.26)	3.58 (.35)	.461 (.646)	Not significant

Note: ¹based on Mean (SD), ²based on Independent Two-sample T-test, Not significant (p>.05)

The study found no significant differences in teachers' innovativeness between college graduates and postgraduates, suggesting that educational attainment does not impact teachers' ability to integrate technology, adapt, or be creative in teaching. This implies that tailored professional development programs can be beneficial for all teachers, regardless of their educational background. Recent studies support these findings, indicating comparable abilities and willingness to use technology and similar levels of creativity among teachers with different academic qualifications.

Table 10 presents the results of a test comparing teacher innovativeness using years of service as a criterion.

Table 10. Analysis for the difference in teachers' innovativeness when grouped to their years of service

Teachers' Innovativeness ¹	Years of Service group					F (p-value) ²	Remarks
	1-5 (n=25)	6-10 (n=47)	11-15 (n=52)	16-20 (n=17)	21+ (n=26)		
Technology Integration	3.65 (.37)	3.54 (.34)	3.51 (.34)	3.52 (.41)	3.42 (.44)	1.334 (.260)	Not significant
Adaptability	3.73 ^b (.34)	3.44 ^a (.34)	3.67 ^b (.36)	3.65 ^b (.46)	3.68 ^b (.46)	3.539** (.008)	Significant
Creativity	3.71 (.29)	3.52 (.38)	3.61 (.37)	3.64 (.46)	3.71 (.42)	1.564 (.186)	Not significant
Total Measure	3.70 (.25)	3.50 (.28)	3.60 (.30)	3.60 (.41)	3.60(.42)	1.613 (.174)	Not significant

Note: ¹based on Mean (SD), ²based on One-way ANOVA test, Not significant (p>.05), **significant (p<.01), ab-based on Duncan test

Table 10 highlights a significant difference in adaptability among teachers with varying years of service, particularly between those with 6-10 years and 11-15 years. However, no significant differences were observed in technology integration, creativity, or overall innovativeness based on years of service. This suggests the need for targeted professional development programs to enhance adaptability skills, especially for mid-career teachers. Despite variations in adaptability, technology integration, creativity, and overall innovativeness remained

consistent across different lengths of service, indicating similar competencies among teachers regardless of experience

3.7 Relationship Between Variables

Table 11 presents the correlation results examining the relationship between school heads' leadership quality and teachers' innovativeness across dimensions, including technology integration, adaptability, creativity, and the total measure.

Table 11. Analysis for the relationship between the school heads' leadership quality and teachers' innovativeness

School Heads' Leadership	Teachers' Innovativeness							
	Technology Integration		Adaptability		Creativity		Total Measure	
	r-value ¹ (p-value)	Remarks	r-value ¹ (p-value)	Remarks	r-value ¹ (p-value)	Remarks	r-value ¹ (p-value)	Remarks
Vision	.137(.078)	NS	.435*** (.000)	S	.327*** (.000)	S	.356*** (.000)	S
Team Building	.174* (.024)	S	.461*** (.000)	S	.414*** (.000)	S	.415*** (.000)	S
Support	.174* (.025)	S	.365*** (.000)	S	.266** (.001)	S	.318*** (.000)	S
Innovation	.191* (.013)	S	.428*** (.000)	S	.339*** (.000)	S	.379*** (.000)	S
Total Measure	.185* (.017)	S	.461*** (.000)	S	.368*** (.000)	S	.402*** (.000)	S

Note: ¹based on Pearson Correlation Analysis, ***significant at .001 level, **significant at 0.01 level, *significant at .05 level

Table 11 shows strong correlations between leadership qualities and teachers' innovativeness. Visionary school heads and team-building efforts by administrators positively influence adaptability, creativity, and overall innovativeness. Supportive school leaders foster innovation in technology integration and creativity. Creating an innovative environment also correlates positively with teacher innovativeness. These findings stress the crucial role of school leadership in fostering an environment conducive to teacher innovation, advocating for investment in leadership development programs for sustained educational improvement. Smith et al. (2020) and Johnson's (2021) studies also established that it is important for leaders in educational institutions to have a clear vision to appreciate different levels of adaptation, such as technological assimilation. Various forms of creativity and other types of teachers' overall innovativeness should also be appreciated. Thus, it illustrates how strategic direction provided by school leaders can shape innovative practices among classroom practitioners.

Table 12 presents the correlation results examining the relationship between school organizational climate and teachers' innovativeness across dimensions, including technology integration, adaptability, creativity, and the total measure.

Table 12. Analysis for the relationship between the school organizational climate and teachers' innovativeness

School Organizational Climate	Teachers' Innovativeness							
	Technology Integration		Adaptability		Creativity		Total Measure	
	r-value ¹ (p-value)	Remarks	r-value ¹ (p-value)	Remarks	r-value ¹ (p-value)	Remarks	r-value ¹ (p-value)	Remarks
Relationship	.153* (.048)	S	.397*** (.000)	S	.342*** (.000)	S	.353*** (.000)	S
Communication	.324*** (.000)	S	.374*** (.000)	S	.406*** (.000)	S	.435*** (.000)	S
Collaboration	.277*** (.000)	S	.391*** (.000)	S	.417*** (.000)	S	.428*** (.000)	S
Total Measure	.275*** (.000)	S	.418*** (.000)	S	.420*** (.000)	S	.439*** (.000)	S

Note: ¹based on Pearson Correlation Analysis, ***significant at .001 level, **significant at 0.01 level, *significant at .05 level

Table 12 reveals significant correlations between school climate and teacher innovativeness. Positive relationships exist between factors like relationships, communication, and collaboration within the school and teachers' technology integration, adaptability, creativity, and overall innovativeness. Smith et al. (2021) emphasized the

importance of supportive relationships, while Salamandra (2021) highlighted the role of effective communication in enhancing teacher innovation.

Table 13 presents the correlation results exploring the relationship between the school learning environment and teachers' innovativeness across dimensions, including technology integration, adaptability, creativity, and the total measure.

Table 13. Analysis for the relationship between the school learning environment and teachers' innovativeness

School Learning Environment	Teachers' Innovativeness							
	Technology Integration		Adaptability		Creativity		Total Measure	
	r-value ¹ (p-value)	Remarks	r-value ¹ (p-value)	Remarks	r-value ¹ (p-value)	Remarks	r-value ¹ (p-value)	Remarks
Resource Availability	.161* (.038)	S	.292*** (.000)	S	.233** (.002)	S	.271*** (.000)	S
Safety and Well-being	.117 (.131)	NS	.276*** (.000)	S	.285*** (.000)	S	.268*** (.000)	S
Instructional Strategy	.172* (.026)	S	.328*** (.000)	S	.332*** (.000)	S	.329*** (.000)	S
Total Measure	.169* (.029)	S	.338*** (.000)	S	.319*** (.000)	S	.327*** (.000)	S

Note: ¹based on Pearson Correlation Analysis, ***significant at .001 level, **significant at 0.01 level, *significant at .05 level

The result in Table 13 highlighted significant positive correlations between aspects of the school learning environment and teachers' innovativeness. Resource availability correlates moderately with technology integration ($r=0.161$, $p=0.038$), adaptability ($r=0.292$, $p<0.001$), creativity ($r=0.233$, $p=0.002$), and overall innovativeness ($r=0.271$, $p<0.001$). Safety and well-being show significant correlations with adaptability ($r=0.276$, $p<0.001$), creativity ($r=0.285$, $p<0.001$), and overall innovativeness ($r=0.268$, $p<0.001$). Instructional strategy has strong positive relationships with technology integration ($r=0.172$, $p=0.026$), adaptability ($r=0.328$, $p<0.001$), creativity ($r=0.332$, $p<0.001$), and overall innovativeness ($r=0.329$, $p<0.001$). These findings suggest that a supportive school learning environment, encompassing adequate resources, safety, and varied instructional strategies, is essential for fostering teacher innovativeness. Administrators should prioritize these factors to create a conducive environment for innovative teaching practices.

The correlation matrix in table 14 reveals strong positive correlations among school heads' leadership quality, organizational climate, and learning environment variables.

Table 14. Correlation analysis between the school heads leadership quality, organizational climate and learning environment

Variables	Leadership Quality	Organizational Climate	Learning Environment
Leadership Quality	--		
Organizational Climate	.814*** (.000)	--	
Learning Environment	.766*** (.000)	.825*** (.000)	--

Note: Values expressed in r-value (p-value), ***significant at .001 level

Table 14 shows a strong correlation between leadership quality and both organizational climate ($r=0.814$, $p<0.000$) and the learning environment ($r=0.766$, $p<0.000$). This indicates that effective leadership fosters a positive organizational climate and conducive learning environment. Additionally, there is a strong link between organizational climate and learning environment ($r=0.825$, $p<0.000$). Research by Converso et al. (2019) and Miller (2020) supported these findings, showing that transformational leadership and strong principal leadership significantly enhance trust, collaboration, and positive school climates. These findings highlight the critical role of school leaders in shaping educational outcomes, advocating for effective leadership strategies to improve both teacher and student performance. School heads' leadership quality, organizational climate, and learning environment as predictors of teachers' innovativeness

3.8 Multiple Regression Analysis

From Table 15, several significant predictors of teachers' innovativeness were obtained from multiple regression analysis.

Table 15. Multiple regression analysis

Predictor	Regression Coefficient (B)	S.E.	t-value	p-value	Remarks
(Constant)	2.528	0.178	14.167	<.001	Significant
Leadership Quality	0.121	0.086	1.404	0.162	Not significant
Organizational Climate	0.288	0.095	3.017**	0.003	Significant
Learning Environment	-0.109	0.086	-1.266	0.207	Not significant
Adjusted R ² = 0.192 ANOVA for Regression: F=14.135***, p<.001					
Fitted Regression Model: Teacher Innovativeness = 2.528 + .288 * (Organizational Climate)					
Note: **significant at .01 level					

Table 15 indicates that organizational climate significantly predicts teacher innovativeness ($p=0.003$; $t=3.017$; $B=0.288$), underlining the importance of communication, relationships, and collaboration. However, leadership quality ($B=0.121$) and learning environment ($B=-0.109$) were not significant predictors. The adjusted R-squared value of 0.192 suggests that the predictors collectively explain about 19% of the variance in teacher innovativeness. ANOVA results ($F=14.135$, $p<0.001$) confirm the overall significance of the model, indicating that organizational climate, leadership quality, and learning environment jointly influence teacher innovativeness. Support from Kolleck et al. (2021) and Rusticus et al. (2023) reinforces these findings, emphasizing the connection between positive organizational climates and teacher engagement, satisfaction, and school effectiveness. While leadership quality and learning environment are important, their specific traits in this study did not directly influence innovativeness, indicating the need for further research.

4.0 Conclusion

This study revealed that quality leadership, a positive organizational climate, and a supportive learning environment significantly enhance teachers' ability to innovate. Key factors are effective communication, visionary leadership, and adequate support, which enhance job satisfaction, collaboration, and innovative teaching. School leaders are suggested to enhance communication, establish clear goals, and promote team building activities. These techniques cultivate collaborative decision-making, career advancement, and flexibility among teachers, resulting in enhanced teaching strategies and enhanced the use of technology. The study also underscored the essence of shared decision-making in formulating instructional programs tailored to students' needs, urging teachers to collaboratively engage in curriculum development. Future researchers, it would be interesting to explore more about the specific mechanisms that connect an organizational climate to teacher's innovativeness to gain a deeper understanding and provide for appropriate interventions. Moreover, the findings validated James MacGregor Burns' Theory of Transformational Leadership within the context of enhancing teacher innovativeness. The study confirmed that transformational leadership components—such as effective communication, visionary leadership, team building and adequate support—are instrumental in creating a positive organizational climate and supportive learning environment. These elements foster innovative teaching practices, thereby proving the theoretical framework's applicability and relevance in promoting teacher innovativeness. The study's results demonstrated the influential impact of quality leadership, organizational climate, and learning environment on teacher innovativeness in school settings. Effective communication, and team building were the main contributing factors to enhance innovative teaching. Schools have to develop team-building activities, communication strategies, a common vision, and meaningful support to inspire and guide teachers in creating an environment conducive to innovative learning. Future researchers may explore examining specific mechanisms through which organizational climate influences teacher innovativeness to inform targeted interventions for educators and administrators alike.

5.0 Contributions of Authors

Every authors delivered equal contributions to the writing which includes conception, design, analysis, revision and collectively reviewed and approved the final manuscript.

6.0 Funding

This research was not funded by any specific grant agency.

7.0 Conflict of Interests

The authors declare no conflicts of interest concerning the publication of this paper.

8.0 Acknowledgment

The researchers extend heartfelt gratitude to the Almighty Father for His unwavering guidance and blessings throughout this research endeavor.

9.0 References

- Afzal, A., Khan, S., Daud, S., & Butt, A. (2023). Addressing the Digital Divide: Access and Use of Technology in Education. *Journal of Social Sciences Review*, 3(2), 883-895. <https://doi.org/10.54183/jssr.v3i2.326>
- Alnahdi, G. H., & Schwab, S. (2023). The impact of gender differences in teachers' teaching practices and attitudes on students' math and science achievement in Saudi Arabia: Evidence from TIMSS 2019 data. *Frontiers in Psychology*, 14, 1066843. <https://doi.org/10.3389/fpsyg.2023.1066843>
- Anaktototy, K. (2023). Promoting Creativity and Innovation in the Teaching and Learning Process. *Edu Sciences Journal*, 4(1), 59-66. <https://doi.org/10.30598/edusciencevol4iss1pp59-66>
- Aquino, C. J. C., Afalla, B. T., & Fabelico, F. L. (2021). Managing educational institutions: School heads' leadership practices and teachers' performance. *International Journal of Evaluation and Research in Education (IJERE)*, 10(4), 1325-1333. <https://doi.org/10.11591/ijere.v10i4.21518>
- Barcelona, K. E. P., Daling, B. A. J., & Doria, P. (2023). Challenges and opportunities of TLE teachers in Philippine public schools: An inquiry. *British Journal of Multidisciplinary and Advanced Studies*, 4(4), 44-60. <https://doi.org/10.37745/bjmas.2022.0247>
- Cents-Boonstra, M., Lichtwarck-Aschoff, A., Denessen, E., Aelterman, N., & Haerens, L. (2020). Fostering student engagement with motivating teaching: An observation study of teacher and student behaviors. *Journal of Curriculum Studies*, 52(6), 754-779. <https://doi.org/10.1080/02671522.2020.1767184>
- Chia, L. W., & Goh, C. C. M. (2016). Teachers' perceptions, experience, and learning. *Asia Pacific Journal of Education*, 36(sup1), 1-4. <https://doi.org/10.1080/02188791.2016.1141464>
- Cooray, P. S. (2023). School Culture and Leadership. Lab: Shannon Cooray'sLab. https://www.researchgate.net/publication/371639809_SCHOOL_CULTURE_AND_LEADERSHIP
- Converso, D., Cortini, M., Guidetti, G., Molinengo, G., Sottimano, I., Viotti, S., & Loera, B. (2019). Organizational climate and teachers' morale: Developing a specific tool for the school context - A research project in Italy. *Frontiers in Psychology*, 10, Article 2132. <https://doi.org/10.3389/fpsyg.2019.02132>
- Copur-Gencturk, Y., Thacker, I., & Cimpian, J. R. (2023). Teachers' race and gender biases and the moderating effects of their beliefs and dispositions. *International Journal of STEM Education*, 10, 31. <https://doi.org/10.1186/s40594-023-00420-z>
- Daing, C., & Mustapha, L. C., (2023). School administrators' instructional leadership skills and teachers' performance and efficacy in senior high schools in the national capital region, Philippines. Lab: Crisanto Daing's Lab. <https://doi.org/10.15739/IJEPRR.23.001>
- Fairman, J. C., Smith, D. J., Pullen, P. C., & Lebel, S. J. (2023). The challenge of keeping teacher professional development relevant. *Professional Development in Education*, 49(2), 197-209. DOI: 10.1080/19415257.2020.1827010
- Grigoropoulos, J. E. (2021). Educational leadership. *Handbook of Research on K-12 Blended and Virtual Learning Through the i2Flex Classroom Model*, 162-173. <https://doi.org/10.4018/978-1-7998-7760-8.ch009>
- Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the role of digital technologies in education: A review. *Sustainable Society, Advance online publication*. <https://doi.org/10.1016/j.susoc.2022.05.004>
- Han, W., & Abdrahim, N. A. (2023). The role of teachers' creativity in higher education: A systematic literature review and guidance for future research. *Thinking Skills and Creativity*, 48, 101302. <https://doi.org/10.1016/j.tsc.2023.101302>
- Hasbi. (2018). Leader vision for effective leadership. *Polingua: Scientific Journal of Linguistics, Literature, and Education*, 1(1), 18-22. <https://doi.org/10.30630/polingua.v1i1.46>
- Hayak, M., & Avidov-Ungar, O. (2020). The Integration of Digital Game- Based Learning into the Instruction: Teachers' Perceptions at Different Career Stages. *TechTrends*, 64, 887-898. <https://doi.org/10.1007/s11528-020-00503-6>
- Hoque, K.E., Wang, X., & Qi, Y. (2023). The factors associated with teachers' job satisfaction and their impacts on students' achievement: a review. *Humanit Soc Sci Commun* 10, 177 (2023). <https://doi.org/10.1057/s41599-023-01645-7>
- Huang, Z., Sindakis, S., Aggarwal, S., & Thomas, L. (2022). The role of leadership in collective creativity and innovation: Examining academic research and development environments. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.1060412>
- Hulme, M., & Wood, J. (2022). The importance of starting well: the influence of early career support on job satisfaction and career intentions in teaching. *Journal of Education for Teaching*, 504-521. <https://doi.org/10.1080/0309877X.2021.1985981>
- Johler, M., Krumsvik, R. J., Bugge, H. E., & Helgevd, N. (2022). Teachers' perceptions of their role and classroom management practices in a technology-rich primary school classroom. *Frontiers in Education*, 7. <https://doi.org/10.3389/feduc.2022.841385>
- Kolleck, N., Schuster, J., & Gräsel, C. (2021). Teachers' professional collaboration and trust relationships: An inferential social network analysis of teacher teams. Volume 111, Issue 1. <https://doi.org/10.1177/00345237211031585>
- Kovacs, H. (2017). Learning and Teaching in Innovation: Why it is important for education in the 21st century. *New Trends and Issues Proceedings on Humanities and Social Sciences*, 18(2), doi:10.21549/NTNY.18.2017.2.4.
- Lord, J., Roberson, S., & Odoi, A. (2020). Investigation of geographic disparities of pre-diabetes and diabetes in Florida. *BMC Public Health*, 20, 1226. <https://doi.org/10.1186/s12889-020-09311-2>
- Malanchini, M., Rimfeld, K., Allegrini, A. G., Ritchie, S. J., & Plomin, R. (2020). Cognitive ability and education: how behavioural genetic research has advanced our knowledge and understanding of their association. *Neuroscience and Biobehavioral Reviews*, 111, 229-245. <https://doi.org/10.1016/j.neubiorev.2020.01.016>
- Miller, H. H. (2020). Principal transformational leadership and school climate in Title 1 schools. Walden University. <https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=10031&context=dissertations>

- Oco, R. (2022). Leadership styles of school heads and its relationship to school performance. *Global Studies of Childhood*, 12(1), 57744. <https://doi.org/10.11216/gsj.2022.01.57744>
- O'Shea, C. (2021). Distributed leadership and innovative teaching practices. *International Journal of Educational Research Open*, 2, 100088. <https://doi.org/10.1016/j.ijedro.2021.100088>
- Peterson, A., Dumont, H., Lafuente, M., & Law, N. (2018). Understanding Innovative Pedagogies: Key Themes to Analyze New Approaches to Teaching and Learning. OECD Education Working Paper No. 172. DOI:10.1787/9F843A6E-EN
- Rusticus, S. A., Pashootan, T., & Mah, A. (2023). What are the key elements of a positive learning environment? Perspectives from students and faculty. *Learning Environment Research*, 26(2), 161–175. <https://doi.org/10.1007/s10984-022-09410-4>
- Schmidt, D. H., van Dierendonck, D., & Weber, U. (2023). The data-driven leader: developing big data analytics leadership competency framework. *Journal of Management Development*, 42(4). <https://www.emerald.com/insight/content/doi/10.1108/JMD-12-2022-0306/full/html>
- Tarrayo, V. N., Potestades, R. R., & Ulla, M. B. (2021). Exploring the Gender Perspective in English Language Teaching (ELT): Voices from ELT Practitioners in Philippine Higher Education Institutions. *Sex Cult*, 25(5), 1634–1652. <https://doi.org/10.1007/s12119-021-09840-x>
- Tingle, E., Corrales, A., & Peters, M. L. (2017). Leadership development programs: Investing in school principals. *Educational Studies*. <https://doi.org/10.1080/03055698.2017.1382332>
- Ukpokodu, O. N. (2019). Transformative pedagogy and learning in teacher education. In *Encyclopedia of Teacher Education*. https://doi.org/10.1007/978-981-13-1179-6_290-1
- Ventista, O. M., & Brown, C. (2023). Teachers' professional learning and its impact on students' learning outcomes: Findings from a systematic review. *Social Sciences & Humanities Open*, 8(1), 100565. <https://doi.org/10.1016/j.ssaho.2023.100565>
- Westgate, C. E., & Noble, K. D. (2019). Professional development programs should focus on building teachers' capacity in technology integration, adaptability, and creativity, while school leaders play a critical role in creating a supportive environment that values and rewards innovative practices. DOI:10.37745/bjmas.2022.0247
- Wrigley-Asante, C., Ackah, C. G., & Frimpong, L. K. (2023). Gender differences in academic performance of students studying Science Technology Engineering and Mathematics (STEM) subjects at the University of Ghana. *SN Soc Sci*, 3(1), 12. <https://doi.org/10.1007/s43545-023-00608-8>
- Yang, L., Chiu, M. M., & Yan, Z. (2021). The power of teacher feedback in affecting student learning and achievement: Insights from students' perspective. *Educational Psychology*, 41(7), 821–824. <https://doi.org/10.1080/01443410.2021.1964855>

Level of Online Media Literacy of Collegiate Students: Basis for a Proposed Curriculum Enhancement Program

Eduard M. Riparip*, Dennis G. Caballes

Centro Escolar University Graduate School, Manila, Philippines

*Corresponding Author Email: riparipeduard@gmail.com

Dated received: March 30, 2024

Date revised: June 18, 2024

Date accepted: June 24, 2024

Originality: 80%

Grammarly Score: 99%

Similarity: 20%

Recommended citation:

Riparip, E., & Caballes, D. (2024). Level of online media literacy of collegiate students: basis for a proposed curriculum enhancement program. *Journal of Interdisciplinary Perspectives*, 2(8), 137-150.
<https://doi.org/10.69569/jip.2024.0104>

Abstract. As early as the 2000s, the growing demand to integrate digital skills as competencies into the curriculum has been widely advocated by media scholars (Hobbs, 2009; Hobbs & Jensen, 2013; Bautista, 2021). Among these digital skills is online media literacy, which, according to Hallaq (2016), impacts students' acquisition of knowledge. Media literacy is defined as "the ability to access, analyze, evaluate, and create messages across a variety of contexts" (Livingstone, 2004). The five components of online media literacy formulated by Hallaq (2016) used in this study are ethical awareness, media access, media awareness, media evaluation, and media production. This study aimed to assess the level of online media literacy of Centro Escolar University-Makati students based on Hallaq's Digital Online Media Literacy Assessment (DOMLA). Using convenience sampling, 374 college students participated in the survey. Data collected were analyzed using statistical tools such as frequency, weighted mean, and the Kruskal-Wallis Test. The findings revealed that the students are slightly online media literate. Specifically, they are literate in ethical awareness and media awareness. The results also indicated no significant difference in the level of online media literacy across different ages and year levels, suggesting that media literacy is consistently moderate across different demographics. The study recommends a contextualized and interactive digital media literacy curriculum in college, which could either be separate and independent or integrated into various general education and professional subjects. Additionally, universities are encouraged to adopt the Vowel Approach in Online Media Literacy (awareness, education, integration, optimization, and utilization) formulated by the researchers.

Keywords: Online media literacy; Digital skills; Curriculum.

1.0 Introduction

In the present era, people live in a world that is saturated with media of all kinds (Vinney, 2023), extending its reach far and wide. This content saturation influences how people think and act, how they perceive the world, how they shape their opinions, and even how they change their behaviors. In such a media-rich environment, it is important to note that individuals who consume media must explore this complicated nature of information, i.e. discerning fact from fiction, getting details only from credible sources, producing quality content for public consumption, incorporating proper contexts in media products, among others.

The pervasive availability of media has resulted in its easy access, leading to media consumption. Media consumption is not just about listening, reading, browsing, and watching contents available on different media platforms such as social media, online media, print media, and broadcast media (TV and radio), but more importantly it is about applying critical and analytical thinking skills, i.e. how media consumers use the information they acquire from different media platforms.

This is where the concept of media literacy becomes relevant and necessary.

With the advent of digital technology, schools are advised to strengthen the need for the integration of technology and media into the curriculum. Likewise, the addition of digital skills as competencies is also encouraged. One of these digital skills is online media literacy among students. According to Hallaq (2016), the level of media literacy affects students' acquisition of knowledge. That is why it is very essential that media literacy becomes part of the curriculum enhancement.

Media literacy is defined as "the ability to access, analyze, evaluate, and create messages across a variety of contexts (Livingstone, 2004)." The four components of media literacy are "access, analysis, evaluation, and content creation (Livingstone, 2004)." Access refers to the opportunities for using media tools such as updating, upgrading, and extending hardware and software applications. Meanwhile, analysis means the ability to read and understand the conditions and possibilities of the media as tools. Evaluation is the ability to sense and distinguish facts and information that are reliable or not. Lastly, content creation means producing symbolic text, video, audio, and graphics in order for people to attain a deeper understanding of the conventions and merits of professionally produced material.

In 1997, Wulff (as cited in Schmidt, 2012) divided media categories of competencies into three: learning about media use, learning about media creation, and learning about media analysis. At present, ethical awareness is now incorporated into the categories.

Furthermore, media literacy is generally understood as an informed, critical understanding of the prevalent mass media, and it involves examining the techniques, technologies, and institutions involved in media production; being able to critically analyze media messages, and recognizing the role audiences play in making meaning from those messages. It is a kind of expanded information and communication skill that is responsive to the changing nature of information in our society. It addresses the skills students need to be taught in colleges and universities, the competencies citizens must have as they consume information in their homes and living rooms, and the abilities workers must have to understand the 21st-century challenges of a global economy.

The purpose of media literacy is "to help people use media intelligently, to discriminate and evaluate media content, to critically dissect media forms, to investigate media effects and uses, and to construct alternative media" (Kellner & Share, 2005) and includes the ability to "access, analyze, evaluate and produce communication in a variety of media forms" (Aufderheide, 1993).

The European Commission (EC) defines media literacy as "the ability to access the media, to understand and critically evaluate different aspects of the media and media content and to create communications in a variety of contexts."

In a Portuguese study conducted by Pereira et al. (2015) and Pereira and Moura (2019), they sought to assess levels of media literacy competence as adopted the European Council definition. In Pereira's latest study (2022), it explained that media literacy has three core elements, comprising: (1) the access to media and the capacity to use them; (2) the critical evaluation, understanding and analysis of the media and its contents; and (3) the capacity to engage in practices of mediatized participation and production.

In line with the important purpose of having a media-literate community, it is hoped that schools devise ways how to integrate digital skills, particularly online media literacy, into the curriculum. This way, students will be able to exhibit lifelong empowerment through media literacy.

Hobbs and Jensen (2013) identified two issues for the potential of media literacy to the future of the field of education: (1) media literacy's relationship to the integration of educational technology into the K-12 curriculum and (2) the relationship between media literacy education and the humanities, arts, and sciences.

As society is rapidly becoming an information-driven economy, students, being future leaders, must be equipped with a broader body of skills essential for success in the 21st century. Hence, basic education schools and higher

education institutions should heed the call for the transformation of its educational experience aimed at improving the learning environment for all students by integrating emergent technologies with the curriculum and into school facilities.

A good test of how university-level students possess the necessary level of online media literacy was shown at the height of the COVID-19 pandemic. It forced Philippine educational institutions to shift from traditional learning setup to online learning setup. Despite the seemingly insufficient digital and technological infrastructure in the country, as the World Bank stated, the schools still continued the academic year with the hope that they can still deliver the quality instruction that is due to the students. Educational institutions were forced to maximize the full potential of mobile learning applications, wireless access, open digital materials, and online learning resources in the teaching-learning process.

However, the problem lies in the use of these resources and materials to aid the students' independent study. During such uncertain times, did students effectively use media technologies to meet their needs and interests? Did they access and make informed choices about a wide range of media forms and content from different cultural and institutional sources? Did they understand how and why media content is produced? Did they critically analyze the techniques, languages, and conventions used by the media and the messages they convey? Did they creatively use the media to express and communicate ideas, information, and opinions? Did they identify, avoid, and/or challenge, media content, and services that may be unsolicited, offensive, or harmful?

Media literacy should not be treated as an isolated or independent skill. On the contrary, it is a skill that involves and encompasses other skills and forms of literacy: reading and writing literacy, audiovisual literacy (often referred to as image or visual literacy), and digital or information literacy.

The relevance of media literacy in the field of curriculum studies is increasingly becoming important. The reason is that knowledge is now, primarily, transferred through different digital technologies.

Individuals who are media literate are able to engage and participate at every level of public life, from social networking to e-Government. Individuals who are not equipped with these skills are left isolated and vulnerable. It plays a key role in advancing the collective intelligence of a population – engendering cultural and educational participation to enable not only social development but also economic progress and competitiveness of the internal and international markets (medialiteracyweek.us, n.d.).

Moreover, Kafai, Fields, and Searle (2018), as cited in Rasi, Vuojärvi, and Ruokamo (2019), an educational research approach to media literacy is focused on the production of various digital media and becoming literate in the 21st century. To be digitally literate, an individual must understand how to (a) access digital media; (b) navigate digital media; (c) read digital media; (d) create digital media (Baron, 2019; as cited in Rasi, Vuojärvi, and Ruokamo, 2019).

The present study aimed to assess the level of online media literacy of CEU Makati students based on Hallaq's Digital Online Media Literacy Assessment (DOMLA) (2016). Specifically, it sought to answer the profile of the respondents, the level of online media literacy of the participant in terms of ethical awareness, media access, media awareness, media evaluation, and media production. It also determined if there is a significant difference between the level of online media literacy of the students and their age and year level. After the analysis of the results, the researcher proposed a curriculum enhancement plan.

2.0 Methodology

2.1 Research Design

A quantitative method of research was employed in the study in order to better understand how digital online media can and should be used within a teaching/learning environment at the university. Specifically, the researchers used comparative and correlational methods in determining the level of online media literacy skills of CEU Makati students and their relationships with their profile.

2.2 Research Participants

A total of 374 CEU Makati students participated in the study, using convenience sampling due to some mobility restrictions brought about by the COVID-19 pandemic.

2.3 Research Instrument

The researcher used the instrument, Digital Online Media Literacy Assessment (DOMLA), formulated and developed by Tom Hallaq of Kansas State University. Permission from Hallaq was secured before the distribution of the questionnaire. The questionnaire has 50 statements pertaining to the students' online media literacy skills. It also has 5 constructs, namely ethical awareness, media access, media awareness, media evaluation, and media production.

2.4 Data Gathering Procedure

Upon defending the proposal and receiving the approval and consent from the researcher's professor in Seminar in Fieldwork and Research, a subject offered in Doctor of Education major in Curriculum and Supervision program at the CEU Graduate School, the researcher sent an email letter to the Vice President for CEU Makati and Dean of Studies to conduct the study online. The same was approved by the Vice President. Students were randomly chosen to participate in the study. The researcher collected data by sending the modified questionnaire to the students through Google Forms. Following this, the answers from the Google Form were encoded for statistical analysis.

2.5 Data Analysis

The following statistical tools were used in interpreting and analyzing the data:

1. The percentage was employed to determine the total respondents as to their profile.
2. The mean was used in determining the level of online media literacy of CEU Makati students.
3. The Kruskal-Wallis Test was also utilized to determine the significant difference between the respondents' profiles (age and year level) and the level of online media literacy.

3.0 Results and Discussion

3.1 Profile of the Respondents

Table 1. Age of the respondents

Age	Frequency	Percentage
17-20 years old	183	48.9
21-23 years old	169	45.2
24-27 years old	17	4.50
28 and above	5	1.30
Total	374	100

Table 1 shows the age distribution of the respondents, i.e. 183 out of 374 respondents or 48.9 percent are aged between 17-20 years old, followed by the age group, 21-23 years old, with 169 or 45.2 percent. These age groups make up 94.1 percent of the total respondents. They are one of the first batches of the Philippine Government's K-12 program, a 12-year basic education program, that instituted the stand-alone subject Media and Information Literacy (MIL) taken in Grade 11. This indicates a generational familiarity and exposure to contemporary educational reforms. The prevalence of this age group underscores the importance of understanding their online media literacy skills, given their status as digital natives who have grown up immersed in digital technologies and online media platforms (Prensky, 2001). He added the students today are all "native speakers" of the digital language of computers, video games, and the Internet.

Table 2. Gender of the respondents

Gender	Frequency	Percentage
Male	89	23.8
Female	264	70.6
LGBTQIA+	21	5.60
Total	374	100.0

Table 2 presents the gender profile of the respondents. It shows that CEU is a female-dominated university, comprising 70.6 percent of the total number of respondents, while only 23.8 percent comprises male students.

There were about 21 students or 5.6 percent who identified themselves as part of the LGBTQIA+. This gender composition mirrors broader trends in higher education, where female enrollment has surpassed male enrollment in many countries, including the Philippines. The significant representation of female students in this study highlights the importance of taking into consideration gender dynamics in understanding online media literacy skills, as research suggests variations in digital engagement and media consumption patterns between genders (Livingstone & Helsper, 2007).

Table 3. Course/Program of the respondents

Course/Program	Frequency	Percentage
Dentistry	66	17.6
International Hospitality Management (HRM and Tourism)	81	21.7
Medical Technology	76	20.3
Accountancy and Management	61	16.3
Pharmacy	47	12.6
Nursing	43	11.5
Total	374	100.0

The distribution of respondents across different courses/programs provides insight into the academic landscape of CEU Makati. It can be gleaned from Table 3 that the International Hospitality Management programs, comprising Hotel and Restaurant Management and Tourism Management, has the highest number of respondents with 81 or 21.7 percent, emerging as the most represented discipline. This is followed by Medical Technology at 76 or 20.3 percent, Dentistry at 66 or 17.6 percent, Accountancy and Management at 61 or 16.3 percent, Pharmacy at 47 or 12.6 percent, and Nursing at 43 or 11.5 percent. CEU is known for its science and allied health programs; this is why 62 percent comprises the total number of respondents. Understanding the distribution of respondents across different programs is crucial for tailoring interventions and curriculum enhancements to meet the specific needs and challenges faced by students in various academic disciplines.

Table 4. Year level of the respondents

Year Level	Frequency	Percentage
First Year	90	24.1
Second Year	103	27.5
Third Year	159	42.5
Fourth Year	6	1.60
Fifth Year	3	0.80
Sixth Year	13	3.50
Total	374	100.0

Table 4 shows the Year Level distribution of the respondents. Out of 374 students, 159 (42.5 percent) are already in their third year of college, while 103 (27.5 percent) are in their second year. This is followed by the First Year students at 24.1 percent, Sixth Year at 3.5 percent, Fourth Year at 1.6 percent, and Fifth Year at 0.8 percent. This set of data reflects a normal academic trajectory, in which students progress through sequential levels of undergraduate education, with larger population in earlier years and smaller in higher years.

Table 5. Media engagement of the respondents

Media Engagement	Frequency	Percentage
0-3 hours a day	22	5.90
3-6 hours a day	81	21.7
6-9 hours a day	91	24.3
9-12 hours a day	85	22.7
12-15 hours a day	50	13.4
15-18 hours a day	29	7.80
18-21 hours a day	9	2.40
22 hours and above a day	7	1.90
Total	374	100.0

Table 5 shows the media engagement or the number of hours spent by the participants online. On average, they spend 6-9 hours online, comprising 91 or 24.3 percent. This is followed by 9-12 hours at 22.7 percent, 3-6 hours at 21.7 percent, 12-15 hours at 13.4 percent, 15-18 hours at 7.8 percent, 0-3 hours at 5.9 percent, 18-21 hours at 2.4 percent, and 22 hours and above at 1.9 percent. In a report by New York-based agency We Are Social and social media management firm Hootsuite in 2022, the amount of time people across the world spend online has surged

remarkably in the wake of the COVID-19 pandemic. These agencies found that across all devices, the average Internet user aged 16 to 64 spends six hours and 58 minutes online per day. This confirms the 6-9 hours a day of media engagement of the students. One factor that contributed to the surge is the daily conduct of online classes by the students. The unprecedented transition to remote learning and increased reliance on digital technologies have likely contributed to this uptick in online engagement, as students adapt to virtual classrooms and utilize online resources for academic purposes.

It is crucial for curriculum developers to determine the media engagement habits of the students to tailor the teaching strategies and support mechanisms effectively in the curriculum. As students spend significant portions of their day online, there is a need to promote digital well-being, balance screen time with offline activities, and foster critical media literacy skills to navigate the digital landscape responsibly.

3.2 Online Media Literacy of CEU Makati Students

In terms of Ethical Awareness

Table 6. Descriptive statistics of the ethical awareness of the respondents

Indicators	Mean	SD	Interpretation
1. I usually try to know something about the business practices of online companies from which I purchase goods.	4.52	1.196	Agree
2. I am aware that sharing files of music that I have purchased is not legal.	4.71	1.363	Agree
3. I am aware of my school's policies about downloading digital files.	4.87	1.156	Agree
4. I have a personal responsibility to gather information about how to properly use media tools.	5.33	0.852	Agree
5. I can intelligently discuss the ethical considerations of using social media in the academic environment.	4.74	1.000	Agree
6. Using pictures from the Internet for personal projects is appropriate as long as I don't make money from them.	4.24	1.385	Somewhat Agree
7. If I post copyrighted material on a website hosted by a larger company (i.e. YouTube), that company shares legal responsibility for any copyright violation.	4.68	1.256	Agree
8. I am confident in my ability to update my computer's virus protection software.	4.24	1.449	Somewhat Agree
9. I am careful to be sure that my passwords for online banking do not include information that can be found in my online profiles on Internet sites such as Facebook, LinkedIn, or other easily accessible sites.	5.51	0.831	Strongly Agree
10. For this question, mark the "agree" checkbox.	5.09	0.777	Agree
Overall Mean	4.79	0.602	Agree

Table 6 shows that the respondents generally agree in terms of their online media literacy in ethical awareness, obtaining a total mean of 4.79. Of the 10 statements on ethical awareness, the statement "I am careful to be sure that my passwords for online banking do not include information that can be found in my online profiles on Internet sites such as Facebook, LinkedIn, or other easily accessible sites" obtained the highest mean, which is 5.51 with a verbal interpretation of "strongly agree". This is followed by the statement "I have a personal responsibility to gather information about how to properly use media tools," which obtained 5.33 weighted mean with a verbal interpretation of "agree".

The results speak highly of the CEU Makati students' sense of ethics even online. That despite the ongoing pandemic, following the basic tenets of ethics should still be the norm. The importance of ethical awareness in digital media cannot be overemphasized, especially since the increasing use of online media tools is accompanied by privacy issues and ethical concerns. These include copyright issues, academic theft, ethical considerations of using social media in the academic environment, the school's policies about downloading digital files from its learning management systems, and the like.

With an overall mean score of 4.79, indicating agreement, the findings suggest that students perceive themselves as being media literate in terms of ethical considerations. This aligns with previous research indicating a growing awareness among young adults regarding the importance of ethical behavior in online environments (Adenekan & Lala, 2022). They further stated that there was a high level of ethical behavior exhibited by college students in one university in Nigeria because of the students' well-versed use and conduct on social media. This connotes that students are now well aware of the dangers of over indulging in social media.

The study further highlights specific areas of strong agreement among respondents, such as the careful management of online banking passwords and the recognition of personal responsibility in acquiring information about media tools. These findings resonate with the study of Saikrishnan (2023), emphasizing the protection of personal data and digital well-being as a fundamental imperative in a world where digital interactions have become integral to everyday life. Moreover, the relevance of ethical awareness in the context of digital media, particularly amid the ongoing pandemic, is paramount. Despite the challenges posed by remote learning and increased reliance on online platforms, CEU Makati students demonstrate a commitment to upholding ethical standards, reflecting a resilient and adaptable approach to digital media usage. The importance of ethical considerations in digital communication and the need for educational interventions to promote responsible online behavior have to be taken into consideration in crafting online media literacy curriculum.

In terms of Media Access

Table 7. Descriptive statistics of the media access of the respondents

Indicators	Mean	SD	Interpretation
1. I am confident in my ability to succeed in a fully online class.	3.90	1.461	Somewhat Agree
2. I get most of my information from the Internet.	4.83	1.119	Agree
3. I regularly log in to several social media sites (i.e. Facebook, Twitter, Pinterest, etc.).	5.09	1.250	Agree
4. I access social media sites through a variety of devices (i.e. laptop, tablet, iPod, smartphone, etc.).	5.37	0.922	Agree
5. I usually spend 12 hours or more per week on the Internet - outside of school or work.	4.90	1.302	Agree
6. When I use my computer, I have several different browser windows open at the same time.	4.90	1.355	Agree
7. I prefer online vs. traditional classroom-based education.	2.35	1.578	Disagree
8. I am confident in my ability to adapt to changes in teaching and learning technology.	4.54	1.175	Agree
9. I have the ability to block contact from specific individuals or content on my social networking sites.	5.17	1.038	Agree
10. For this question, mark the 'disagree' check box.	2.19	1.220	Disagree
Overall Mean	4.32	0.638	Somewhat Agree

Table 7 sheds light on the media access patterns and attitudes and online media behaviors and preferences of CEU Makati students. Seven (7) out of the 10 statements on media access were agreed upon by the participants. However, the overall mean of media access is 4.325, which means that they slightly agree in terms of their media literacy on media access.

The statement “I access social media sites through a variety of devices (i.e. laptop, tablet, iPod, smartphone, etc.)” obtained the highest mean, which is 5.37, followed by the statement “I have the ability to block contact from specific individuals or content on my social networking sites” with a mean of 5.17. They also agree that they regularly log in to several social media sites (i.e. Facebook, Twitter, Pinterest, etc.) with a mean of 5.09.

The high mean scores across statements such as accessing social media through various devices, having the ability to block contact or content on social media sites, and regularly logging in emphasize the nuanced nature of digital inclusion among young people (Livingstone & Helsper, 2007). This further amplifies that CEU Makati students are actively engaged in digital spaces and skilled in using different digital tools to access online content. Moreover, the results indicate a significant level of engagement with various digital platforms and technologies among college students, especially exacerbated by the pandemic.

However, notable is the strong disagreement with online-based education by CEU Makati students, having obtained a mean of 2.35. This is complemented by their slight agreement (a mean of 3.90) on their confidence to succeed in a fully online class. The discrepancy in attitudes towards online-based education, as evidenced by the strong preference for traditional classroom-based learning over online modalities, echoes with the findings from Selwyn's (2012) critical analysis of schooling in the digital age. While students demonstrate confidence in their ability to adapt to changes in teaching and learning technology, their hesitation towards online education underscores the complex interplay between digital technologies and educational preferences.

Moreover, the overall mean score indicating a moderate level of agreement regarding media access resonates with insights from Boyd (2014) regarding teenagers' engagement with social media and digital platforms. CEU Makati students' familiarity with digital media tools and their ability to access online content without censorship reflect key aspects of media literacy, as highlighted by Buckingham (2005) in his review of research literature on children and young people's media literacy skills.

In terms of Media Awareness

Table 8. Descriptive statistics of the media awareness of the respondents

Indicators	Mean	SD	Interpretation
1. I feel competent in my ability to save money by shopping online.	4.21	1.356	Somewhat Agree
2. I am familiar with media file formats such as jpeg, Avi, and mp3.	5.30	0.936	Agree
3. I like to learn new things about other cultures through online activities (i.e. surfing the Internet, playing online games, participating in online communities or forums, etc.).	5.20	0.939	Agree
4. I am confident in my ability to evaluate information found online for credibility.	4.75	0.982	Agree
5. I am confident in my ability to personalize the information I receive through online news sites.	4.63	1.060	Agree
6. There are some circumstances where I would misrepresent my personal profile when interacting online socially.	4.07	1.334	Somewhat Agree
7. I am aware of the information that is available about me on the Internet.	4.91	1.054	Agree
8. I am confident in my ability to use the Internet for shopping.	5.02	1.081	Agree
9. I am more likely to post my media projects to sites targeted toward media professionals rather than open sites like Youtube.	4.01	1.242	Somewhat Agree
10. I am confident in my ability to find a way to take college courses without leaving my hometown even if I am not near a college campus.	4.15	1.388	Somewhat Agree
11. I am able to create an alter ego on the Internet.	3.99	1.426	Somewhat Agree
Overall Mean	4.57	0.632	Agree

As shown in Table 8, media awareness is generally rated by the respondents with an overall mean of 4.57, which translates to a verbal interpretation of "agree." This means that the students generally perceive themselves as media literate in terms of their awareness and understanding of various media formats and online activities.

Media awareness, as explained by the European Commission (2007), is one of the aims of media literacy. It is shown through the "increased awareness of the many forms of media messages encountered in everyday life. It should help citizens to recognize how the media filter their perceptions and beliefs, shape popular culture and influence personal choices. It should empower them with the critical thinking and creative problem-solving skills to make judicious consumers and producers of content (European Commission, Report on the Results of the Public Consultation on Media Literacy, 2007)."

Obtaining the highest means are the statements regarding familiarity with media file formats (mean = 5.30) and interest in learning about other cultures through online activities (mean = 5.20). These self-rated perceptions reveal the students' competence in technical aspects of media and in culturally enriching digital experiences. These competencies indicate that they are digitally literate generation that navigates various media formats and actively seeks to broaden their cultural horizons through online means.

Furthermore, the study also reveals that students feel competent in evaluating online information for credibility (mean = 4.75), emphasizing their capacity to critically assess the truthfulness of the contents found online as this is one of the increasingly vital skills in this period of widespread misinformation and digital manipulation. Additionally, it is also found out that students are confident in using the internet for shopping (mean = 5.02) and aware of personal information available online (mean = 4.91). While these are practical applications of online media literacy in everyday activities, these are also essential for navigating the digital marketplace and managing one's digital footprint.

On the other hand, the participants in the present study showed lower confidence in creating an alter ego online (mean = 3.99) and posting media projects to professional sites (mean = 4.01). This suggests a potential gap in advanced media production skills, i.e. comprehensive media literacy education.

Overall, the CEU Makati students possess a solid foundation in media awareness, with noteworthy strengths in online technical familiarity and cultural engagement. However, there is room for improvement in areas related to advanced media production and digital identity management.

In terms of Media Evaluation

Table 9. Descriptive statistics of the media evaluation of the respondents

Indicators	Mean	SD	Interpretation
1. I feel confident in my ability to identify the credibility of an Internet pop-up notice telling me to "click here."	4.85	1.197	Agree
2. I am aware of the terms of User Agreements for websites where I post content.	4.87	1.228	Agree
3. I have the ability to evaluate another person's media skill/competency.	4.16	1.137	Somewhat Agree
4. I visit social media sites (for example Facebook) to learn information about a specific company I am interested in.	4.49	1.238	Somewhat Agree
5. I am able to effectively evaluate the quality of student interaction between students in an online class discussion.	4.33	1.109	Somewhat Agree
6. I find it interesting to read personal arguments posted back and forth between my online friends on social networks.	4.26	1.463	Somewhat Agree
7. I have visited a brick-and-mortar store to view an item that I intend to purchase online.	3.65	1.563	Somewhat Agree
8. I often check competing online sources before making a major purchase from a brick-and-mortar store.	4.43	1.309	Somewhat Agree
9. I prefer sharing documents through online applications such as Google Drive or DropBox rather than standard email.	4.89	1.195	Agree
10. When I produce media projects for others, I can target the specific audience they want to reach.	4.48	1.126	Somewhat Agree
Overall Mean	4.441	0.695	Somewhat Agree

With an overall mean of 4.441 (somewhat agree), the students perceived that they slightly agree on their media evaluation skills. To define, media evaluation is the ability to sense and distinguish facts and information that are reliable or not. It includes media analysis, which is the ability to read and understand the conditions and possibilities of the media as tools. Crucial in the digital age, media evaluation assesses the credibility and reliability of information, which is essential for making informed decisions and avoiding misinformation.

It is observed that CEU Makati students are confident in identifying the credibility of internet pop-up notices (mean = 4.85) and are well aware of User Agreements (mean = 4.87). This is indicative of the students' knowledge of explicit online prompts and legal terms. Metzger and Flanagin (2013), in their study on credibility in online environments, emphasize that digital literacy includes recognizing trustworthy sources and understanding legal and ethical considerations in online interactions.

Nonetheless, CEU Makati students are slightly online media literate to evaluate another person's media competency (mean = 4.16) and the quality of student interaction in online discussions (mean = 4.33). While they are confident in their individual skills, they find it difficult to gauge the skills of online users of the online community. Media literacy does not only involve competencies exhibited individually but it also involves the evaluation of the social contexts in which media is produced and consumed.

Interestingly, the lower mean score for visiting brick-and-mortar stores to view items before purchasing online (mean = 3.65) reveals a cautious approach of students to online shopping. This indicates a critical evaluation of products that requires physical inspection. Consumers often seek tangible product experience before making online purchases, indicating a blend of digital and physical evaluation strategies.

In terms of Media Production

If one is ethically aware of and can access and evaluate media, he or she must also know how to properly create or produce content. Media production skills complete the online media literacy skills of an individual. Media production is the ability to create content such as text, video, audio, and graphics, which are necessary for effective communication in the digital age.

Table 10. Descriptive statistics of the media production of the respondents

Indicators	Mean	SD	Interpretation
1. I could be successful at a job where I promote my company's products through blogs, online forums, or other social media formats.	4.31	1.251	Somewhat Agree
2. I am confident in my ability to upload videos I have created to Youtube, Vimeo, or other similar sites.	4.10	1.458	Somewhat Agree
3. If I don't know how to use a creative software program, I can find information I need on the web.	5.06	1.019	Agree
4. I am familiar with free open-source programs that can be used to create media projects.	4.55	1.109	Agree
5. I share with my friends the personal media projects I have created like digital art, videos, or music mashups through online social media sites.	4.40	1.354	Somewhat Agree
6. I think professors should allow a student to replace a class assignment with a selfcreated multi-media project.	4.05	1.185	Somewhat Agree
7. I am capable of adding information to a web forum.	4.09	1.228	Somewhat Agree
8. I am confident in my ability to post to my own blog.	3.74	1.356	Somewhat Agree
9. I am confident in my ability to upload my creative work to web sites like DeviantArt.com, Vimeo, Flickr, or other online media outlets.	4.02	1.346	Somewhat Agree
Overall Mean	3.97	0.927	Somewhat Agree

The overall mean of media production of CEU Makati students is 3.9746, which can be interpreted as somewhat agree. It means that they slightly agree as to their skills in media production. Content creation means producing symbolic text, video, audio, and graphics in order for people to attain a deeper understanding of the conventions and merits of professionally produced material.

The highest mean is 5.06 (agree) for the statement "If I don't know how to use a creative software program, I can find information I need on the web." This implies that students are poised to learn independently and utilize online resources to enhance their media production skills.

On the other hand, surprisingly, the lowest mean is 3.74 (somewhat agree) for the statement "I am confident in my ability to post to my own blog." Despite some performance tasks or post-task activities in language or writing classes involving media creation, they still find skills in posting blogs to be a little adequate. This implies that they have low confidence in writing, which is one of the macro-skills in communication.

Summary of Online Media Literacy

Table 11. Descriptive statistics of the overall online media literacy skills

Constructs of Online Media Literacy Skills	Mean	SD	Interpretation
Ethical Awareness	4.79	0.602	Agree
Media Access	4.33	0.638	Somewhat Agree
Media Awareness	4.57	0.632	Agree
Media Evaluation	4.44	0.695	Somewhat Agree
Media Production	3.97	0.927	Somewhat Agree
Overall Mean	4.42	0.699	Somewhat Agree

Generally, the overall mean of the Online Media Literacy Skills of CEU Makati students is 4.42, which can be interpreted as somewhat agree. This can be further interpreted as somewhat media literate. This suggests that while students possess a basic level of media literacy, there is a significant need for enhancement, particularly in the areas of media access and production, where the mean scores were lower.

The respondents' slight literacy on online media poses a serious consideration not only in CEU Makati but also in other higher educational institutions (HEIs). The students may be ethically aware and media aware, but they also have to understand thoroughly, access properly, evaluate intensively, and produce critical online media content. Hence, this warrants close attention by HEIs.

Powers (2022), in her study on media literacy, states that young people “associated media literacy with technology use and information literacy and expressed the desire to learn about internet and social media safety as well as media production.” In saturated world of digital and online media, the need to further develop the media production skills of the students is imperative due to the vast options of social media sites now where young people can freely produce or create content. While content creation or media production has become a pastime for many, it must be properly taught to them by experts. Media production skills equip young people to not only navigate the ever-evolving social media and online media landscape but also thrive in a world that increasingly values effective communication and content creation.

In a Position Statement of the National Council for the Social Studies (2022), it calls for the integration of media literacy in social studies education. It further states that “today, young people are immersed in a complicated media ecology that promotes an infodemic of disinformation and profit-driven spin while simultaneously presenting extraordinary opportunities for participatory engagement. The social studies classroom is a critical platform for preparing our next generation to cope and thrive amid this unprecedented deluge of mediated messages. Given these realities, it is essential that social studies education integrates media literacy: the ability to access, analyze, evaluate, act on, and create media messages in a variety of forms.”

In summary, the overall media literacy skills of CEU Makati students are within the basic level of competence only. Based on the results, there is a strong need for a curriculum enhancement to address the identified gaps in media access and media production categories. Hence, the researchers formulated some guidelines that may be used by higher education institutions (HEIs) in improving their students' online media literacy so that they will be well-prepared to engage critically and creatively with the media landscape, becoming informed and skilled online media users.

3.3 Difference Between the Students' Level of Online Media Literacy Skills When Grouped According to Their Age and Year Level

Table 12. Analysis for the difference between the college students' level of online media literacy based on age

Age group	Mean Rank	H value	Sig. value	Interpretation	Decision to Ho
17-20 years old	189.90	3.179	0.365	Not Significant	Accept
21-23 years old	187.55				
24-27 years old	148.15				
28 and above	231.70				

$\alpha = 0.05$ Level of Significance

Table 12 shows the mean comparison of online media literacy when grouped according to age categories. As shown from the table, there is no significant difference across the groups reflective of the H value of 3.179, $p > 0.05$. Hence, the null hypothesis is accepted. This means that regardless of age, their online media literacy is the same. College students are active users of digital technologies. They are called digital natives as opposed to adults who are called digital immigrants. Surprisingly, college students are merely slightly media literate, as shown in the level of online media literacy data above. This can be explained by the general public's common notion that media literacy only involves watching videos, listening to music, browsing social media, reading articles, and playing mobile games. But media literacy is defined as an informed, critical understanding of the prevalent mass media, and it involves examining the techniques, technologies, and institutions involved in media production; being able to critically analyze media messages, and recognizing the role audiences play in making meaning from those messages.

Moreover, Rasi, Vuojärvi, and Ruokamo (2019) explain in their study that “media literacy education interventions must be designed to meet the needs of individuals of different ages by understanding the life roles and goals that

they have across the lifespan. Different pedagogical strategies are required to effectively address the media literacy competencies of young children, teens, adults, parents, and older adults.”

Table 13. Analysis for the difference between the college students’ level of online media literacy based on year level

Year Level	Mean Rank	H value	Sig. value	Interpretation	Decision to Ho
First Year	201.90	5.154	0.397	Not Significant	Accept
Second Year	177.18				
Third Year	188.42				
Fourth Year	219.67				
Fifth Year	183.83				
Sixth Year	144.35				

$\alpha = 0.05$ Level of Significance

Table 13 shows the mean comparison of online media literacy when grouped according to year level. The data shows there is no significant difference across all year levels reflective of the H value of 5.154, $p > 0.05$. Hence, the null hypothesis is accepted. This means that regardless of the year level, online media literacy is the same.

Irrespective of the year level, college students have the same level of online media literacy. This means that they consume media, i.e. online and offline, equally in amount, content, and use because of the prevalence of free subscriptions to different online media tools. This no longer creates a divide in terms of media accessibility. It means the playing field is now even. It can also be inferred that despite the subject Media and Information Literacy they took in Senior High School, they still belong to the slightly online media literate bracket.

3.4 Proposed Curriculum Enhancement Plan

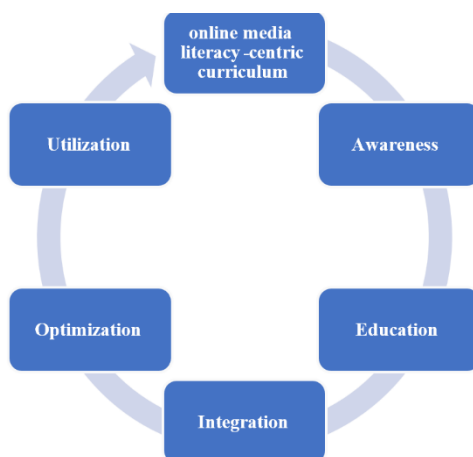


Figure 1. The vowel approach in online media literacy (Riparip, 2022)

Upon analyzing the results, the following policies and/or guidelines are proposed to enhance the college curriculum regardless of the programs or courses students take:

- Awareness.** Reintroduce the importance of online media literacy education in college as a life skill;
- Education.** Intensify the media literacy education movement in college by creating campaigns about understanding media, contemporary communication, news literacy, information literacy, technology literacy, and digital citizenship, to create a state of public trust and cognitive immunization in the face of rumors, fake news, false information, disinformation, misinformation, and malinformation;
- Integration.** Integrate contextualized and interactive digital media literacy curriculum in college into different general education and professional subjects; otherwise, draft a separate and independent media literacy program that is age-appropriate;

- d. **Optimization.** Optimize different digital media tools in highlighting the value of collaborative, creative, playful, and multimodal media production practices as well as analytic, reflective, inquiry- and project-based learning practices in media literacy education; and
- e. **Utilization.** Provide extensive training and/or retraining, including immersion activities, of media literacy teachers in Senior High School and college, and utilize these in their lessons.

The "Vowel Approach in Online Media Literacy," which stands for Awareness, Education, Integration, Optimization, and Utilization, summarizes the proposed approaches for improving media literacy skills of the students. This holistic approach aims to address the gaps identified in the current media literacy levels of students and ensure a comprehensive enhancement of their digital competencies.

4.0 Conclusion

Based on the results and discussion, it can be concluded that most of the respondents are females aged between 17-20 years old, with an average media engagement between 6-9 hours a day. The students are also slightly online media literate. However, they are online media literate in ethical awareness and media awareness categories. This is evident from their careful management of online banking passwords and their recognition of personal responsibility in acquiring information about media tools

Despite their proficiency in digital or online media usage, noteworthy is their preference for traditional classroom-based education over online learning. This implies that while students are confident in adapting to digital technologies, they still value conventional teaching strategies.

The results further indicate that there is no significant difference between the college students' level of online media literacy and their age and year level, indicating that online media literacy is consistently moderate across different demographics. These insights provide highlight on the need for academic interventions that enhance online literacy skills that should be part of the students' 21st century skills and foster responsible engagement with digital technologies, bridging the gap between traditional and online learning modalities within the university setting.

5.0 Contributions of Authors

The authors confirm the equal contribution in each part of this work.

6.0 Funding

This study received no specific grant from any funding agency.

7.0 Conflict of Interests

Both authors declare that they have no conflicts of interest as far as this study is concerned.

8.0 Acknowledgment

The authors would like to thank the students and administrators of Centro Escolar University Makati for allowing them to conduct the study.

9.0 References

- Adenekan, T., & Lala, A. (2022). Ethical behaviour and the use of social media by undergraduates, University of Ibadan. Library Philosophy and Practice (e-journal), 7293. <https://digitalcommons.unl.edu/libphilprac/7293>
- Baron, R. J. (2019). Digital literacy. In R. Hobbs & P. Mihailidis (Eds.), *The international encyclopedia of media literacy* (Vol. 2, pp. 343-349). Hoboken, NJ: Wiley Blackwell.
- Bautista Jr., A. (2021). Teaching media and information literacy in Philippine senior high schools: Strategies used and challenges faced by selected teachers. *Asian Journal on Perspectives in Education*. Available at SSRN: <https://ssrn.com/abstract=3930867>
- Boyd, D. (2014). *It's complicated: The social lives of networked teens*. Yale University Press.
- Buckingham, D. (2005). The media literacy of children and young people: A review of the research literature. *Media International Australia*, 171(1), 5-14.
- Buckingham, D. (2015). Defining digital literacy: What do young people need to know about digital media? *Nordic Journal of Digital Literacy*, 10, 21-35.
- Hallaq, T. (2016). Evaluating online media literacy in higher education: Validity and reliability of the digital online media literacy assessment (DOMLA). *Journal of Media Literacy Education*, 8(1), 62-84. <https://doi.org/10.23860/jmle-8-1-5>
- Hobbs, R. (2010). *Digital and media literacy: A plan of action*. The Aspen Institute. Retrieved from <https://files.eric.ed.gov/fulltext/ED523244.pdf>

- Hobbs, R., & Jensen, A. (2013). The past, present, and future of media literacy education. *Journal of Media Literacy Education*, 1(1). <https://doi.org/10.23860/jmle-1-1-1>
- Kafai, Y. B., Fields, D. A., & Searle, K. A. (2018). Understanding media literacy and DIY creativity in youth digital productions. In R. Hobbs & P. Mihailidis (Eds.), *The international encyclopedia of media literacy* (Vol. 2, pp. 1479–1489). Hoboken, NJ: Wiley Blackwell.
- Livingstone, S. (2004). What is media literacy? *Intermedia*, 32(3), 18-20.
- Livingstone, S., & Helsper, E. J. (2007). Gradations in digital inclusion: Children, young people and the digital divide. *New Media & Society*, 9, 671-696.
- Malik, S. (2008). Media literacy and its importance. Society for Alternative Media and Research.
- Metzger, M. J., & Flanagin, A. J. (2013). Credibility and trust of information in online environments: The use of cognitive heuristics. *Journal of Pragmatics*, 59, 210-220.
- National Council for the Social Studies. (2022). Media literacy. <https://www.socialstudies.org/cs4/media-literacy>
- Pereira, S., & Moura, P. (2019). Assessing media literacy competences: A study with Portuguese young people. *European Journal of Communication*, 34(1), 20-37. <https://doi.org/10.1177/0267323118784821>
- Pereira, S., Pinto, M., & Moura, P. (2015). Níveis de literacia mediática: Estudo exploratório com jovens do 12.º ano [Levels of media literacy: An exploratory study with young people in the 12th grade]. CECS.
- Pereira, S., & Moura, P. (2022). Assessing media literacy competences: Reflections and recommendations from a quantitative study. *Journal of Media Literacy Education Pre-Prints*. Retrieved from <https://digitalcommons.uri.edu/jmle-preprints/30>
- Prensky, M. (2001). Digital natives, digital immigrants part 1. *On the Horizon*, 9(5), 1-6.
- Powers, A. (2022). Generation Z and media literacy: Young people's perceptions of media literacy education. <https://surface.syr.edu/thesis/692>
- Rasi, P., Vuojärvi, H., & Ruokamo, H. (2019). Media literacy education for all ages. *Journal of Media Literacy Education*, 11(2), 1-19. <https://doi.org/10.23860/JMLE-201911-2-1>
- Saikrishnan, S. (2023). Navigating the digital marketplace: Tips for consumers to protect their privacy and security. *International Journal of Research and Analytical Reviews*, 10, 39-43.
- Selwyn, N. (2012). Making sense of young people, education and digital technology: The role of sociological theory. *Oxford Review of Education*, 38(1), 81-96.
- Schmidt, H. (2012). Media literacy education at the university level. *The Journal of Effective Teaching*, 12(1), 64-77.
- Tornero, J. (n.d.). Media literacy: New conceptualisation, new approach. Retrieved from <https://core.ac.uk/download/pdf/288483471.pdf>
- Vinney, C. (2023). Media literacy in the modern age. Retrieved from <https://www.verywellmind.com/what-is-media-literacy-5214468>
- We Are Social & Hootsuite. (2022). Digital 2022: Global overview report. Retrieved from <https://datareportal.com/reports/digital-2022-global-overview-report>
- World Bank. (2005). Philippines: Meeting the infrastructure challenges. Washington, DC. © World Bank. <https://openknowledge.worldbank.org/handle/10986/8459> License: CC BY 3.0 IGO.

Assessment of Behavioral Intention to Adopt Educational Mobile Application in Advanced Mathematics for Engineering Education

Aura Marie B. Novesteras

College of Engineering, Quezon City University, Quezon City, Philippines

Author Email: aura.marie.novesteras@qcu.edu.ph

Dated received: June 4, 2024

Date revised: June 18, 2024

Date accepted: June 26, 2024

Originality: 90%

Grammarly Score: 99%

Similarity: 10%

Recommended citation:

Novesteras, A.B. (2024). Assessment of behavioral intention to adopt educational mobile application in advanced mathematics for engineering education. *Journal of Interdisciplinary Perspectives*, 2(8), 151-157. <https://doi.org/10.69569/jip.2024.0262>

Abstract. Technology has long played a crucial role in society, including its application in education. The learning experiences of students in higher education have been significantly transformed. This study explores the adoption and acceptance of the Advanced Math mobile application among students, focusing on four key variables: social influence, performance expectancy, effort expectancy, and facilitating conditions. The study involved 253 participants who downloaded and used the Advanced Math mobile application as a supplemental study tool. The findings indicate that social influence significantly impacts students' decisions to use the application. The performance of the mobile application enhances students' productivity by providing easy access to lecture information, thereby supporting their learning process and motivating them to use the application. Facilitating conditions enable students to work independently at their preferred pace and access the application anytime and anywhere. The behavioral intention to use the mobile application is associated with positive feelings, leading students to use it as an additional resource for learning Advanced Math. Mobile applications have the potential to revolutionize educational settings by enhancing engagement, accessibility, and personalized learning. However, their effective use in the classroom necessitates robust pedagogical frameworks that align with learning objectives and provide continuous support for educators. Future research should continue to explore the challenges and opportunities of integrating mobile applications into the classroom to support both teachers and students in an increasingly digital society.

Keywords: Higher education; Behavioral intention; Usability; Social influence; Mobile applications; UTAUT.

1.0 Introduction

It is a reality that technology has dominated society for so long. Everyone uses technology, from kids to teens, including adults and seniors. Modern life is impossible without smartphones, which simplify everything by changing how people play, socialize, communicate, shop, and even enhance students' learning styles. With the advent of information technology, higher institutions have transformed the student learning experience in many ways. One of these is integrating mobile applications (Criollo et al., 2021) to easily access course materials, which enables students to review the topics without internet connectivity anytime and anywhere (Pereira & Rodrigues, 2013). Mobile learning has become a new trend in education owing to the diverse needs of students primarily in reviewing higher mathematics topics.

Furthermore, mobile devices are currently one of the most popular ways to teach and learn mathematics. Still, educational mobile applications in engineering have not yet reached the same degree of development as e-learning

applications. The Unified Theory of Acceptance and Use of Technology (UTAUT) framework, which takes into account four important factors: performance expectancy, effort expectancy, social impact, and facilitating conditions, can be used to assess behavioral intention in technology adoption. Performance expectancy was used in the context of mobile learning to show that students can use mobile learning to learn at their own pace, comfort, and speed (Alshabeb et al., 2020). It was found that performance expectancy had a substantial impact on behavioral intention to use mobile (Wang et al., 2011), while perceptions of the benefits of improving job performance are what drive their use of mobile learning (Iqbal, 2012). The second factor is effort expectancy, which deals with the ease of use associated with the use of a system or measures how easy it is for someone to attempt the technology's adaptation (Arenas, 2015). The students' adoption of technology in the classroom is mostly driven by their perception of its ease (Chang et al., 2011). Effort expectancy emphasizes the value of user-friendly features; students are more likely to accept a technology when they believe it to be easy to use (Abu-Al-Aish et al., 2012). The third factor is social influence. Adoption and utilization of technology are greatly influenced by friends and family who are already using technological platforms and devices (Zhou et al., 2019). A student's motivation and engagement in the classroom can be significantly increased through the use of mobile learning technologies (Ciampa, 2014). The last factor is the facilitating condition, which refers to individuals' perceptions of the support available in system adoption (Venkatesh et al., 2003). The offline features increase its dependability and support for adopting the mobile application.

This study assessed the factors that influence the adoption and utilization of the Advanced Math mobile application for industrial engineering by utilizing the Unified Theory of Acceptance and Use of Technology (UTAUT) framework.

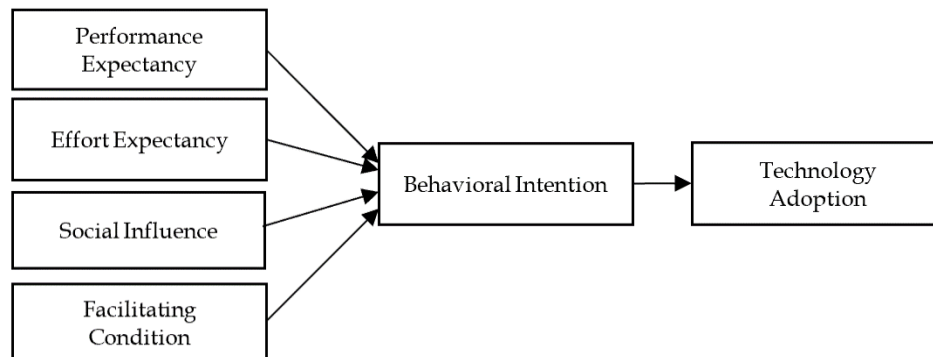


Figure 1. Unified Theory of Acceptance and Use of Technology (UTAUT)

2.0 Methodology

2.1 Research Design

This study employed the descriptive-evaluative methodology to quantify the factors influencing the adoption and utilization of mobile applications for Advanced Math. This research utilized the Unified Theory of Acceptance and Use of Technology (UTAUT) framework, which has been applied in several domains, such as e-learning systems. In this study, the level of acceptance to use the technology among respondents was evaluated based on performance expectancy, effort expectancy, social influence, and facilitating conditions.

The mobile application was installed by the users on smartphones and used as a supplemental aid in their study. The features of the application are illustrated below, as shown in Figure 2. In addition, the design of the system followed the Commission on Higher Education Memorandum Order (CHED CMO) for the syllabus, which includes an introduction, an example, and its solution with explanation.

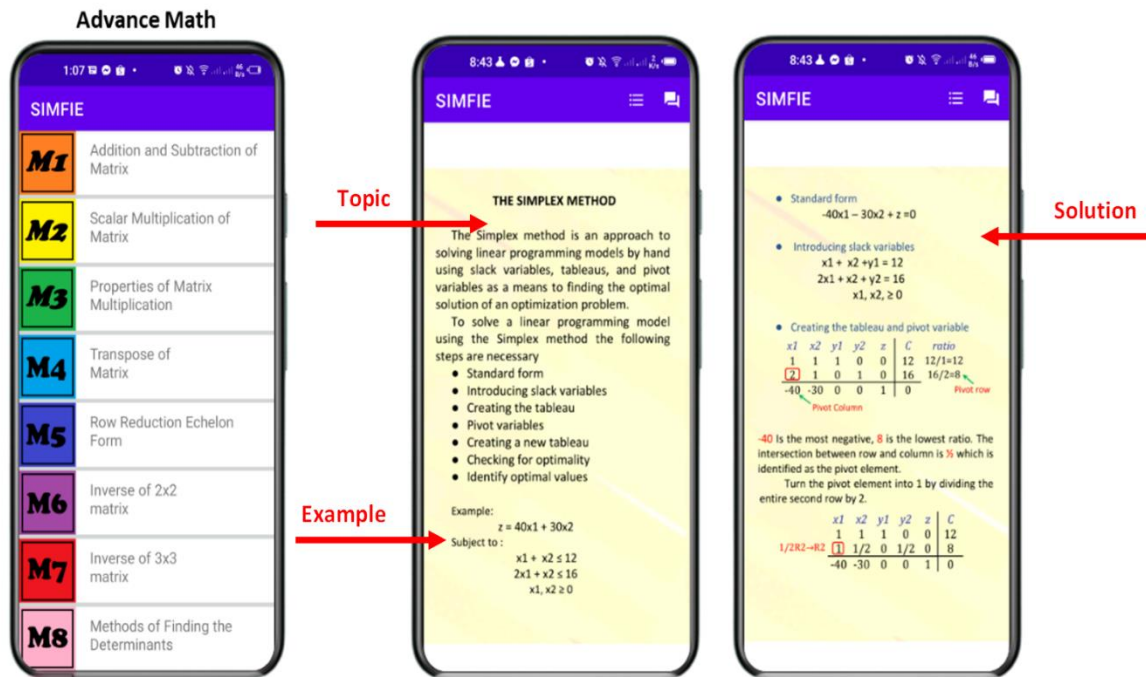


Figure 2. System Design of Advanced Math Mobile Applications

2.2 Research Participants

The study was conducted in Quezon City University, located in Barangay San Bartolome, Novaliches, Quezon City, Philippines. The study's participants consisted of 253 students enrolled in the Advanced Math subject of Industrial Engineering course for the second semester of 2021–2022 academic year.

2.3 Research Instrument

The researcher used the adopted and modified instrument of Unified Theory of Acceptance and Use of Technology (UTAUT) framework which was validated by the Industrial Engineering experts to assess the motivations influencing the level of acceptance of the users to adopt the Advanced Math mobile application in terms of performance expectancy, effort expectancy, social influence, and the facilitating conditions that align with how users perceive the application. Each variable consists of five items, which were created to describe the level of acceptance the user experienced., a 5-point Likert scale was employed. A scale of 5 was deemed highly acceptable, while 1 was considered unacceptable.

2.4 Data Gathering Procedure

For this study, data collection followed a series of steps. First, a letter requesting permission to carry out the study was sent to the Director of the Department of Research, Extension, Planning, and Links. After the approval, the researcher designed and developed the instructional mobile application for Advanced Math. Third, the professor of Advanced Math assisted with the download and installation of the mobile application. It was utilized as an offline study resource. Fourth, the researcher and the Advanced Math professor described the nature of survey questionnaires, along with its purpose. The survey questionnaires were distributed online. Following the completion of the research questionnaires, pertinent data was gathered and tallied. Lastly, the researcher assured that the respondent's information would be treated with the highest level of confidentiality.

2.5 Ethical Considerations

Confidentiality shall be maintained by treating the information that is collected with the utmost care. Informed consent was acquired. Approval from the respondents will be requested. Furthermore, autonomy was used. There is always a chance for respondents to decline to take part in the survey.

3.0 Results and Discussion

3.1 Acceptability of the Technology

In terms of Performance Expectancy

Table 1. Descriptive statistics of the level of acceptability of the technology in terms of performance expectancy

Indicators	Mean	Interpretation
1. Mobile application is effective in studying lessons	4.12	Acceptable
2. Mobile application increases my productivity at school	4.75	Highly acceptable
3. Mobile applications provide ease of getting information	4.73	Highly acceptable
4. Mobile applications provide pleasure when using it	4.60	Highly acceptable
5. Mobile application is enjoyable while studying lesson	4.55	Highly acceptable
Average Weighted Mean	4.55	Highly acceptable

In terms of performance expectancy, Table 1 shows the respondents' acceptance level of using the Advance Math mobile application. The respondents' evaluations yielded a highly acceptable interpretation for the mobile application, which increases productivity at school. Students find mobile learning advantageous, which increases their motivation to study (Alshabeb et al., 2020). Furthermore, the mobile application provides ease of getting information; this involves learning more effectively and having better access to instructional materials in a way that makes it pleasurable to use. The data implied that students' efficacy and efficiency increased by utilizing the mobile application while accomplishing tasks related to school (Iqbal, 2012). Meanwhile, mobile applications effectively facilitate learning and are effective in studying lessons by making the information easier to understand, which signifies an acceptable interpretation. The results of this study further support Iqbal's (2012) claim that respondents' perceptions of the benefits of improving job performance are what drive their use of mobile learning. To sum up, the level of acceptance of respondents adopting the Advance Math mobile app indicated a highly acceptable interpretation. This suggests that the mobile application's perceived performance to boost academic achievement is what motivates users to accept it.

In terms of Effort Expectancy

Table 2. Descriptive statistics of the level of acceptability of the technology in terms of effort expectancy

Indicators	Mean	Interpretation
1. I find mobile application easy to learn	4.53	Highly acceptable
2. Manipulating mobile application is easy	4.44	Acceptable
3. Mobile application is comfortable to use	4.70	Highly acceptable
4. I can use mobile application in my own pace	4.60	Highly acceptable
5. Mobile application is interesting to use	4.43	Acceptable
Average Weighted Mean	4.54	Highly acceptable

Based on Table 2, the study's findings showed that respondents' level of acceptance of the mobile application is highly acceptable in terms of effort expectancy. Since it is comfortable to use, they are more persuaded to utilize technology in their learning processes when they find it easy to navigate the features of the system. This result emphasized that mobile technology's simplicity of use had a beneficial impact on users' effort expectations and usage (Chang et al., 2011). In addition, the mobile application can be used at their own pace, which permits them to use the application at their most convenient time and place. This self-paced scheme boosts the learning process by letting users learn according to their individual preferences. Considering the respondents' perspective, the mobile application is easy to learn without the need for far-reaching tutorials due to its user-friendly interface. On the other side, manipulating the mobile application is easy for the respondents and considered acceptable. The simplicity of the main menu makes it easy to use its diverse features as they develop familiarity during manipulation. Likewise, the mobile application is interesting to use because most of the topics are related to the lessons. The application provides users with content that is interesting, which encourages them to keep using it. To summarize, perceived ease of use of the mobile application enhances efficacy and satisfaction in the learning experience.

In terms of Social Influence

Table 3. Descriptive statistics of the level of acceptability of the technology in terms of social influence

Indicators	Mean	Interpretation
1. People influence me to use a mobile application	4.75	Highly acceptable
2. I get engaged with school activities because of mobile application	4.70	Highly acceptable
3. It is easy for me to become skilled using a mobile application	4.45	Acceptable
4. Using mobile applications boosts my learning experience	4.45	Acceptable
5. Using mobile applications increases my self-confidence	4.65	Highly acceptable
Average Weighted Mean	4.60	Highly acceptable

In terms of social influence, Table 3 illustrates that the Advanced Math mobile application is highly acceptable for students. The data revealed that people influence their decision to use the application. Seeing family and friends use the application with positive feedback can convince them to use it based on their recommendations. Friends and family who are already utilizing technological platforms and gadgets have a significant influence on people's adoption and use of technology (Zhou et al., 2019). Students get engaged in school activities because of mobile applications. They have access to information at all times, which helps them stay on top of school-related tasks even outside of school. Moreover, students increase their self-confidence because they practice skills at their own pace and acquire fresh information. Conversely, students find it acceptable because the mobile application boosts their learning experience as they develop their abilities. The study's findings disclosed that individuals have a big impact on how mobile applications are used, frequently with favorable results. Parents, instructors, and classmates' encouragement can motivate students to explore educational applications, which can boost their confidence level.

In terms of Facilitating Conditions

Table 4. Descriptive statistics of the level of acceptability of the technology in terms of facilitating conditions

Indicators	Mean	Interpretation
1. I can rely on using mobile applications even no internet connection	4.65	Highly acceptable
2. Mobile application is compatible with smartphones	4.38	Acceptable
3. The aesthetic features of mobile applications can enhance visual usability	4.40	Acceptable
4. Mobile application is responsive to its usability	4.33	Acceptable
5. I can access mobile applications anytime, everywhere	4.70	Highly acceptable
Average Weighted Mean	4.49	Acceptable

Table 4 presents the data with regards to the level of acceptance of students adopting the Advanced Math mobile application in terms of "facilitating conditions." The data showed that the mobile application is highly acceptable because it can be accessed anytime and anywhere. The ability to utilize the offline features of the application improves dependability because users can rely on it when reading and reviewing lessons. Likewise, the students can rely on mobile applications even without an internet connection. This allows students to review the material at any time and from any location, even in the absence of internet connectivity (Pereira & Rodrigues, 2013). Meanwhile, it is acceptable for the students that the aesthetic features of mobile applications can enhance visual usability. The eye-catching visuals and color schemes can produce a relaxing atmosphere, which enhances the application's usability. In addition, the mobile application is compatible with smartphones and responsive to their usability. It can be installed and run effectively on smartphones and delivers improved features. The study's findings showed that the flexibility to use mobile applications from anywhere at any time provides a number of advantages that improve user convenience and functionality. This facilitates learning while on the go, which is the foundation for promoting engagement, productivity, and connectivity.

3.2. Behavioral Intention in Adopting the Technology

The respondent's level of behavioral intention to utilize the Advanced Math mobile application is discussed in Table 5. The students find it highly acceptable to use the mobile application as a supplemental tool for studying lessons. For the students, the mobile application is an additional study tool that speeds up their learning process, and they intend to incorporate the mobile application into their lessons.

Table 5. Descriptive statistics of the level of behavioral intention in adopting the technology

Indicators	Mean	Interpretation
1. I intend to incorporate the mobile application into my lessons	4.56	Highly acceptable
2. It is interesting to use the mobile application	4.39	Acceptable
3. It is advisable to recommend the mobile application to other students	4.50	Highly Acceptable
4. I like to use the mobile application as a supplemental tool for studying lessons	4.63	Highly Acceptable
5. I think it's a good idea to use the mobile application in the classroom	4.45	Acceptable
Average Weighted Mean	4.51	Highly Acceptable

Furthermore, they would recommend the mobile application to others. Conversely, it is acceptable to the students that it is a good idea to use the mobile application in the classroom because they think it can enhance their learning experience. It follows that students are clearly in favor of using the mobile application in the classroom, finding it an interesting tool. It was evident that there is a clear behavioral intention among the students to integrate the Advanced Math mobile application into their study routine. They view it as a useful tool that supports their learning process. The behavioral intention to use the system addresses the perceived value of using mobile learning, which stimulates joyful feelings using technology (Sagnier et al., 2020).

4.0 Conclusion

Mobile apps have become powerful instruments that have the ability to revolutionize learning environments. There is growing evidence that they can improve individualized learning, accessibility, and engagement. The benefits of integrating them into educational settings have shown potential that needs further consideration for issues like digital equity and privacy concerns. Therefore, encouraging teachers to use mobile apps effectively calls for consistent assistance and strong pedagogical frameworks that are in line with learning objectives. Strong pedagogical frameworks that support learning objectives and continual support for educators are necessary for the efficient use of mobile apps in the classroom. Future research ought to continue to examine the challenges of incorporating mobile applications in education while advancing instructional strategy in order to ensure that mobile applications continue to develop as essential elements of contemporary education and enable both educators and students to flourish in an increasingly digital world.

5.0 Contributions of Authors

Novesteras: Research, writing, methodology, conceptualization, and supervision in the design and development of mobile applications, and editing.

6.0 Funding

No funding has been provided for this study

7.0 Conflict of Interests

The author declares no conflicts of interest about this paper.

8.0 Acknowledgment

The author would like to sincerely thank Dr. Helen L. Mendoza, her adviser, for all of her help and support while doing this study. Additionally, a hearty thanks to Dr. Angelo Bautista of Quezon City University's Research, Extension, Planning, and Linkages for allowing the author to conduct this research and, lastly, to Dr. Juan Paolo Magcuyao for extending help in the design and development of the mobile application.

9.0 References

- Abu-Al-Aish, A., Love, S., & Hunaiti, Z. (2012). Mathematics students' readiness for mobile learning. *International Journal of Mobile and Blended Learning (IJMBL)*, 4(4), 1-20. <https://doi.org/10.4018/jmbl.2012100101>
- Alshabeb, A. M., Alharbi, O., Almaqrn, R. K., & Albazie, H. A. (2020). Studies employing the unified theory of acceptance and use of technology (UTAUT) as a guideline for the research: Literature review of the Saudi context. *Advances in Social Sciences Research Journal*, 7(4), 18-23. <https://doi.org/10.14738/assrj.74.8001>
- Arenas-Gaitán, J., Peral-Peral, B., & Ramón-Jerónimo, M. (2015). Elderly and internet banking: An application of UTAUT2. *Journal of Internet Banking and Commerce*, 20(1), 1-23. <http://hdl.handle.net/11441/57220>
- Chang, C. C., Lin, C. L., & Yan, C. F. (2011). The influence of perceived convenience and curiosity on continuous English learning intention in a mobile environment. *Journal of Educational Media & Library Sciences*, 48(4). <https://doi.org/10.1080/1475939X.2013.802991>
- Ciampa, K. (2014). Learning in a mobile age: An investigation of student motivation. *Journal of Computer Assisted Learning*, 30(1), 82-96. <https://doi.org/10.1111/jcal.12036>

- Criollo-C, S., Abad-Vásquez, D., Martic-Nieto, M., Velásquez-G, F. A., Pérez-Medina, J. L., & Luján-Mora, S. (2021). Towards a new learning experience through a mobile application with augmented reality in engineering education. *Applied Sciences*, 11(11), 4921. <https://doi.org/10.3390/app11114921>
- Iqbal, S., & Qureshi, I. A. (2012). M-learning adoption: A perspective from a developing country. *International Review of Research in Open and Distributed Learning*, 13(3), 147-164. <https://doi.org/10.19173/irrodl.v13i3.1152>
- Pereira, O. R., & Rodrigues, J. J. (2013). Survey and analysis of current mobile learning applications and technologies. *ACM Computing Surveys (CSUR)*, 46(2), 1-35. <https://doi.org/10.1145/2543581.2543594>
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425-478. <https://doi.org/10.2307/30036540>
- Wang, Y. S., Wu, M. C., & Wang, H. Y. (2009). Investigating the determinants and age and gender differences in the acceptance of mobile learning. *British Journal of Educational Technology*, 40(1), 92-118. <https://doi.org/10.1111/j.1467-8535.2007.00809.x>
- Zhou, L. L., Owusu-Marfo, J., Asante Antwi, H., Antwi, M. O., Kachie, A. D. T., & Ampon-Wireko, S. (2019). Assessment of the social influence and facilitating conditions that support nurses' adoption of hospital electronic information management systems (HEIMS) in Ghana using the unified theory of acceptance and use of technology (UTAUT) model. *BMC Medical Informatics and Decision Making*, 19(1), 1-9. <https://doi.org/10.1186/s12911-019-0956-z>

Rainwater Harvesting Systems (RWHS): The Multi-Level Perspective towards Sustainability Transition

Ingrid B. Juele*, Edward R. Lapong

Mindanao State University, General Santos City, Philippines

*Corresponding Author Email: ingridjuele@gmail.com

Dated received: June 6, 2024

Date revised: June 18, 2024

Date accepted: June 26, 2024

Originality: 92%

Grammarly Score: 99%

Similarity: 8%

Recommended citation:

Juele, I., Lapong, E. (2024). Rainwater Harvesting Systems (RWHS): the multi-level perspective towards sustainability transition. *Journal of Interdisciplinary Perspectives*, 2(8), 158-174.
<https://doi.org/10.69569/jip.2024.0268>

Abstract. Water scarcity, severe flooding, environmental concerns, and the drive for sustainability have positioned rainwater harvesting systems (RWHS) as a key element in sustainable resource management. However, overcoming adoption challenges remains crucial. This study investigates the potential of RWHS to address water scarcity and flooding in the City of Koronadal, Philippines, using Frank Geels' Multi-Level Perspective (MLP) framework and Jan Rotmans' Sustainability Transition concepts. Through surveys, interviews, and document analysis, the study examines the interplay of landscape pressures (such as climate change, water scarcity, and national laws on climate change and resource management), socio-technical and political regimes (including existing water management practices, local policies, and regulatory frameworks), and technological niches in shaping the city's water future. The findings reveal that although awareness of water scarcity and climate change is high, RWHS adoption is hindered by a lack of policy support, financial constraints, technical limitations, and institutional barriers. The study also identifies opportunities for RWHS to alleviate flooding, reduce reliance on traditional water sources, and promote sustainable water management. The research concludes by proposing a comprehensive implementation scheme for RWHS in Koronadal City. This scheme integrates policy interventions, financial incentives, technical support, and community engagement to overcome existing barriers and facilitate a transition toward a more resilient and water-secure future.

Keywords: Rainwater harvesting systems; Optimization study; Resource management; Multi-level perspective; Transition management; Sustainability transition.

1.0 Introduction

Research done by government agencies, environmental groups, and the Asian Development Bank (ADB) claimed that the Philippines within the next decades may experience a looming water crisis (Asian Development Bank, 2016; World Bank, 2019). Despite being archipelagic, the country may experience potential water scarcity for drinking, sanitation, agriculture, and industrial uses within the next ten years. Unless stronger management and conservation efforts through state policies are initiated, such as slowing the demand to match the rate at the country's water resources are replenishing, supporting and adopting technologies such as Rainwater Harvesting Systems (RWHS) to serve the needs for irrigation and domestic uses without pumping out from municipal waters that are reserved for clean drinking water can be of great relief. The National Water Resources Board (NWRB) has also highlighted the growing water stress in the country, particularly in urban areas experiencing rapid population growth and industrialization (NWRB, 2015). The situation is further exacerbated by climate change impacts, such as changing rainfall patterns and increased frequency of droughts (Lasco et al., 2018).

These findings underscore the urgency of implementing stronger water management and conservation efforts through state policies. Slowing down the demand for water to match the rate of replenishment of the country's

water resources is crucial. Moreover, supporting and adopting technologies like Rainwater Harvesting Systems (RWHS) can significantly alleviate the pressure on municipal water supplies, ensuring adequate water for irrigation and domestic uses (Imteaz et al., 2014). Thus, effective water management is crucial to ensure its availability and quality for human consumption and other essential uses.

Aligned with the urgency of achieving the UN's Sustainable Development Goals (SDGs) for Clean Water and Sanitation (SDG 6), Sustainable Cities and Communities (SDG 11), and Climate Change Actions (SDG 13), an Optimization Study of Rainwater Harvesting Systems (RWHS) was undertaken in Koronadal City. This study explores the potential for adopting sustainable water management practices to address these critical global challenges.

Frank Geels' Multi-Level Perspective (MLP) as an analytical tool was used to assess how technological niches such as RWHS can influence the socio-political regimes and eventually change the landscape of climate change and limited water resources. This framework offers a valuable lens for analyzing sociotechnical transitions and theorizes transitions as non-linear processes driven by the interplay between three analytical levels. At the niche level, radical innovations emerge and develop, often challenging the status quo of the existing system. These innovations are nurtured and protected within niche spaces that provide a supportive environment for experimentation and development.

With these issues regarding environmental resources and natural phenomena, several laws and policies have already been issued by the government to address the predicament of mitigating the changing weather patterns and the adverse effects of climate change, including the scarcity of clean drinking water resources. These laws and policies include the Republic Act 6716 (an act providing for the construction and rehabilitation of adequate potable water supply to be made conveniently available to every barangay in the country and was made obtainable last March 17, 1989), the Philippine Green Building Code, Climate Change Act of 2001 and the DILG Memorandum Circular No. 2017-76 (policies and guidelines for the construction of rainwater collectors issued last June 2017). However, have these laws and policies been adopted, implemented in localities, gained legitimation from the public, and influenced the landscape of climate change and scarcity of water resources? How can optimal system sizing be achieved when adopting a rainwater capture or harvesting system in a specific area with a given climate characteristic?

Hence, this paper determined the optimum volume of collection tanks for RWHS in households as well as its economic feasibility, answered the question of what the current efforts and factors that impede the mainstreaming and adoption of RWHS to be included as part of the day-to-day activities that involve the usage of water, searched the elements that inhibit the implementation of the above-mentioned policies and recommends for solutions in the form of policy recommendations to encourage the needed technology modifications, and significantly to manage the limited water resources, excessive flooding and combat other negative effects of a changing climate. Also, this study can guide sustainability transitions in the chosen study site. This study was conducted with the motivation to examine the role of socio-political and socio-technical regimes as the driving forces to the mainstreaming of Rainwater Harvesting Systems as a practical option for water resources management and climate change adaptation using key concepts of Transition Management and Frank Geels' Multi-Level Perspective (MLP) and further propose a policy for adopting the RWHS technology or improving current policies associated with the technology for endorsement to the Local Government Unit of the City of Koronadal.

2.0 Methodology

2.1 Research Design

This study employed mixed-methods (archival, quantitative, and qualitative) research designs to attain its main objective of shaping effective policies and strategies for mainstreaming RWHS. The optimization study to determine the viability and sustainability of RWHS is archival research. The empirical relationship method was used to determine the optimum rainwater tank capacity through statistical analyses. Rainwater collection and usage were projected based on historical data and predict system behavior under different scenarios using the collected data for rainfall, different RWHS design specifications (storage capacity and catchment area), and water usage patterns. Relationships of dependent and independent variables were then analyzed using regression.

One of the objectives of this research is to know the elements that impede the implementation of RWHS incorporation in households and buildings in a locality thus, this study carried out a Sequential Research Method Convergent parallel design, also known as concurrent mixed methods, is a research design where both qualitative and quantitative data are collected simultaneously and then analyzed separately. The results are then merged and interpreted to provide a comprehensive understanding of the research problem (Creswell & Plano Clark, 2018), and eventually develop a more thorough understanding of the factors that might influence the perceptions and willingness of the respondents in the mainstreaming of RWHS.

2.2 Research Locale

The area of study, the City of Koronadal which is composing 27 barangays, is the capital of the province of South Cotabato and the regional administrative center of Region XII. The city is a fast-developing growth center with a total land area of 277 square kilometers, a tropical rainforest climate, and a population of 195,398 according to the Philippine Statistics Authority (PSA) 2020 census. For the survey of the willingness to adopt RWHS, this study was specifically conducted in barangays with housing units within subdivisions, and commercial and industrial housing units in the City of Koronadal namely: Carpenter Hill, Concepcion, Morales, Paraiso, San Isidro, Sta. Cruz, Sto. Niño, Zone II, Zone III, and Zone IV.

2.3 Research Participants

For the archival research and document analysis, data were gathered from the concerned offices in the city government of Koronadal, including the Philippine Statistics Authority and the City of Koronadal Water District.

Key Informant Interviews (KIIs) with key players were thoroughly conducted with the City's Local Chief Executive (LCE), and committee chairs on the environment and infrastructures about their current efforts for the upgrading or advancement of existing laws and regulations for the adoption of Rainwater Harvesting Systems (RWHS). The City Architect who also functions as the Building Official, the City Engineer, and the City Environment and Natural Resources Officer were interviewed about their current efforts in implementing corresponding laws and regulations for the adoption of Rainwater Harvesting Systems (RWHS) with a discussion on what they perceive as the difficulties at their level in carrying out the rules and regulations, if any, on the implementation of rainwater harvesting in an urban setting.

For the household survey, a total of 48,209 housing units of which 22% constitutes the subdivisions and commercial/industrial housing units, according to the 2020 Philippine Statistics Authority Census obtained through the City Planning and Development Office were only considered based on the set criteria (floor area and availability of gutter system). Using Slovin's Formula with 48,209 housing units as the total population (N), 5% margin of error, and 95% confidence interval, a minimum of 397 sample size was recommended. However, due to time and budget constraints, 22% of the 397 sample sizes were surveyed, constituting 88 housing units. These 88 respondents were prorated to the ten (10) barangays with housing units within subdivisions, and commercial and industrial housing units in the study area based on the data obtained from the City Assessor's Office through the City Planning and Development Office.

2.4 Research Instrument

This study used adopted, modified, and validated guide questions and survey questionnaires as the main instruments and primary data sources to answer the research questions relating to Frank Geels' multi-level perspective and Rotmans' sustainability transition concepts. Ethical guidelines were considered in this study, and respondents' participation was voluntary. To validate the instruments and ensure that the study objectives were met, experts assessed and reviewed the interview guide and survey questionnaires. Secondly, a preliminary test involving a small number of participants was conducted to pinpoint any unclear phrasing in the guide questions for KII and questionnaire for the survey, and also to evaluate the overall clarity and thoroughness of the research tools.

In the Key Informant Interviews, the researcher adopted, modified, and underwent the validation of instruments by the experts. The interview guide used determined the key informant's awareness of the challenges of climate change, the current policy context for water resources management, perceptions of RWHS, compliance with existing laws, regulatory framework, and technological advancements.

Survey questionnaires were used for households to examine their extent of awareness about the system and their level of willingness to adopt. The questionnaires also determined what factors will influence the respondents' willingness to adopt RWHS, what kind of support or incentives would encourage them more to adopt RWHS (for reference in the formulation of policy recommendation), and demographics such as age, gender, and estimated annual income.

2.5 Data Gathering Procedure

This study used the steps shown in Figure 1 below to collect data. Approval of the Dean of the Graduate School was first secured before the researcher distributed the Request Letters to the concerned offices and the Office of the City Mayor, the researcher was then endorsed by the concerned. Next, interviews were conducted with the research participants using the interview guide questions.

For the household survey, a Permit to Conduct was received by the concerned barangay, then a consent form was initially filled up by the respondents before answering the survey questionnaires. The researcher briefly explained to the respondents how each research questionnaire was completed and immediately collected it. Lastly, the researcher assured the respondents that all their responses would be kept strictly confidential and that the study's findings would only be used for academic and educational purposes.

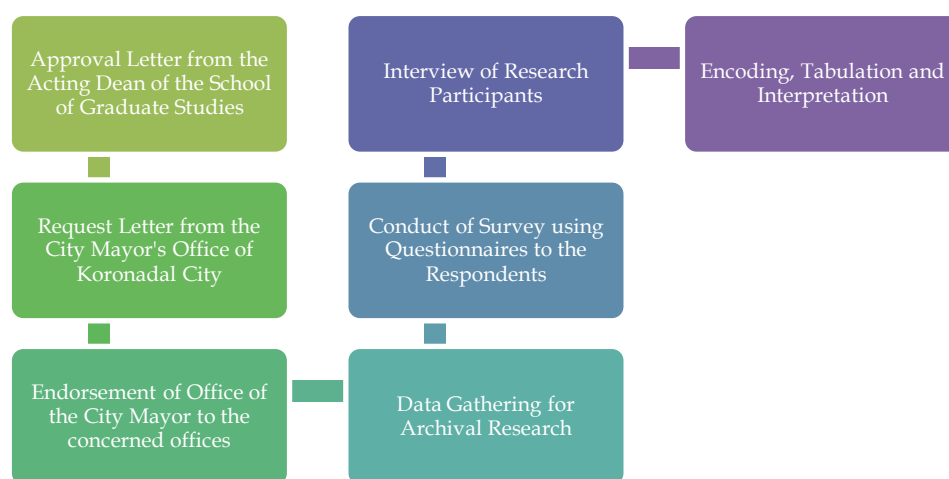


Figure 1. Data gathering procedure

2.6 Ethical Considerations

This research study followed ethical guidelines. To prevent permanent or excessive harm to the respondents of the household survey and key informant interviews, ethical considerations were observed. All participations were voluntary, participants were informed of the objectives of the study and other details related to the study before the conduct of the activities. Consent forms were attached to the first part of the questionnaires, and enumerators were trained to explain and translate questions in vernaculars if necessary. Lastly, anonymity and confidentiality of the data were observed.

3.0 Results and Discussion

3.1 Technical and Economic Factors

Determination of Optimum Rainwater Tank Capacity

Ten-year rainfall data (2014-2023) collected from the Automated Weather Station (AWS), average roof area of 64.4 square meters, and average water consumption per household were collected and analyzed using the empirical relationships method.

Table 1. Tank capacity test for efficiency

Rainfall Year	Tank Capacity, %					
	0.50 m ³	1.0 m ³	2.0m ³	3.0 m ³	4.0 m ³	5.0 m ³
2014	21.53	44.69	76.30	94.79	113.50	113.50
2015	20.30	40.27	82.41	133.10	183.53	240.94
2016	21.70	45.88	93.30	137.96	155.08	160.68
2017	23.38	46.84	92.03	105.11	105.11	105.11
2018	19.47	39.74	82.10	119.17	135.38	155.64
2019	21.65	47.55	98.67	145.35	174.23	195.02
2020	21.20	43.79	98.67	157.23	205.66	230.66
2021	26.29	59.36	134.56	219.73	295.77	373.27
2022	28.83	54.90	102.25	144.60	178.95	197.13
2013	19.11	40.06	81.94	128.49	173.52	216.51
Average	21.53	44.69	76.30	94.79	113.50	113.50

A test for efficiency by tank capacity shows that 2.00 cubic meters for storage is the most efficient (94.22%) tank size for household level in the City of Koronadal which depicts a linear relationship expressed in equation 1. The tank efficiency in collecting rainwater increases as the tank capacity increases. Efficiency of more than 100% means an excess of rainwater collected to the average water demand of the household. The percentage nearest to 100% is considered to be the most efficient.

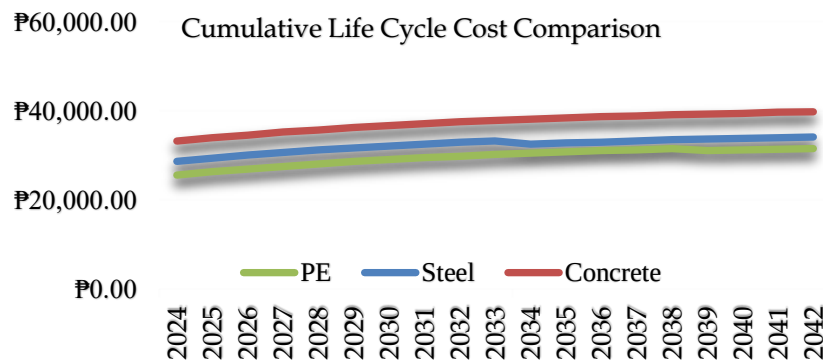
$$y = 39.926x + 8.9167$$

Eq (1)

Cost and Benefit Analysis

Table 2. Benefit-cost ratio of 2.00 cu.m capacity tank for different materials

Material	Indicator					
	Economic NPV @10%	EIRR	Payback Period	NPV of Project Benefits	NPV of Project Costs	BCR
PE	₱53,409.46	266.65%	1.02	₱199,880.12	₱166,458.67	1.20
ST Steel	₱33,949.46	59.59%	1.14	₱166,477.74	₱149,176.06	1.12
Concrete	-₱2,126.87	9.25%	1.33	₱220,566.69	₱244,750.23	0.90

**Figure 2.** Life Cycle Cost Comparison of PE, Steel, and Concrete

Based on the results of the Benefit-to-Cost Ratio and Life Cycle Cost Analysis, Polyethylene (PE) material is the most cost-effective alternative material in the long run, while concrete material is the least. Even if the initial investment for the concrete material is lower, the recurring costs over its lifespan might outweigh the initial savings on the PE and stainless steel. With the current landscape, ample benefits can be added for the economic analysis of installing RHWS in the Koronadal City setting given its location, rainfall pattern, and existing urban design. The allure around RWHS shouldn't solely focus on its economic and financial benefits- but it is essential also to highlight the positive benefits such as increased self-reliance, increased quality of living, and environmental sustainability to generate broader appeal that would add to the society's willingness to pay or the public and private institutions' willingness to invest.

3.2 Institutional Factors

Current Efforts and Difficulties in Mainstreaming RWHS in the Socio-political and Socio-Technical Regime

The collective outcome of the data gathering with key informants consists of a theme with four main branches shown in Figure 3 below: Lack of Local Policies, Implementation Challenges, Benefits and Applications of RWHS, and Proposed Solutions and Strategies.

Lack of Local Policies includes sub-themes such as the lack of local regulations, the general absence of policies, and compliance with national standards but insufficient local strategies. Connections include linking the lack of local regulations to the absence of local ordinances and the need to integrate water management policies.

Implementation Challenges cover the absence of local ordinances, lack of technical manpower, coordination and political influence, high costs and budget prioritization, social perceptions and practices, and lack of information, education, and communication (IEC). Connections include linking the absence of local ordinances to the lack of local regulations, lack of technical manpower to public relations and community engagement, high costs to financial incentives, social perceptions to community awareness, and IEC to public relations and community engagement.

Perceived Benefits and Applications of RWHS include flood reduction and runoff management, domestic and household use, irrigation and urban agriculture, and community awareness and water conservation. Connections include linking flood reduction to proposed solutions for promoting RWHS, domestic use to the need for local ordinances and regulatory requirements, irrigation to integration of water management policies, and community awareness to public relations and community engagement.

Proposed Solutions and Strategies to integrating water management policies, regulatory requirements in building permits, local ordinances for RWHS, financial incentives, and public relations and community engagement through IECs. Connections include linking integration of water management policies to the general absence of policy frameworks and irrigation, regulatory requirements to compliance with national standards and domestic use, local ordinances to the absence of local frameworks, financial incentives to high costs, and public relations and community engagement to lack of technical manpower, IEC, and community awareness.

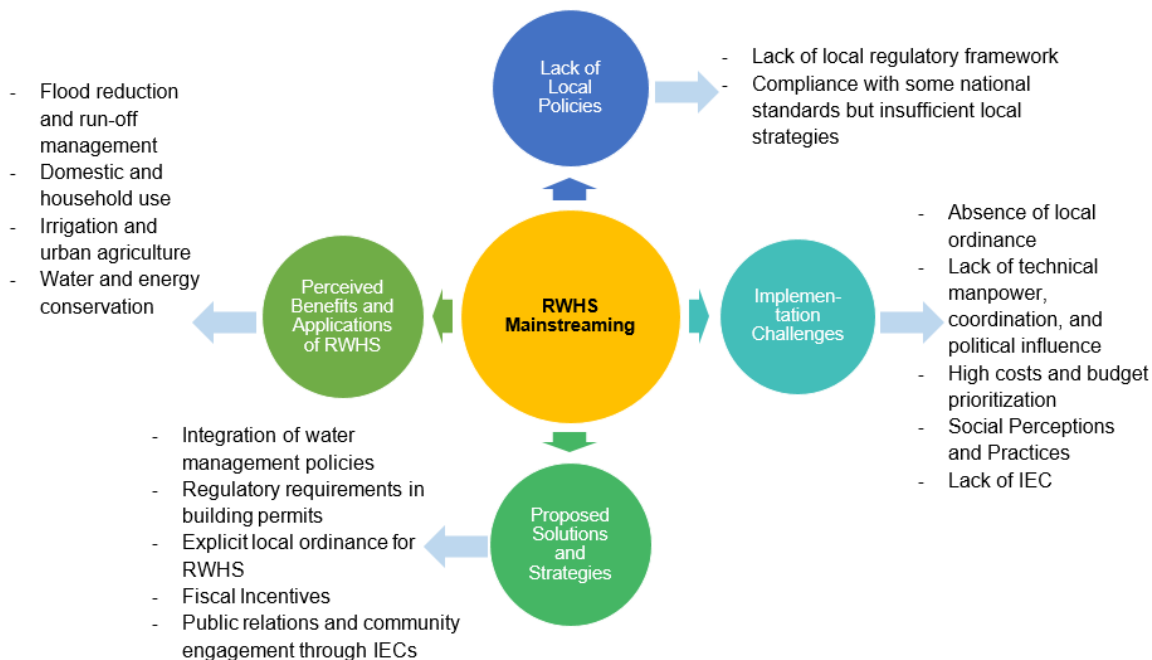


Figure 3. Central Themes for RWHS Mainstreaming in the City of Koronadal

3.3 Social Factors

Willingness to Adopt RWHS and Factors Influencing RWHS Adoption

A total of 88 respondents were surveyed to examine their level of awareness and extent of willingness to adopt RWHS. Most respondents are 31-45 years old (45.50%), and 18-30 years old (44.30%). The remaining 10.20% belongs to ages 46 and above. Respondents consist of 39 males and 49 females whose estimated income are categorized as shown in the table below. Most respondents have an estimated annual income of P150,000.00 (39.80%), followed by P150,000.00 - P300, 000.00 (31.80%). The average income level is 2.24 (on a scale of 1 to 6), with a standard deviation of 1.493. This suggests a relatively wide range of income levels among respondents.

The result shows that out of the 88 respondents, 67 (76.10%) expressed their very high willingness to adopt or install RWHS. Fourteen (14) respondents expressed a high willingness while four (4) answered neutral. Two (2) respondents had a low willingness to install, and one (1) respondent expressed a very low willingness to install. The mean value of the respondents' willingness to adopt is 4.636 which suggests that they have generally a very high willingness to install. The standard deviation is 0.776, which indicates that while most respondents are highly willing, there's still some variation in their responses

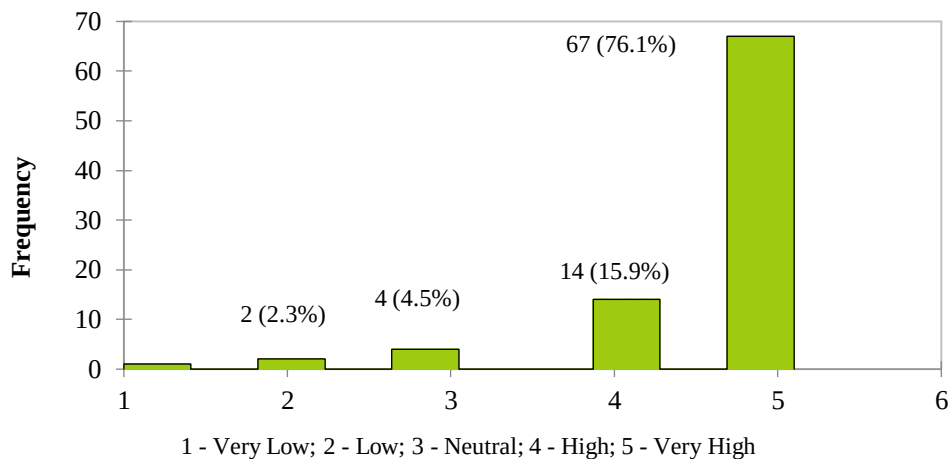


Figure 4. Willingness to install RWHS

A correlation of the respondents' willingness to adopt RWHS to their awareness of water scarcity as a pressing issue and the significance of the adverse impact of climate change, especially flooding was performed. The relationship between the variables is measured using the Spearman rank correlation since the distribution of values for these two variables is not normal. As per results using the Kolmogorov-Smirnov test with a sample size greater than 50, the exploratory part shows that the distribution is not normal, hence the use of Spearman rank correlation.

Table 3. Summary statistics of variables

Variable	n	Mean	SD	Description
Extent of water scarcity as a pressing issue	88	3.920	1.215	High
Significance of the perceived impacts of climate change on water resources	88	4.273	1.025	High
Willingness to install RWHS	88	4.636	0.776	Very High

For the variables Extent of water scarcity as a pressing issue and the Significance of the perceived impacts of climate change on water resources, a multiple R of 0.71 indicates a strong positive correlation which means that as the perception of water scarcity as a pressing issue increases, so does the perception of the significance of climate change impacts on water resources. In other words, people who strongly feel water scarcity is a problem also tend to believe climate change is significantly impacting water resources. An R² of 0.5 means that 50% of the variation in the perceived significance of climate change impacts can be explained by the extent of water scarcity. P-value

0.41 is relatively high, indicating that the observed correlation might not be statistically significant. More data may be needed to confirm this relationship.

For the variables “Extent of water scarcity as a pressing issue” and “Willingness to Install RWHS” multiple R of 0.079 indicates a very weak positive correlation. There's a slight tendency for those who perceive water scarcity as a problem to be more willing to install RWHS, but the relationship is negligible. An R^2 0.006 means that only 0.6% of the variation in willingness to install RWHS can be explained by the extent of water scarcity. The P-value of 0.000058 indicates a very low p-value which suggests that this weak correlation is statistically significant, meaning it's unlikely to be due to chance.

For the variables “Significance of the perceived impacts of climate change on water resources” and “Willingness to install RWHS”, a multiple R of 0.184 indicates a weak positive correlation. People who perceive climate change as having a significant impact on water resources are slightly more willing to install RWHS. An R^2 of 0.034 means only 3.4% of the variation in willingness to install RWHS can be explained by the perceived significance of climate change impacts. The P-value of 0.0000007 is an extremely low p-value which strongly suggests that this weak correlation is statistically significant.

Hence, the strongest relationship is between the perception of water scarcity and the perceived impact of climate change on water resources. The relationship between these perceptions and the willingness to install RWHS is weak but statistically significant, suggesting other factors may be more influential in the decision to install RWHS.

Table 4. Correlation matrix of variables

Variables Correlated	R	R_s	P-values	Extent of Relationship	Remarks
“Extent of water scarcity as a pressing issue” and “Significance of the perceived impacts of climate change on water resources”	0.710	0.50	0.41	Strong Positive	Not Significant
“Extent of water scarcity as a pressing issue” and “Willingness to Install RWHS”	0.079	0.006	5.8×10^{-5}	Weak Positive	Significant
“Significance of the perceived impacts of climate change on water resources” and “Willingness to install RWHS”	0.184	0.034	7×10^{-7}	Weak Positive	Significant

Correlation analysis was further conducted to explore the relationships between the factors affecting respondents’ decision to install or adopt RWHS, revealing patterns of association and potential multi-collinearity. Principal Component Analysis (PCA) was applied to the standardized data to reduce the dimensionality and identify underlying factors that explain the variance in the data. The number of components to retain was determined based on the scree plot and the Kaiser criterion (eigenvalues greater than 1).

The component matrix (factor loadings) was examined to identify the variables that loaded strongly onto each component and were labelled based on the common themes among the associated variables. The total variance explained by each component was assessed to determine their relative importance. The PCA results were validated by comparing them with the initial correlation analysis and the qualitative findings from the interviews. The interpretation of the components was refined based on the context of the study and the existing literature on RWHS adoption. The final PCA results revealed three distinct components that explained a significant portion of the variance in the data. These components were interpreted as the representations of environmental concerns, technical considerations, and financial aspects of RWHS adoption. The component matrix provided insights into the specific variables that loaded strongly onto each component, revealing the underlying factors influencing RWHS adoption decisions.

Table 5. Principal component analysis matrix

Variables	Component Matrix		
	1	2	3
Estimated Annual Income	-.437	-.048	-.456
Extent of water scarcity as a pressing issue in Koronadal City	.743	.366	.247
Significance of the perceived impacts of climate change on water resources	.645	.415	.444
Willingness to install RWHS	.131	.301	.235
What would be the most important factors influencing your decision to adopt RWHS? (Please rank the corresponding factor, with 1 as the most important):			
[Cost]	-.745	-.067	.380
[Ease of Installation and Maintenance]	-.737	.305	.202
[Reliability and Effectiveness of the System]	.248	.669	-.637
[Potential Water Savings and Cost Reduction]	.685	-.500	.089
[Environmental Benefits]	.796	-.312	-.214

Each column (1, 2, 3) represents a principal component. These are new, uncorrelated variables created as linear combinations of the original variables. They capture different aspects of the original data. Each row represents one of the original variables from the survey data. The numbers in each cell are the factor loadings which show the correlation between each original variable and each component. The absolute value of the factor loading tells how strongly the variable is associated with the component. Higher absolute values mean a stronger association. The sign (positive or negative) tells the direction of the relationship. A positive sign means the variable and component increase together, while a negative sign means the variable increases as the component decreases.

Table 6. Interpretation of component matrix using principal component analysis

Component	Key Variables (High Loadings)	Interpretation	Target Audience for RWHS Promotion
1	Extent of water scarcity, Climate change impact, Potential savings, Environmental benefits (all positive); Cost, Ease of installation (both negative)	Concerned about water scarcity and environmental impact; Less concerned about cost and maintenance.	Emphasize the environmental and long-term financial benefits of RWHS.
2	Reliability and effectiveness (positive); Potential savings (negative)	Prioritize system reliability and effectiveness over cost savings; Maybe more receptive to technical information and demonstrations of RWHS performance.	Highlight the technical aspects and proven reliability of RWHS.
3	Cost (positive); Reliability and effectiveness, Environmental benefits (both negative)	Primarily concerned about cost; May be willing to compromise on system performance and environmental impact for affordability.	Focus on affordability, low-cost options, and potential long-term savings.

The factors influencing the decision of the respondents to adopt RWHS are multifaceted including environmental concerns, technical considerations, and financial aspects. Different individuals prioritize these factors differently, leading to the distinct components identified in the analysis.

To promote RWHS adoption, strategies should be tailored to address the concerns of each group categorized by each component: (1) Environmentalists: Emphasize environmental benefits and long-term cost savings; (2) Rationalists: Highlight the system's reliability and ease of use; and (3) Budget-conscious: Focus on affordability and potential cost reductions.

“Willingness to Install RWHS” doesn't weigh strongly on any specific component, suggesting that it is influenced by a complex mix of factors thus this variable requires further investigation to understand its drivers more fully.

“Estimated Annual Income” also doesn't load strongly, indicating that income level alone might not be a major predictor of RWHS adoption attitudes in this particular dataset.

Thus, while the respondents' willingness to adopt RWHS is high, the decision to install rainwater harvesting systems (RWHS) is complex and not solely driven by income or the perceived urgency of water scarcity and climate change. While these landscape-level pressures exist, they haven't been strong enough to overcome the barriers to adoption, which include a lack of awareness, high costs, installation complexity, water quality concerns, regulatory hurdles, limited government support, resource constraints, and infrastructure limitations such as space.

3.4 Summary

This study reveals that for technical and economic factors, a volume of two (2) cubic meters for storing rainwater is the optimum for household level with an average roofing area of 64.4 square meters. Using polyethylene as a tank material is the most viable compared to stainless steel and concrete materials. Performing the cost and benefit analysis based on the design considerations and assumptions used for this study, indicators used show that the financial costs of implementing RWHS can outweigh the monetary benefits that could be derived from it. This means that from a purely financial perspective, the investment in RWHS may not be justified. Nonetheless, the allure around RWHS shouldn't solely focus on its economic and financial benefits but it is essential also to highlight the positive benefits such as increased self-reliance, increased quality of living, and environmental sustainability to generate broader appeal that would add to the society's willingness to pay or the public and private institutions' willingness to invest. Ward et al. (2015) found that while financial incentives are important, non-monetary benefits like environmental consciousness and water security also play a significant role in RWHS adoption decisions, while Ghofrani et al. (2013) in their overview of RWHS technologies, highlight the broader environmental benefits of RWHS, including reduced stormwater runoff and improved groundwater recharge.

The research findings indicate that the adoption of Rainwater Harvesting Systems (RWHS) in Koronadal City is influenced by a complex interplay of factors. While there's awareness of water scarcity and climate change impacts, the willingness to install RWHS isn't strongly correlated with these concerns. The survey results, as well as response from the key players, reveal a weak positive correlation between the perception of water scarcity as a pressing issue and the significance of the perceived impacts of climate change to their willingness to install RWHS, suggesting that those experiencing the effects of water scarcity and climate change might be less inclined towards RWHS.

Furthermore, a factor analysis reveals significant differences in how respondents rank factors influencing RWHS adoption, with cost and ease of installation, financial benefits, and environmental concerns emerging as top priorities. However, technical complexities and space requirements are perceived as barriers. Research by Ghofrani et al. (2013) shows that potential financial benefits, such as reduced water bills and savings on irrigation costs, are significant motivators for RWHS adoption, aligning with the study's finding of financial benefits as a top priority for some respondents, and Imteaz et al. (2014) identified technical complexities and lack of space as common barriers to RWHS adoption in developing countries.

These findings emphasize the need for a multifaceted approach to promote RWHS in Koronadal City. While raising awareness about perceived water scarcity and the adverse effects of climate change is important, it's not enough to drive widespread adoption. Addressing financial barriers through government support, simplifying system design and installation, and building trust through transparency and community engagement are essential strategies. Campisano et al. (2017) demonstrate the importance of tailoring RWHS design to local climate and urban conditions, as suggested in the result of this study utilizing the City of Koronadal's specific location, rainfall pattern, and urban design.

The study's limitations, such as the small sample size and potential biases in reported data, call for further research with a larger and more diverse sample. Additionally, investigating the reasons behind the weak positive correlation between water scarcity, the significance of perceived impacts of climate change, and respondents' willingness to install could provide valuable insights for targeted interventions.

This research provides valuable insights into the factors influencing RWHS adoption in Koronadal City. The results suggest that a comprehensive approach addressing financial, technical, and institutional barriers is crucial for promoting widespread adoption and ensuring sustainable water management in the city.

4.0 Conclusion

4.1 The Multi-Level Perspective and Sustainability Transition

One of the purposes of this paper is to examine how crises and niche innovations can lead to systematic change. Since transition management is a multilevel model of governance that shapes processes of co-evolution using visions, transition experiments, and cycles of learning and adaptation, this research could help policy-makers and society, in general, to transform themselves in a gradual, spontaneous way through guided processes of variation and selection, for further change towards sustainability transition (Rotmans, 2003). Transition management has rapidly emerged in developed countries as a new approach to dealing with complex societal problems and governance in the context of these problems. In the Netherlands, UK, and Belgium for example, serious efforts have been and are being undertaken to develop transition policies in areas such as energy, building, mobility, and water management as the result of a much broader scientific development of transition research as an interdisciplinary field of study in which innovation studies, history, ecology, and modeling are combined with sociology, political and governance studies and even psychology. Because of the focus on integrated sustainability problems and the applied nature of transition research, the natural interaction between science and policy has led to a continuous co-evolving theory and practice of transition management. (Loorbach et.al. 2006). Figures 4 and 5 below show the Multi-Level Perspective of RWHS Mainstreaming in Koronadal City's Setting relating to Geels' MLP Framework and Rotmans' Sustainability Transition Concept based on the examined socio-political and socio-technical contexts.

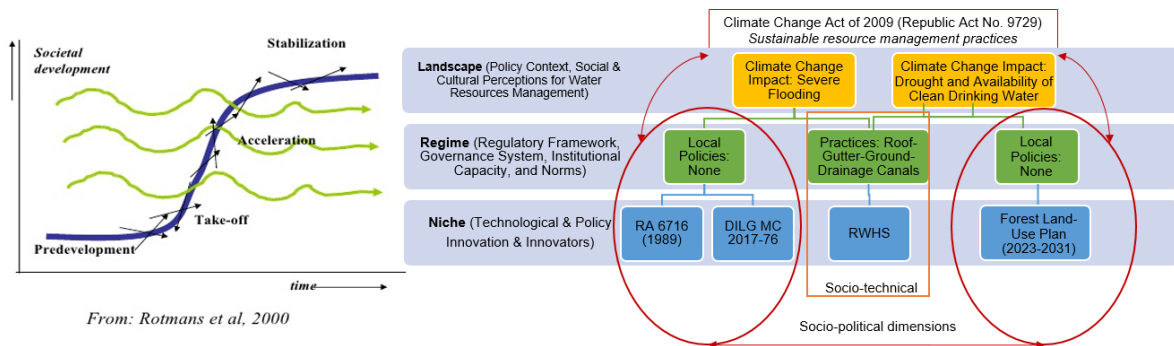


Figure 5. Multi-Level Perspective of RWHS Mainstreaming in Koronadal City's Setting relating to Geels' MLP Framework

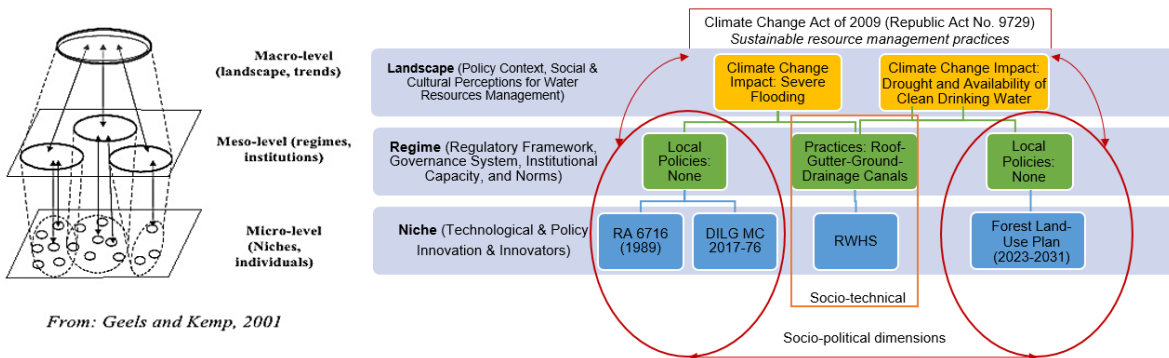


Figure 6. Multi-Level Perspective of RWHS Mainstreaming in Koronadal City's Setting relating to Rotmans' Sustainability Transition Concept

In the context of the City of Koronadal, results of the survey in households living in subdivisions, institutional, commercial, and other multi-functional establishments as well as the result of the key informant interview with city officials show that pressures from the current landscapes of water scarcity and significance of the adverse effects of climate change are acknowledged, but are not enough to break the existing regime of not collecting rainwater but rather letting it go directly to the ground. Even the effort from the national level through the MCs and JMCs providing policies and guidelines to the LGUs on the construction of RWHS did not gain legitimation and break the existing practices. As this paper examines what hinders the mainstreaming of the RWHS, several factors were identified and discussed in the previous chapter.

Relating the results to Rotman's Sustainability Transition Concept, RWHS is a technological niche that has been pre-developed but not appreciated enough for it to take off, further accelerate, and stabilize as part of the existing regime and improve the current landscape even with the issuances of MCs and JMCs which in that case also can be considered as a socio-political niche.

One key informant highlighted that the pressures are not enough to transition to mainstreaming RWHS as a form of water resources management initiative, while the others acknowledged the need to mainstream yet have technical and economic boundaries in doing so.

4.2 Factors Influencing the Breakthrough of RWHS

Breakthroughs happen at all levels in the MLP, but it is the landscape or the niche that usually puts pressure on the existing regimes (Kemp, 2011). This paper investigated the key factors that can significantly influence the breakthrough and widespread adoption of RWHS. How environmental conditions, economic considerations, policy frameworks, social acceptance, and technological advancements can all play a crucial role in paving the way for a more sustainable water future and resilient economy through RWHS implementation were explored.

4.2.1 Social and Community Factors

Public awareness not just about the features of RWHS but also how it can improve the quality of life of the public while ensuring equitable access to RWHS benefits for all is essential for long-term sustainability. The analysis done in the previous chapter reveals a complex interplay of factors influencing the adoption of rainwater harvesting systems (RWHS) in Koronadal City. Despite the acknowledged environmental benefits of RWHS, cost emerges as the most influential factor in the decision-making process. This suggests a potential division between environmental awareness and financial considerations, highlighting the need for targeted interventions that address both aspects. In this case, among the possible support and interventions presented, free storage tanks from the government were mostly preferred by the respondents.

The landscape pressures of water scarcity and climate change are acknowledged, yet they are not sufficient to overcome the practical and financial barriers to RWHS adoption. A multi-faceted approach in the form of a policy mix that would address these barriers, promote awareness, and provide support and intervention is crucial to fostering a shift towards wider acceptance and implementation of RWHS in Koronadal City.

4.2.2 Technological Advancements

The optimization study of Rainwater Harvesting Systems (RWHS) in Koronadal City focused on specific technical factors: climate and rainfall patterns, roof area, and storage capacity. While water quality is a crucial aspect of RWHS, it was not included in this study as it focused on rainwater reuse for domestic and irrigation purposes, excluding potable use. However, the integration of a first flush system for initial filtration was considered to enhance water quality for non-potable applications. The findings of the optimization study revealed that for an average roof area of 64.4 square meters of a household, a 2 cubic meters capacity storage tank is the most efficient based on the 10-year rainfall data collected while sixty (60) cubic meters for the Public Market of the City of Koronadal.

The study examined local regulations and building codes relevant to RWHS installations in Koronadal City. Interviews with city officials (City Engineer and City Architect) revealed that no specific policies have been established beyond those outlined in the Philippine Green Building Code. This highlights a potential area for

future policy development and technology advancements to further promote and regulate RWHS implementation in the city.

Furthermore, the Technological Innovation System (TIS) framework could be explored for future study to analyze and understand socio-technical transitions, such as the adoption of rainwater harvesting systems (RWHS) in Koronadal City as a complementary tool to the MLP framework. The TIS framework focuses on the micro-level dynamics of innovation, examining the interactions between various actors (individuals, organizations, and institutions), the knowledge base, networks, and infrastructure that support the development and diffusion of a specific technology. In the case of RWHS, the TIS framework would analyze the roles of homeowners, businesses, government agencies, researchers, and manufacturers in promoting or hindering RWHS adoption. It would also consider the availability of technical knowledge, financial resources, and supportive infrastructure. (Markard, 2015).

4.2.3 Economic and Financial Considerations

The economic viability of Rainwater Harvesting Systems (RWHS) in Koronadal City is sensitive to various factors. While the use of surplus materials and lower-quality cement could potentially reduce initial costs, a comprehensive sensitivity analysis is crucial to assess the impact on the overall benefit-cost ratio (BCR). Adhering to the national standard discount rate of 10% ensures consistency and comparability with other projects.

The Life Cycle Cost (LCC) analysis reveals that polyethylene (PE) is the most cost-effective material for RWHS in the long run, despite concrete having a lower initial cost. This underscores the importance of considering long-term costs in decision-making.

The inclusion of additional benefits, such as savings from home gardening using collected rainwater, limited damages to flora and fauna caused by soil erosion and siltation, and the cost of damages to lives and properties caused by severe flooding and drought can further enhance the economic attractiveness of RWHS. However, it's important to also acknowledge the challenges in quantifying intangible benefits like reduced stress and improved quality of life due to decreased flooding. Emphasizing these diverse benefits, the appeal of RWHS extends beyond its economic value, fostering greater willingness from individuals and institutions to adopt and invest in sustainable water management solutions.

4.2.4 Environmental and Resource Scarcity

Rainwater Harvesting Systems (RWHS) can present a multitude of environmental advantages. It can lighten pressure on existing water resources, contributing to improved water quality and ecosystem conservation. By reducing reliance on municipal water supplies, RWHS can indirectly help maintain water tables and protect sensitive ecosystems like the Bolok Creek.

Also, RWHS offers a practical solution to address the city's primary concern of flooding during pronounced wet seasons, exacerbated by climate change. The current drainage system, despite expansion and dredging efforts, struggles to handle excessive stormwater, particularly in the economically vital city center, hence RWHS can play a crucial role in stormwater management by capturing excess rainwater thereby mitigating flooding risks and protecting economic activities. With these environmental benefits, RWHS presents a sustainable and environmentally beneficial approach to address Koronadal City's water-related challenges.

4.2.5 Policy and Regulatory Framework

The current policy landscape in Koronadal City lacks a specific framework for promoting rainwater harvesting systems (RWHS) as a strategy for water resource management and climate change adaptation. While a proposed ordinance addressing septic waste management indirectly touches upon rainwater collection, it primarily focuses on separating wastewater from rainwater rather than promoting RWHS for its various benefits. However, the potential of RWHS to mitigate flooding and alleviate pressure on the drainage system, particularly the Bolok Creek, has been recognized. This presents an opportunity to incorporate provisions for rainwater storage and controlled release into the proposed ordinance. This would not only address the existing policy gap but also provide a practical solution to the city's flooding problem, contributing to its overall resilience to climate change impacts.

On the landscape level, the 35 years old law for Rainwater Catchment needs to be amended and jive with the existing laws that could relate to sustainable resources management and fulfill the constitutional right of every Filipino for a healthy and balanced ecology enshrined in Article II, Section 16, of the Philippine Constitution which states that the State shall protect and advance the right of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature.

Considering also the DILG MC No. 2017-76, the Local Government Unit of the City of Koronadal, or any LGU that lacks a specific policy framework for RWHS adoption, can be susceptible to administrative, civil, and/or criminal penalties.

4.3 Current Efforts and Difficulties in Mainstreaming RWHS

Key informants in Koronadal City recognize the pressures from climate change, particularly regarding severe flooding and rising temperatures. However, the lack of a policy framework specifically addressing water resource management and climate change adaptation, including RWHS mainstreaming, has hindered its widespread adoption. The absence of a supportive local policy and regulatory framework for RWHS, in line with the DILG memorandum and joint circulars, contributes to several difficulties in mainstreaming the technology. Limited social perception, lack of technical capacity and coordination, resource constraints, and shifting priorities among key players due to administrative changes are among the barriers identified. These challenges fall into the categories of social factors, economic considerations, and technical and institutional challenges.

To overcome these hurdles, a comprehensive policy framework that specifically addresses RWHS adoption is crucial. This framework should raise awareness about the benefits of RWHS, provide technical guidance and support, and incentivize adoption through financial mechanisms.

4.4 Roadmap for Sustainability Transition of Koronadal City through RWHS Implementation

Rainwater harvesting is a time-tested practice with modern technological advancements and offers a decentralized and sustainable approach to water resource management (Domenech & Sauri, 2011). As mentioned in the previous chapters, capturing and utilizing rainwater can reduce pressure on municipal waters and mitigate the adverse impacts of flooding. Moreover, it presents an opportunity to promote community resilience and enhance environmental sustainability.

This roadmap outlines a strategic pathway for the City of Koronadal to transition towards a more sustainable water future through the widespread adoption of RWHS, somewhat considering a framework complimentary to the MLP- the Technological Innovation System (TIS) framework adopted from S. Jacobsson and A. Johnson, “The diffusion of renewable energy technology: an analytical framework and key issues for research” (2000).

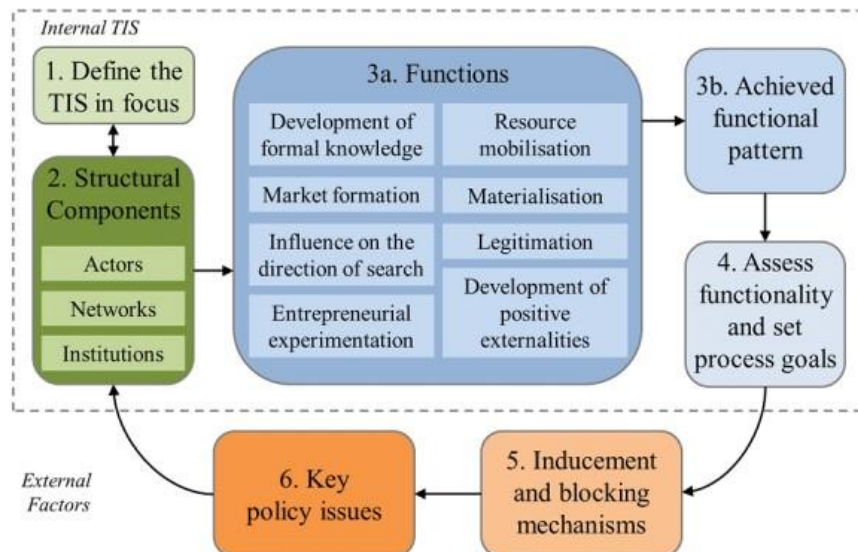


Figure 7. TIS framework adopted from Jacobsson, et.al., 2000

4.4.1 Phase 1: Awareness and Capacity Building (Year 1-2)

Launch comprehensive awareness campaigns targeting households, businesses, schools, and government institutions. Focus on the financial benefits of RWHS, such as reduced water bills and potential income generation through gardening and agriculture.

Conduct workshops, seminars, and training sessions for specific groups, such as homeowners, building professionals, and local government officials, focusing on the technical aspects of RWHS design, installation, maintenance, and water quality management (Ghofrani et al., 2013).

Campaign launching could utilize various media channels (radio, television, and social media) and community events to educate residents and businesses about the benefits of RWHS, its potential for flood mitigation, and its contribution to sustainable water management. (Ward et al., 2015)

Establish pilot RWHS projects in different settings (e.g., residential, commercial, institutional) to showcase the technology's effectiveness and address concerns about feasibility and maintenance. Encourage also the participation of private entities and non-government organizations in conducting campaigns, conducting feasibility studies, and even funding pilot sites.

4.4.2. Phase 2: Policy and Infrastructure Development (Year 3-5)

Develop and implement a comprehensive policy framework for RWHS, incorporating incentives, building code regulations, and water quality standards. This can be done through new local ordinances or by integrating RWHS into existing environmental and water management policies. (Domenech & Sauri, 2011)

Assess and upgrade existing drainage infrastructure to accommodate increased rainwater flow from RWHS and to mitigate flood risks, including expansion of drainage channels, improvement of retention ponds, and construction of green infrastructure. (Campisano et al., 2017)

Establish a network of trained professionals and technicians to provide support for RWHS installation, maintenance, and repairs involving partnerships with local businesses and educational institutions. (Senanayake et al., 2016)

Encourage design innovations from educational institutions, groups of inventors and designers, and technical professionals to come up with designs that are most viable in every unique setting.

4.4.3 Phase 3: Scaling Up and Mainstreaming (Year 6 onwards)

Explore the feasibility of making RWHS installation mandatory for new buildings or major renovations, particularly for large commercial and institutional structures as it can significantly increase RWHS adoption and contribute to city-wide water management goals. (Fewkes, 2006)

Encourage the formation of community-based organizations to promote and manage RWHS at the neighborhood or barangay level, and empower residents to ensure the long-term sustainability of RWHS initiatives. (Imteaz et al., 2014)

Implement a robust monitoring and evaluation system to track the performance and impact of RWHS across the city to provide valuable data for future policy adjustments and program improvements.

4.5 Summary

In Koronadal City's context of transitioning into a more sustainable water resources management and climate change adaptation for its constituents, the adoption of Rainwater Harvesting Systems (RWHS) faces challenges such as a lack of policy frameworks, limited awareness, financial constraints, and institutional barriers, despite the recognized potential of RWHS to address water scarcity and flooding. To overcome these challenges and promote RWHS adoption, a multifaceted approach is recommended.

The development of a comprehensive and integrated policy mix, combining regulatory measures, financial incentives, and informational strategies can create a supportive environment for RWHS adoption in Koronadal

City. Awareness campaigns and educational programs to inform various stakeholders about the benefits and functionality of RWHS can be targeted. Collaboration between relevant institutions and the developing technical expertise among professionals must be strengthened. Community engagement to build trust and to ensure the long-term sustainability of RWHS should also be prioritized. Securing long-term commitment by the key players in addressing social equity in RWHS implementation is also important. To attain a just transition towards a more sustainable society, policymakers must indulge in data-driven decision-making.

Summarizing and considering all the findings of this study, a policy recommendation in the form of a local ordinance with implementing rules and regulations is crafted for the area of study subject for their further studies and considerations.

5.0 Contributions of Authors

The authors confirm the equal contribution in each part of this work. All authors reviewed and approved the final version of this work.

6.0 Funding

This work received no specific grant from any funding agency.

7.0 Conflict of Interests

All authors declare that they have no conflicts of interest.

8.0 Acknowledgment

The researcher extends her deepest gratitude to her research adviser, Dr. Edward R. Lapong, together with the panel members, Dr. Alfie Maria R. Custodio and Dr. Inoray D. Osop, for their support, encouragement, insightful feedback, and tireless dedication throughout this research journey, and to Atty. Elpidio V. Peria for instilling the essence of sustainability transition concepts into a constantly changing world. Genuine gratitude is also extended to the City Government of Koronadal, particularly the City Environment and Natural Resources Office (CENRO), the City Engineering Office, the City Planning and Development Office, the City Agriculturist's Office, and the City Architect's Office, citing also Philippine Statistics Authority of South Cotabato and the Koronadal Water District. Your willingness to share your expertise, knowledge, and data was instrumental in understanding the technical, economic, and institutional context of RWHS mainstreaming in the city. The researcher is also grateful to the city residents who participated in the surveys and interviews. Heartfelt appreciation is also given to the researcher's family and friends for their unwavering support and encouragement throughout this journey. Ultimately, the researcher expresses her great appreciation to the Almighty for the guidance, provision, and above all His grace in bringing this study to completion.

9.0 References

- Asian Development Bank. (2016). Asian water development outlook 2016: Strengthening water security in Asia and the Pacific. Mandaluyong City, Philippines: Asian Development Bank.
- Bañas, K., Robles, M. E., & Maniquiz-Redillas, M. (2023). Stormwater harvesting from roof catchments: A review of design, efficiency, and sustainability. *Water*, 15(9), 1774. <https://doi.org/10.3390/w15091774>
- Creswell, J. W., & Plano Clark, V. L. (2018). Designing and conducting mixed methods research (3rd ed.). SAGE Publications.
- Contreras, S. M., Sandoval, T. S., & Tejada, S. Q. (2013). Rainwater harvesting, its prospects and challenges in the uplands of Talugtog, Nueva Ecija, Philippines. *International Soil and Water Conservation Research*, 1(3), 30-38. [https://doi.org/10.1016/S2095-6339\(15\)30031-9](https://doi.org/10.1016/S2095-6339(15)30031-9)
- de Sá Silva, A. C. R., Bimbato, A. M., Bolestieri, J. A. P., & Vilanova, M. R. N. (2022). Exploring environmental, economic and social aspects of rainwater harvesting systems: A review. *Sustainable Cities and Society*, 76, 103475. <https://doi.org/10.1016/j.scs.2021.103475>
- DILG MC No. 2017-76, Policies and Guidelines on the Construction of Rainwater Collectors, 14 June 2017.
- Domenech, L., & Sauri, D. (2011). Rainwater harvesting in Mexico City: Social and technical challenges and the role of governance. *Water Alternatives*, 4(1), 74-91.
- Environmental Protection Agency. (2023). <https://www.epa.gov/green-infrastructure/manage-flood-risk>
- Fewkes, A. (2006). Rainwater harvesting in the UK: Socio-technical theory and practice. *Technological Forecasting and Social Change*, 92, 246-257. <https://doi.org/10.1016/j.techfore.2012.04.001>
- Geels, F. W. (2002). Technological transitions as evolutionary reconfiguration processes: A multi-level perspective and a case-study. *Research Policy*, 31(8-9), 1257-1274. [https://doi.org/10.1016/S0048-7333\(02\)00062-8](https://doi.org/10.1016/S0048-7333(02)00062-8)
- Ghisi, E., & Ferreira, D. F. (2007). Potential for potable water savings by using rainwater and greywater in a multi-storey residential building in Southern Brazil. *Building and Environment*, 42(7), 2512-2522. <https://doi.org/10.1016/j.buildenv.2006.07.019>
- Ghofrani, Z., Sposito, G., & Faria, J. L. (2017). Rainwater harvesting, conservation, and reuse: An overview of technologies and implementation examples. *International Journal of Environmental Studies*, 70(3), 319-337. <https://doi.org/10.1080/00207233.2013.793299>
- Global Water Partnership. (2000). Integrated water resources management. GWP TEC Background Papers No. 4. Stockholm: Global Water Partnership.
- Gurung, T. R., Sharma, A., & Shivanita, U. (2012). Economics of scale analysis of communal rainwater tanks. *Urban Water Security Research Alliance*.
- Hazra, S. (2022). Investigating household-level determinants to adopt rainwater harvesting in arsenic-affected rural Bengal. *Journal of Environmental Management*, 306, 114454. <https://doi.org/10.1007/s40899-024-01104-4>

- Imteaz, M. A., Sattar, M. A., & Abdullah, A. M. (2014). Rainwater harvesting in developing countries: A review of the current situation and future prospects. *Journal of Water, Sanitation and Hygiene for Development*, 4(4), 568-580. <http://dx.doi.org/10.3844/ajeassp.2010.73.82>
- Intergovernmental Panel on Climate Change. (2013). *Climate change 2013: The physical science basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*.
- Jacobsson, S., & Johnson, A. (2000). The diffusion of renewable energy technology: An analytical framework and key issues for research. *Energy Policy*, 28(9), 625-640. [https://doi.org/10.1016/S0301-4215\(00\)00041-0](https://doi.org/10.1016/S0301-4215(00)00041-0)
- Jeyakrishnan, V., & Umashankar, K. (2015). Factors affecting consumers' willingness to join (WTJ) and willingness to pay (WTP) for rainwater harvesting system (RWHS) for household needs: A case study in the northern part of Sri Lanka. *Urban Water Journal*.
- Kemp, R., Loorbach, D., & Rotmans, J. (2007). Transition management as a model for managing processes of co-evolution towards sustainable development. *The International Journal of Sustainable Development & World Ecology*, 14(1), 78-91. <https://doi.org/10.1080/13504500709469709>
- Kemp, R., Avelino, F., & Bressers, N. (2011). Transition management as a model for sustainable mobility. *European Transport/Trasporti Europei*, 47(47), 26-46. <https://doi.org/10.1080/13504500709469709>
- Kolavani, N. J., & Kolavani, N. J. (2020). Technical feasibility analysis of rainwater harvesting system implementation for domestic use. *Sustainable Cities and Society*, 62, 102340. <https://doi.org/10.1016/j.scs.2020.102340>
- Lapong, E. R., & Marquez, D. D. (2017). Optimization study for rainfall harvesting and assessment of rainwater quality in Koronadal City. *Environmental Science and Pollution Research*, 27, 1019-1029.
- Lasco, R. D., Pulhin, J. M., & Cruz, N. A. (2018). Climate change and the Philippines: Impacts, vulnerabilities, and adaptation. In *Climate change and the water crisis* (pp. 215-238). Routledge.
- Loorbach, D., Rotmans, J., & Kemp, R. (2016). Complexity and transition management. In *Complexity and planning* (pp. 177-198). Routledge.
- Lumbera, M. P., Cruz, M. L. F., & Junio, J. M. (2023, July). Issues, challenges, and strategies for the implementation of roof-based rainwater harvesting systems in the Philippines. In *AIP Conference Proceedings* (Vol. 2785, No. 1). AIP Publishing. <https://doi.org/10.1063/5.0147972>
- Markard, J., Hekkert, M., & Jacobsson, S. (2015). The technological innovation systems framework: Response to six criticisms. *Environmental Innovation and Societal Transitions*, 16, 76-90. <https://doi.org/10.1016/j.eist.2015.07.006>
- Markard, J., Raven, R., & Truffer, B. (2012). Sustainability transitions: An emerging field of research and its prospects. *Research Policy*, 41(6), 955-967. <https://doi.org/10.1016/j.respol.2012.02.013>
- Matson, P. (2009). The sustainability transition. *Annual Review of Environment and Resources*, 34, 1-9. <https://doi.org/10.1146/annurev.enviro.021908.132843>
- National Water Resources Board. (2015). *Philippine water supply and sanitation master plan*. Quezon City, Philippines: National Water Resources Board.
- Njepu, A., Zhang, L., & Xia, X. (2019). Optimal tank sizing and operation of energy-water supply systems in residences. *Energy Procedia*, 159, 352-357. <https://doi.org/10.1016/j.egypro.2019.01.003>
- Perera, W. A. K., & Magana-Arachchi, D. N. (2022). Microbial diversity in rainwater with correspondence to particulate matter and environmental factors. *Journal of Sustainability and Environmental Management*, 1(4), 410-418.
- Rotmans, J., Kemp, R., & van Asselt, M. (2003). *Transition management: Key to a sustainable society*. Assen: Koninklijke Van Gorcum.
- Semaan, M., Day, S. D., Garvin, M., Ramakrishnan, N., & Pearce, A. (2020). Optimal sizing of rainwater harvesting systems for domestic water usages: A systematic literature review. *Resources, Conservation & Recycling: X*, 6, 100033. <https://doi.org/10.1016/j.rcrx.2020.100033>
- Senanayake, I. P., Weerasekara, R. W., & Jayasinghe, S. (2016). Rainwater harvesting for domestic water supply in Sri Lanka: A review of current practices and future directions. *Water*, 8(4), 120. <https://doi.org/10.3390/w8040120>
- Smith, A., Voß, J. P., & Grin, J. (2010). Innovation studies and sustainability transitions: The allure of the multi-level perspective and its challenges. *Research Policy*, 39(4), 435-448. <https://doi.org/10.1016/j.respol.2010.01.023>
- The Nature Conservancy. (2023). <https://www.nature.org/en-us/what-we-do/our-priorities/protect-water-and-land/land-and-water-stories/lands-that-our-supporters-helped-protect-forever/>
- UNESCO World Water Assessment Programme. (2020). <https://www.unesco.org/en/rainwater-quality-monitoring>
- Vieira, A. S., Beal, C. D., Ghisi, E., & Stewart, R. A. (2014). Energy intensity of rainwater harvesting systems: A review. *Renewable and Sustainable Energy Reviews*, 34, 225-242. <https://doi.org/10.1016/j.rser.2014.03.012>
- Ward, S., Butler, D., & Memon, F. A. (2015). Rainwater harvesting in the UK: Socio-technical theory and practice. *Technological Forecasting and Social Change*, 92, 246-257. <https://doi.org/10.1016/j.techfore.2012.04.001>
- Wanjiru, E. M., & Xia, X. (2015). Energy-water optimization model incorporating rooftop water harvesting for lawn irrigation. *Applied Energy*, 160, 521-531. <https://doi.org/10.1016/j.apenergy.2015.09.083>
- World Bank. (2019). *Philippines water supply and sanitation review: Turning finance into services for 20 million Filipinos*. World Bank Publications.
- Zhou, W., Matsumoto, K., & Sawaki, M. (2023). Traditional domestic rainwater harvesting systems: Classification, sustainability challenges, and future perspectives. *Journal of Asian Architecture and Building Engineering*, 22(2), 576-588. <https://doi.org/10.1080/13467581.2022.2047979>

Environmentally Conscious Tourism: Lessons from the Successful Rehabilitation of Boracay Island

Chriszela R. Sabandal*, Gynnyn G. Gumban

School of Graduate Studies, Central Philippine University, Iloilo City, Philippines

*Corresponding Author Email: sabandal.chriszela@asu.edu.ph

Dated received: June 10, 2024

Date revised: June 19, 2024

Date accepted: June 26, 2024

Originality: 96%

Grammarly Score: 99%

Similarity: 4%

Recommended citation:

Sabandal, C., Gumban, G. (2024). Environmentally conscious tourism: lessons from the successful rehabilitation of Boracay Island. *Journal of Interdisciplinary Perspectives*, 2(8), 175-188. <https://doi.org/10.69569/jip.2024.0275>

Abstract. This study aimed to explore the lessons learned from the successful rehabilitation of Boracay Island. The Boracay rehabilitation is a significant government intervention designed to address the environmental challenges posed by tourism. The study focuses on understanding the community's perspective on environmentally-conscious tourism, evaluating the effectiveness of Boracay's rehabilitation strategies, and assessing the overall outcomes of the rehabilitation efforts. Employing a qualitative design through a case study method, information was gathered from twelve participants who were purposively chosen based on their direct involvement, expertise, experience, and roles in the Boracay rehabilitation. Through thematic analysis, key themes were identified that contributed to the understanding of environmentally-conscious tourism and rehabilitation strategies on the island. The findings reveal a positive behavioral change among participants toward environmental consciousness and practices due to their experiences with the Boracay rehabilitation. Strict regulatory measures and collaborative efforts among government entities, businesses, and residents have driven this behavioral shift. The study also found that effective rehabilitation strategies have led to environmental restoration, infrastructure improvement, and heightened community awareness and compliance with environmental regulations. Crucial strategies for achieving environmental success through the Boracay rehabilitation program include infrastructure investments, strict regulatory measures, and stakeholder collaboration. Despite initial economic hardships and concerns about governance, unfinished projects, and the sustainability of community compliance, the study concludes that the Boracay rehabilitation has successfully enhanced the island's environmental health, improved quality of life, and increased its attractiveness as a tourist destination. The study underscores the importance of continued collaboration among stakeholders to sustain the positive outcomes of the rehabilitation program, coupled with effective governance, adaptive policies, and strengthened education and awareness campaigns on Boracay Island.

Keywords: Boracay Island rehabilitation; Environmentally-conscious tourism; Sustainable tourism; Thematic analysis.

1.0 Introduction

Environmentally-conscious tourism is an emerging policy trend and movement in various countries today (Koh & Fakfare, 2020; WTO, 2005, 2019). However, a survey of existing literature found that there is an existing gap between policies and practices in tourism resource management implementation, such as lax policy implementation, weak governance, and low awareness among stakeholders (Chauhan, 2007; Maming et al., 2021; Nunkoo, 2017; Oleniewicz et al., 2020; Özgüt & Akanyeti, 2022). As a result, the ecological integrity of tourist destinations is threatened. Looking at the tourism landscape of a well-known tourism destination in the Philippines, Boracay Island, former President Duterte even urgently closed the Island in April 2018 due to its worsening environmental problems, calling the Island a "cesspool" during his talk at the Manila Times business forum in Davao, noting the presence of trash just 20 meters away from the coastline and foul smell in the beach (Parrocha, 2018). Through Executive Order (EO) No. 53, issued on May 8, 2018, Boracay Island was closed for six

(6) months for several environmental issues and violations, such as ineffective waste management, water quality deterioration, degradation of coastal areas and habitats and unsuitable development of coastal infrastructure and establishments (Rodil, N. M., 2018). UN Environment (2019) data shows that the increasing local population and the growing number of tourist arrivals are straining freshwater supplies, sewage treatment facilities, and landfills. The hotel industry alone is causing environmental pollution, of which 75% is from overconsumption of energy, water, and materials from its business operations, according to the study by Bohdanowicz and Martinac (2007), as cited by Viernes (2014). Viernes (2014) added that the wastewater, fumes, and materials released throughout the tourism operation harm the ecosystem.

The 6-month closure inflicted devastating loss on business, livelihood, and jobs, yet affected workers on the Island perceived it as a 6-month breather to Mother Nature. They realized the immense need to rehabilitate the Island. Notable achievements were attained since its culmination in September 2022, such as the clearing of illegal structures in wetlands and forest lands, improved water quality, the establishment of sewage treatment plants among hotels, and improved drainage systems, among others. Moreover, new sustainable practices are adopted and initiated by various accommodation establishments in response to the sustainable tourism call of the government and tourists, such as use of solar power, switching to recyclable materials, organizing clean-up drives and tree planting activities, use of eco-friendly cleaning solutions, use of LED and inverter appliances, use of recyclables materials (i.e., eco-brick project), locally sourced dishes, educating guests thru online platform, i.e., encourage to bring eco-bag and reusable water bottle in the Island, as evidenced from several resorts in Boracay.

Since the culmination of the government's Boracay Rehabilitation initiative, a limited number of studies have been published that provide in-depth studies that explore lessons and insights from successful rehabilitation programs in a world-class tourist destination like Boracay Island. Previous studies by Maming et al. (2021) focus on the perceived effect of the rehabilitation as well as the challenges, while Mijares and Rodriguez (2021) documented the lived experiences of displaced workers during the rehabilitation of the Island. The humble aim of this study is to shed new light on the topic by exploring stakeholders' experiences and lessons learned on the rehabilitation of the Island through their lens.

In this light, the researcher strongly believes that this study is relevant and useful given the vital role of environmentally conscious tourism in achieving sustainable development in the country, both in rural and urban areas. Specifically, information and data collected in the process can provide business owners and managers, particularly in the tourism sector, with best practices and valuable lessons they can integrate into their operations and strategic plans toward a more sustainable tourism business management. Likewise, this research can guide government and non-government organizations in crafting or enhancing more effective policies or programs related to environmental protection and conservation initiatives in a tourist destination, locally and internationally.

2.0 Methodology

2.1 Research Design

Qualitative research design was used in this study. Creating new knowledge is the ultimate goal of every research project; however, through a qualitative research design, a researcher can create new knowledge based on a deeper understanding and rich detail of the subject matter (Tripp-Reimer & Kelley, 2006). Further, when there is a need for fresh insights into a familiar issue, when there is a lack of prior knowledge on the subject at hand, or when more in-depth knowledge of phenomena is desired, the qualitative research design is appropriate (Creswell, 1998; Tripp-Reimer & Kelley, 2006). A qualitative research design was used in this study for a deep exploration of participants' perspectives and experiences regarding the rehabilitation of Boracay Island and their understanding of environmentally conscious tourism, fostering an in-depth appreciation of the complexity and dynamics inherent in rehabilitation strategies and environmental protection initiatives. Further, this study utilized a case study method. The utilization of the case study method allows for the exploration of a phenomenon within its specific context, utilizing a diverse range of data sources; this approach facilitates the analysis and comprehension of the various elements of the phenomenon by employing multiple perspectives (Baxter & Jack, 2015). Hence, a case study is appropriate for this study as it can provide a deeper understanding of the participants' lived experiences during the identified phenomenon or event, in this instance, the successful rehabilitation of Boracay

Island. This methodological approach facilitated the identification of key lessons learned, best practices, success factors and areas for improvement in promoting environmental protection and sustainable tourism in the Island.

2.2 Research Locale

The case study was conducted in Boracay Island in Malay, Aklan, in the 4th quarter of 2023. Boracay Island is located in the Western Visayas Region, in the Province of Aklan, particularly in the Municipality of Malay. The Island is divided into two main categories of land: reserved forest land, which spans an area of 377.68 hectares, and agricultural land, which covers 628.96 hectares and is designated as alienable and disposable. Boracay, being a world-famous white beach, had 2 million tourist arrivals in 2019 (Malay Municipal Tourism Office, as cited in Zabal, 2020) and 1.7M last year in 2022 (Patoza, 2023). It is home to various establishments that cater to the needs of local and international tourists, such as resorts, hotels, restaurants, and tour operators, among others. Beach activities popular with tourists include swimming, island hopping, diving, snorkeling, parasailing, and kayaking. Its breathtaking view and crystal waters have invited local and international tourists from around the world, making the Island a key player in the country's economic development and job generation.

2.3 Research Participants

The study participants were selected using purposive sampling. This study will have 12 key participants for this study, specifically eight (8) heads or managers of the following agencies/establishments/organizations: a) DILG, b) DENR, c) Boracay Foundation, d) DOT, e) LGU Malay, f) Hotel, g) Resort, and h) Transport Group, and one (1) Tourist, and three (3) residents of Boracay Island; and they were selected using purposive sampling. Data from this study were collected from participants who are directly involved in implementing Boracay Rehabilitation efforts or have direct experience during the rehabilitation process. Representatives from different sectors were chosen based on their knowledge, experience, and expertise relevant to the topic of this study. Such individuals were selected because they possess specific features or characteristics that will facilitate deeper investigation or comprehension of the key concepts and concerns the researcher wishes to investigate (Bryman, 2012) as cited by Ritchie et al. (2013). Moreover, participants in this study were presented using pseudonyms in order to protect their identities. Hence, this measure is implemented to guarantee the preservation of informants' anonymity and confidentiality throughout the research, in compliance with the stipulations outlined in RA 10173, also known as the Data Privacy Act.

2.4 Research Instrument

Semi-structured interviews were employed to obtain in-depth information on the key participants' experiences and perspectives. A personal interview was done between one key participant and the researcher. Questions were open-ended and covered topics related to the study's interest. The semi-structured interview adhered to a pre-established guide or protocol and is focused on a primary theme in order to establish a fundamental framework; it also leaves room for discovery by permitting the interviewee to pursue thematic trajectories as the discussion progresses. (Magaldi & Berler, 2020). In this study, the discussion focused on the experiences and perceptions of the key participants pertaining to environment-conscious tourism. Their learnings substantiated it from the successful rehabilitation of Boracay Island Resort. To ensure consistency and neutrality during the interviews, the researcher utilized open-ended questions and allowed flexibility in the discussions, as George (2022) recommended. To maintain neutrality during interviews, the researcher refrained from expressing personal opinions or leading participants toward specific answers or responses. Thus creating a safe and open environment for participants to express their insights and perspectives candidly.

2.5 Data Gathering Procedure

The researcher contacted the participants who matched the criteria. Approval from the Office of the Mayor of the Municipality of Malay and the participants' consent were obtained for the conduct of the study. Specifically, the participants were provided with an explanation of the research study and the ethical considerations as stipulated in the signed Informed Consent Form. Participants who were willing to participate were interviewed at their most convenient schedule. They were also notified that the interview was audio-recorded, and measures were undertaken to ensure the confidentiality of their identities. After the interview schedule, the researcher provided the participants with the analyzed data to ensure their true feelings and experiences were reflected in the analysis.

2.6 Ethical Considerations

Ethical considerations were properly observed during the present study. The researcher sought approval from the Research Ethics Review Board of the University for the conduct of this study. In addition, the researcher sought approval from the Office of the Mayor of the Municipality of Malay. Most importantly, consent forms were provided to the informants to obtain their prior and informed consent. The researchers used pseudonyms throughout the discussions to protect the privacy and confidentiality of the participants involved in this study. The use of pseudonyms ensures that no personal identifiers are revealed, thereby ensuring the confidentiality of the process and the anonymity of all participants.

3.0 Results and Discussion

The study revealed several overarching themes, including Community Engagement, Strict Regulatory Measure, Behavioral Shifts Towards Environmentally-Conscious Tourism Practices, Positive Changes through Infrastructure Improvements, and Strict Regulatory Measures as a Driver of Change.

Theme 1: Community Engagement

This theme was emphasized in the discussions made by participants revolving around community participation in an environmentally-conscious tourism, focusing on practices that promote environmental protection and conservation among various stakeholders.

Gloria, a representative from the business sector, expressed her answer with a strong sense of responsibility toward environmental protection. She stresses tourists' role and the significance of laws and regulations to guide tourists in adopting environmentally-friendly practices. She highlights practices, such as use of eco-bags and minimizing plastic usage among tourists when visiting the Island, and that tourists should be aware and comply with existing environmental laws. She narrates;

"There should be laws for tourists to practice and follow for them to be aware of their actions while they are on the island. We have various laws, like laws regarding the usage of plastics, which should be disseminated among tourists."

On the other hand, Henry and Helen focus on practical measures adopted in their respective establishments. Henry, conveying a tone of strong conviction, discusses measures, such as waste segregation and staff training as crucial steps towards responsible tourism operations, and that they are already doing it even before closure, and improving such measures at present. Henry states;

"Maybe one of those is abiding by the regulations set by the DENR ... waste segregation, because improper disposal leads to the deterioration of our environment, so that's one, even before closure we are already doing it, and right now we are heightening our practices, that's it."

Meanwhile, Helen brings attention to specific practices like using glass instead of plastic bottles and encouraging guests to reuse towels, aligning with the broader goal of waste management. While another participant, Arlyn, emphasized education and community involvement, including regular clean-up drives and partnerships with local government units for environmental campaigns. Helen recounts;

"Us, we do the little things...we participate in monthly clean-up drives, and then the daily practices, we also educate other visitors and guests going to Boracay."

Boracay residents, Johnny, Sally and Cecile, all recognized the crucial link between tourism and environmental conservation. Johnny, expressing his sentiments reflecting a tone of urgency and concern, emphasized that a sustainable tourism industry needs a healthy environment" Johnny then recalls and mentions;

"First and foremost, Boracay is a tourism haven, it's the number one tourism destination in the Philippines. Technically, we know that the environment plays a vital role in the tourism industry. Without the environment, there's no tourism. Technically, we should not destroy the environment. If you are a tourist or a stakeholder, we need to invest in tourism-tourism should not destroy the environment."

This insight aligns with Sally's view of the necessity for proper waste disposal and adherence to environmental laws, especially in an island destination like Boracay that heavily depend on tourism. Sally categorically states;

"Garbage segregation which could mean you are not allowed to throw garbage anywhere. There's an allotted time for garbage disposal and the trucks would not accept your garbage if it's not well segregated. Abiding by the law, you cannot smoke in non-smoking areas."

Cecile further stresses with optimism and concern, the importance of preserving natural resources like forests, water bodies, and wildlife to ensure more meaningful tourism experience among tourists, and provided another perspective focusing on educating the younger generations towards environmentally-conscious behaviors. She then remarked;

"The animals and the birds should also be preserved to be environmentally friendly, even caves because these are part of the environment that draws tourists... I teach my grandchildren proper waste disposal whenever they throw garbage everywhere, and to be kind also to living organisms and living things like the birds... to protect the environment, such as the birds and other things that contribute towards ecological balance."

Theme 2: Strict Regulatory Measures

This theme arose from the discussions made by participants on the aspect of legal compliance as an important part of an environmentally-conscious tourism. Participant's answers related to compliance and enforcement of environmental laws and regulations exemplify this as can be glossed in the succeeding discussions.

Looking at the perspective of the participants from the government sector or unit, Dennis, Elen, Manny and Rina's discussion focuses on the regulatory aspect and holistic development in a tourist destination. Elen's perspective emphasized regulatory aspects when she disclosed that;

"Environmental-conscious tourism involves strict adherence to laws and regulations. We must ensure that all developments comply with environmental standards and acquire necessary permits to prevent ecological damage."

While Dennis broadens Elen's concept including holistic development,

"Our approach to environmental-conscious tourism extends beyond regulations. It's about fostering social consciousness, accountability, and creating a business-friendly environment while prioritizing environmental protection."

This is also supported by Rina, when she stated;

"Environmentally-conscious tourism, often referred to as eco-tourism, emphasizes the importance of travel that is sensitive to and appreciative of the natural and cultural environments of the destination. It seeks to minimize impact, promote environmental awareness, and provide benefits to both the environment and the local communities. This form of tourism is critical in areas that are environmentally sensitive or have been degraded due to overuse or mismanagement, such as Boracay Island in the Philippines."

Rina even emphasized the important role of Boracay rehabilitation in addressing overcrowding and environmental degradation in the Island as guided by the principles of environmentally-conscious tourism. Toby, a tourist, expressed his change of perspective when the Boracay issue gained national attention, shifting his lack of strong environmental consciousness to heightened awareness. According to Toby as he shared his transformative experience,

"Before, I really didn't have a strong consciousness when it came to the environment. However, the closure of Boracay brought national scrutiny to environmental issues, leading to increased awareness. From that, I have acquired a sense of consciousness about environmental issues."

This transformation has led him to adopt environmentally-friendly practices such as waste segregation, energy conservation and reduced carbon footprint during his stay in the Island. He stated further that;

"Of course, when I had an awareness about the effects of being environmentally conscious, personally, for instance, in the hotels I have been practicing waste segregation and turning off the electricity when not in use...also when I learned about carbon footprints, I started to practice walking as a mode of transportation rather than riding public vehicles. Through this practice, I've learned to appreciate the beauty of Boracay Island more. I have been doing this since I have learned to become environmentally conscious."

The preceding findings suggest that stakeholder engagement, regulatory measures, education, and awareness play a vital role in achieving environmentally conscious tourism. Advancing environmental protection and conservation initiatives requires the active involvement of diverse stakeholders, including businesses, residents, government and non-government organizations, and tourists. Their collective efforts were crucial in implementing sustainable practices. Collaboration among government agencies plays a crucial role in ensuring the environmental viability of a tourist destination in areas such as regulatory measures, financial support, protection of cultural and natural assets, and enforcement of quality standards among tourism establishments (Baloch et al., 2023). Moreover, government interventions are effective when community members and its stakeholders are involved and engaged equally. As highlighted by Handayani and Lazuardi (2022), stakeholders other than government organizations, such as visitors and communities, are critical to environmental conservation and sustainable tourism.

On the other hand, regulatory measures through the implementation and enforcement of strict laws and regulations were necessary to manage waste, control pollution, and conserve the ecological health of the island. Studies by Sunlu (2002) show that effective and strict implementation of regulatory measures can mitigate environmental danger. Through enforcement of environmental policies and ordinances, the island can recover from environmental degradation and promote positive behaviors in the community. Lastly, educating the community about environmental conservation was also a key component in fostering sustainable behaviors to gain a better understanding of concepts of sustainable tourism and be empowered to engage in meaningful ecological actions. Hence, awareness campaigns and educational programs will help foster a culture of environmental concern and responsible tourism in an island tourism destination.

Theme 3: Negative Effects of Abrupt Implementation

Majority of the participants have expressed their sentiment on the closure that affected many livelihoods and businesses, especially participants coming from the business sector.

Henry emphasized the challenges posed by rehabilitation implementation but also sees the positive changes in the island such as environmental awareness and improved conditions of the sewerage system in the island. However, he expressed with a tone of disappointment and frustration how the government handles the implementation of the rehabilitation initiatives, noting the negative impacts among the workers and businesses, and its abrupt implementation. He shares;

"Well, I think, there's a lot of changes I mean, huge changes since during the Rehab, illegal septic tanks were discovered without the knowledge, [the beach was made] a waste disposal. You know, human and restaurant waste. It's a good thing that the government thought of rehabilitating the island. However, everything happened so suddenly, without further notice. The announcement that the island will be closed and rehabilitated happened so quickly. But it's still a good thing, for almost how many decades the island has recuperated for 6 months, also during the pandemic for 2-3 years. It's good that it happened but some people who didn't have savings were left hungry. There are advantages and disadvantages."

Helen also reflects on operational changes due to closure, like relocating beach beds and adjusting services set-ups to accommodate new regulations, which affected tourist experience and expectations in an island tourist destination like the Boracay. She narrates;

"When it comes to the operation, our beach beds were relocated so we can maintain that feature. Since we have our rooftop, they can sunbathe there but other tourists want an overlooking view of the beach. Those are some changes in our operations. Additionally, we used to set up chairs and tables on the side because it catches more guests. Such setups, more people will dine. However, it was gone (during rehab), that is one of the disadvantages."

Arlyn's sentiments further added the weight of pandemic to the economic turmoil experienced by the industry during closure, and everyone was set in a survival mode. She stated,

"It slowed down, because the Boracay suffered from both closure and the pandemic. The progress was really slow, it went downhill. But of course, we had to survive."

Although she added that government support was provided during rehabilitation, as she recalls;

"One good thing about that is that the members diverted to venture to other projects like in agriculture and other livelihood. There was native chicken raising- DOLE provided funds that served as a capital for these ventures."

The immediate implementation of rehabilitation measures in Boracay had adverse economic, social, and psychological consequences for local stakeholders. Although the long-term advantages of rehabilitation are evident in the enhanced environmental sustainability, the immediate repercussions emphasize the necessity of meticulous planning, community engagement, and gradual transition strategies in future development initiatives.

Unfinished Rehabilitation Projects

The unfinished rehabilitation projects in Boracay show a number of issues and have consequences for the sustainable growth of the island. The transcript revealed that some participants were apprehensive about the possible adverse effects of unfinished projects on the sustainability of the environment, economic stability, and general well-being of the community.

Gloria highlighted that the drainage system, although improved, was still incomplete and needs to be fully addressed because it is one of the main reasons of Boracay closure, she further stated while expressing a hint of frustration, when she said;

"The main problem of the island is the drainage system and the reason why the island was closed. It was called out by former President Duterte before "Boracay is Cesspool." It was also seen that in some establishments' kitchens and showers are connected to the drainage, and the smell is really noticeable."

The talk about incomplete rehabilitation projects emphasizes how important it is for development projects to have thorough planning, efficient execution, and open communication. To solve these issues and guarantee the long-term viability of Boracay Island, government officials must maintain their commitment, local communities must actively participate, and strategic alliances with pertinent parties must be formed.

Adverse Impact of Rehabilitation Strategies

Several challenges and consequences encountered by the local community, businesses, and stakeholders during the rehabilitation process are underscored in the discussion on the adverse impact of rehabilitation strategies in Boracay.

Henry provided a critical perspective, questioning the necessity of the rehabilitation for improving the roads and beaches, arguing that the closure might not have been essential for achieving that kind of improvement, and furiously emphasized the adverse economic impact on local businesses. He skeptically states that,

"Some would say that the beach has been beautified, even the roads. Which makes me think "Do they really need to rehabilitate the whole island to make the beach, the roads better? I don't think so. A lot of things were compromised. Did they really need to sacrifice the whole island because even the mainland is affected because most of our suppliers are from the mainland."

Although Helen echoed the same sentiment, she mentioned the support received from the government and the positive outlook of the community during the rehabilitation.

"But the main problem was the people's source of life or income, but we were able to get support from the government. People also learned to plant vegetables, because planting became a hit that time so that's additional worth of income."

On the other hand, Cecile emphasized the importance of political will in order to sustain the infrastructure improvements for long-term success, and cautiously states,

"What we need for these projects is the political will on the part of the local government unit, sometimes they cannot just implement the programs easily because of course, they are voters. It's the political will that implements it."

While rehabilitation projects seemed to be beneficial to the island, especially in the environmental aspect, short-term economic consequences have impacted local businesses. Although the government provided financial and social support during the Boracay closure, there was skepticism and distrust of government rehabilitation efforts among some stakeholders. These findings aligned with the study of Tops, J., and Lamers, M. (2024), whose participants felt substantially ignored, unfairly treated, and skeptical about future government actions due to a lack of dialogue and limited socio-economic support measures during the Boracay rehabilitation process. Enhanced support from the government and community engagement can provide vital assistance during challenging times. Therefore, rehabilitation programs that foster community involvement in sustainability interventions and decision-making processes and ensure transparent communication about the benefits and timelines of rehabilitation could have helped build support and reduce resistance during the process (Legaspi & Dela Santa, 2022; Mijares & Rodriguez, 2021; & Tops, J., & Lamers, M., 2024).

Theme 4: Behavioral Shifts Towards Environmentally-Conscious Tourism Practices

Looking at the positive side of Boracay rehabilitation, transformative changes have occurred and moved the Boracay community towards environmentally-conscious endeavors, creating a positive shift in behaviors and practices.

Helen's mention of specific initiatives like rainwater harvesting and heightened waste segregation demonstrates a proactive approach to sustainability within their organizations. She notes;

"So far, with regards to water- in my previous company, we used to have a rain water tank. During the pandemic, in times of rains, the tank would catch the rain and we use it to water the plants in the garden. So I've pitched this idea to my current boss since we are going to put up another building. Hopefully, it will be realized since it can also be used in various ways such as in toilet-flushing. Additionally, we also do segregation because we collect a lot of garbage and waste in housekeeping."

Manny, Arlyn and Helen also mentioned optimistically their on-going programs and participation in clean-up drives in the coastal areas. As Manny mentioned,

"The first project was Project Pristine. The Project Pristine is coordinated with the support of tourism frontliners. Every Friday, Saturday, and Sunday, we have a clean-up drive. It could be underwater, coastal, and tree planting. So, that is Project Pristine."

Helen also expressed that,

"...because they invite hotels to gather for a clean-up drive and tree planting projects, sometimes we do it in the mangrove areas in collaboration with the LGU."

Rina from the government sector also shared a post-rehabilitation initiative, thru partnership with private companies in providing trash bins in the island and surf rake for removal of beach debris, stating;

*"post-rehabilitation in 2018, the *** partnered with *** for the provision of trash bins that were strategically distributed all over the island including the White Beach to facilitate ease and proper disposal of trash in Boracay Island. Also through the ***, *** was able to donate a surf rake for the removal of different beach debris along the beachfront areas."*

Toby as well has observed positive changes post-closure among hotel establishments in the island, such as stricter regulations and improved monitoring of carrying capacity. Additionally, Toby noticed visible initiatives like garbage bins in hotels and automatic electricity-saving systems in rooms, indicating a shift towards sustainable practices, he remarked;

"...hotels now have garbage bins that are visible to the public eye, and then the rooms now have automatic key cards which function as the switch/ breaker for the electricity. If you compare it in the past, there were only a few hotels that used such a system..."

The study's findings suggest that Boracay rehabilitation has led to significant behavioral changes among the members of the community, especially the business sector, wherein more environmentally-conscious measures are more prevalent as their response to the government's call for more responsible business operations on the Island. Such measures are consistent with the ongoing efforts of various establishments on the Island, where they are adopting eco-friendly practices, including the use of solar power, switching to recyclable materials, organizing clean-up drives and tree planting activities, using eco-friendly cleaning solutions, using LED and inverter appliances, use of recyclables materials (i.e., eco-brick project), locally sourced dishes, educating guests thru online platform, i.e., encourage to bring eco-bag and reusable water bottle in the Island (The District Boracay, n.d.; Discovery Shores, n.d.; Feliz Hotel, 2019).

Theme 5: Positive Changes through Infrastructure improvements

This theme arose from the discussions made by participants on the aspect of infrastructure development as an effective rehabilitation strategy in the Island. Most of the participants shared positive feedback on road widening projects, transportation enhancements, and waste management and drainage systems.

Better Road Systems

Arlyn, Sally, Cecile and Elen expressed their satisfaction and optimism while sharing their perspective on the significant improvement observed in the island brought by infrastructure projects through Boracay rehabilitation. Arlyn, with optimism and relief, praised the widening of roads leading to a safer and more comfortable travel experience for locals and tourists, stating,

"Road widening, since it has contributed to an easier and safer movement of tourists...It's the roads, since you can really feel that the road was widened. It's less risky and has become accessible. There are also portions or areas where drivers can unload the passengers safely- road widening has contributed to the safety of tourists and the beautification of the road itself."

Sally echoed this sentiment, noting that widened roads made it easier for the movement of vehicles, especially those located in barangay roads:

"I'm sure it's the road widening [project] because the road ways have widened. Vehicles are no longer suffering from narrow roads. Sidewalks were also built for pedestrians."

Cecile, on the other hand, supported this observation by mentioning the effective implementation of road setbacks. She added;

"Of course it's positive. The setback from the high-water mark is very good. Also, the implementation of the 15-meter from the center of the road, Boracay is really strict with that."

Elen also emphasized optimistically the overall improvement observed through Boracay rehabilitation and the leadership of the former Pres. Duterte, particularly the improvement of roads and transportation systems. She commented;

"Changes have become visible after the rehab, not just on the DENR side, because of the closure and the statement of President Duterte, infrastructure. Roads have become better, and the transportation should be DOT registered."

Shift to Sustainable Transportation System

The shift to e-trikes was another positive observation highlighted by the participants like Arlyn, Helen and Johnny. Arlyn appreciated the transition from traditional tricycles to e-trikes, highlighting the comfort of travel when she said;

"Road widening, since it has contributed to an easier and safer movement of tourists."

Helen also mentioned the benefits of this transportation development in terms of less smoke emission leading to a cleaner environment. She mentioned;

“Right now, the use of e-trike lessens the air pollution. That’s one of the good things that has happened in Boracay.”

Improved Waste and Drainage Systems

Meanwhile, Helen and Toby, have expressed their satisfaction with the waste management and drainage system improvements in the Island. Helen emphasized that drainage system has improved the flooding situation in the area,

“They also developed the drainage, it has become really helpful, the flooding situation has changed, compared to before it has lessened now. It is because the drainages have already been cleaned, and they installed additional drainage, so at least it has helped somehow.”

Toby echoed the same observation,

“The government focused on building and improving infrastructures for sustainability purposes. Boracay is easily flooded before when there is a huge amount of rain but as I have observed, the flooding situation got better perhaps because of the drainage system built and the wastes are better managed.”

Gloria, however, pointed out with frustration that while there were improvements, the drainage system still needs further attention to address unfinished projects,

“The island is okay now, but not really perfect because of the unfinished drainage system of TIEZA.”

The findings suggest that the participants undoubtedly experience the positive impact of infrastructure development on the Island, noting that it has resulted in improved safety and reduced pollution, thus making the Island more accessible and pleasant for residents and tourists alike, therefore enhancing tourist experience and competitiveness of the Island leading to economic benefits in the long run. The participants’ positive observation correlates with the study of Maming (2022), confirming satisfactory implementation of Boracay rehabilitation efforts, particularly in drainage and sewerage system, road networks, and beach easement, thus leading to positive results in water quality, air quality, road expansions as well as improved ecological viability. Such evidence supports the effectiveness of infrastructure development in addressing environmental issues and attaining island sustainability. Improvements through investments in infrastructure in areas such as transport, communications, energy, and waste treatment are vital in tourism development towards the achievement of SDGs (UNWTO, 2013). Moreover, studies by Hollier and Lanquar (1996), as cited by Nguyen et al. (2020), highlight the importance of adequate tourist transport infrastructure and improved public facilities at tourist attractions in achieving sustaining tourism.

The adoption of more sustainable modes of transportation, such as e-trikes on the Island, aligns well with global trends towards eco-friendly practices that aim to reduce the environmental footprint of urban transport (UNWTO, 2013). Furthermore, the improvement of the drainage and sewerage system, as observed by the informants, as one of the effective strategies, is clearly addressing the major concern of the Island regarding waste-water management and disposal (Villanueva, 2018; Wright, 2018). Enhancing drainage and sewerage facilities on the Island shows the commitment of the government and its stakeholders to rehabilitate the deteriorating health of its environment, specifically in the area of water and waste management. Nevertheless, some participants have also expressed their critical perspectives on unfinished projects, particularly the development of drainage systems. Farmaki (2020) and Purnomo et al. (2020) emphasized that unfinished projects can worsen existing environmental problems. They can lead to higher costs in the long run, and through effective project implementation and leadership with political will, these kinds of challenges can be addressed and mitigated.

Theme 6: Strict Regulatory Measures as a Driver of Change in Boracay

A notable answer among participants is the strict regulatory measures that have significantly influenced the island’s transformation. This theme highlights the varied perspectives of various stakeholders on these regulations, highlighting both positive outcomes and challenges faced during the implementation process.

Positive Outcomes of Strict Regulations

Strict rules put in place during Boracay's rehabilitation have produced a number of benefits that have improved the island's infrastructure, community involvement, and environmental sustainability. Helen and Gloria, with pride and satisfaction, discussed the beneficial impacts of strict regulations on environmental cleanliness and law compliance among members of the community. Helen appreciates the local government unit's prompt enforcement of anti-burning regulations,

"What I like about the regulations right now is they prohibit the burning of garbage, especially plastic garbage. Once the LGU sees smoke appear, they would immediately go to the location. It really is a good action."

Thus, highlighting the positive effects to the environment leading to a cleaner and improved health conditions for the community. Gloria also notes the positive change in the Bulabog area, noting that the community has increased environmental consciousness and compliance, particularly in adhering to legal setbacks. She adds;

"...waste around the area is gone and people are now conscious of the laws. Also, the buildings that are close to the water, like 5 meters, were demolished. The Bulabog development is a great example of the improvement of Boracay."

Cecile also underscores DENR's effective preservation efforts of wetlands in the Island. She proudly pointed out the successful regaining and maintenance of mangroves of wetlands. She states;

"So far, DENR has become very strict. So they were able to regain parts of the mangroves, particularly the wetlands, so on. They were able to get those and preserve the wetlands. It was already identified, so I think that's a good move. Similar to what happened in front of Boracay D'mall, there used to be a lot of stalls and structures so they had these structures removed because mostly they were illegal, and they installed ornamental plants that's why it's a lot better now."

Another effective strategy noted proudly by Toby, is the implementation of the Island's carrying capacity,

"Although I'm not really sure if its implementation has been strengthened- the regulation on the carrying capacity of the island. I believe that the tourists now are being monitored unlike before where people can enter freely without being monitored- that they can ride the pump boat and spend a night or two on the island. But now since it's been monitored, emissions of carbon footprint are lessened and in effect, the waste being produced have also been lessened. This has led to a reduction in environmental impact, particularly in terms of waste management."

Similarly, Rina highlights with pride the positive impacts of DOT's strict implementation of mandatory accreditation and increases sustainable practices among tourism establishments, crediting the success through the coordinated efforts among various agencies and stakeholders,

"The whole-of-government approach adopted during the Boracay Island rehabilitation is widely regarded as one of the most effective strategies in achieving its environmental and sustainability goals."

Criticisms on Law Enforcement

Strict regulations have helped bring about positive developments in Boracay, but participants have also brought up issues and complaints about law enforcement. Sally, reflecting on the road widening project, emphasize with the lot owners who were affected by the road expansions:

"That's it, the road-widening project. But some have been clamorin since the project has eaten up portions of private land owned by private citizens and they were not compensated for this. But that's the beauty of it, the road has become safer, it's like there is an access to road everywhere."

Henry resonated with this sentiment when expresses frustration over the extensive restrictions on beach beds and other amenities, and expressed a desire for more flexible regulations:

"They should loosen their restrictions about beach beds which should already be allowed in limited numbers. Wherever you go in the world there's always a beach bed. Because of the closure, prohibitions were imposed, limitations were implemented."

Dennis added with a tone of concern, that the closure and subsequent regulations has also led to reductions of tourist arrivals due to cumbersome entry requirements and restrictions of certain activities in the Island:

"But the business owners have complained because the tourist arrivals have really decreased because of the lapses of the system of national government, so they find it hard and stressful because of the requirements that are asked before they enter and there are activities in Boracay that were restricted because it damages the environment."

However, he optimistically highlights the positive side of the regulatory measure, particularly leading to increased awareness and compliance among establishments, increased LGU income and establishment of database for DOT accreditation:

"They slowly complied and because of that, it generated additional income for the local government units, and because of this awareness campaign; they became more conscious of what they need to comply with in order for them to operate legally on the island. It raises awareness and we were also able to establish a database of the establishment's compliance and whether it is used for DOT accreditation."

On the other hand, Ellen discusses the challenges in the enforcement side of environmental laws, particularly in securing funding and sustaining legal actions against violators. She notes that;

"Perhaps the most challenging is the people who are resistant. Just like 2 weeks ago, CENRO submitted a report that there is a construction at wetland 8. They issued a notice already but they are really resistant."

Cecille also raises concern on some enforcement of garbage collection ordinances, noting a decline in strictness overtime, particularly in some areas of the Island:

"One of those is the issue of garbage since they are not really strict with that. During the time of Sacapaño, proper waste disposal was strictly implemented. I'm just not sure in other areas, since we are in the mountainous part, we just throw it on the proper areas and they will pick it for disposal."

The findings suggest that strict regulatory measures as an effective Boracay rehabilitation strategy have driven significant changes in environmental conservation and law compliance in the area. However, issues on sustained community compliance and concerns about environmental restrictions still exist and need to be addressed by the regulatory and enforcing units. The participants' discussion on the positive changes driven by strict regulatory measures is parallel to the statement of Miguel (2022), suggesting that Boracay's rehabilitation achievement can be attributed to the implementation of environmentally-conscious tourism practices and policies on the Island, coupled with the strong political will of President Rodrigo Roa Duterte's administration.

Strict enforcement of laws, as emphasized by the participants, has resulted in notable accomplishments. This strategy has resulted in the removal of illegal structures inside the 25+5-meter beach easement and 12-meter road easement, reclamation of wetlands and their ongoing rehabilitation, improved water quality in beaches, the connection of establishments to sewerage treatment facilities, and installation of new drainage systems (Lena, 2021). Hence, this confirms the studies of Rashid (2019) and Sunlu (2002) on the importance of effective implementation and strict enforcement of regulatory measures in mitigating environmental violations and enhancing ecological viability.

In the context of Boracay's rehabilitation efforts, the findings of the study highlight the importance of effective enforcement, coupled with flexibility on community needs, which leads to achieving positive environmental change and law compliance in the community; however, sustaining this positive changes necessitates the whole-of-government approach; enhanced collaboration among various stakeholders through public-private partnerships and dialogues for a comprehensive discussion of areas of concerns and future interventions and continued environmental campaigns and information dissemination to sustain community awareness and culture of compliance (Tops, J., & Lamers, M., 2024); and robust monitoring and continued strict law enforcement for long-term environmental health and well-being (Sawali C.M.A., n.d.).

4.0 Conclusion

Despite the small number of informants who were accommodated in this study, it can be concluded from the diverse information they have shared that environmentally-conscious tourism is becoming a way of life in Boracay Island, especially among the residents and the business establishments, as a result of their experiences and learnings from Boracay Rehabilitation. It can also be deduced from their opinion that the island rehabilitation- a government-led intervention for environmental stewardship has been a transformative process, fostering a shift towards environmentally-conscious tourism. Further, the rehabilitation strategies have led to substantial improvement in infrastructure, environmental conservation, and community engagement, leading to a safer, cleaner, and more appealing tourist destination for residents, businesses, and tourists alike. The island rehabilitation has been successful in achieving an environmentally conscious tourism culture, leading towards effective environmental conservation and restoration interventions. These conclusions, however, do not represent the general sentiment of the public at large, particularly the business sector, residents, and tourists. However, due to the proximity of the matter studied to the lives, work, and personal experiences of the informants, it can be drawn from their inputs that balancing strict regulatory measures with stakeholder needs, sustaining regulatory enforcement and community compliance, enhancing education and awareness campaigns, strengthening stakeholder engagements and collaborations are all critical in maintaining the positive outcomes and serving as a model for other tourist destinations planning for sustainable tourism interventions.

5.0 Contributions of Authors

The authors indicate equal ownership of the study. The corresponding author being the research advisee acknowledges that without the guidance and supervision of the research advisor, this study would not have materialized. The preparation of this publication manuscript was executed by the corresponding author under the supervision and guidance of the co-author-her dissertation advisor.

6.0 Funding

This study was completed through the support of the Aklan State University under the Faculty and Staff Development Program.

7.0 Conflict of Interests

The authors declare no conflicts of interest about the publication of this paper.

8.0 Acknowledgment

Ms. Sabandal and Ms. Gumban would like to thank Aklan State University and Central Philippine University for their support in the realization of this paper. The researchers would like to extend sincere gratitude and appreciation to the following individuals who have been instrumental in the completion of this study: Dr. Rowena M. Libo-on, Dean of the School of Graduate Studies, for the invaluable guidance and support throughout this research journey, who provided the researcher with motivation and inspiration in completing this study; Dr. Althea Denueno, Chairman of Evaluation Committee, Dr. Luis Abioda and Dr. Maribel Dunton, Panel Members, and Dr. Evan Anthony Arias, Outside Expert, for sharing their expertise, suggestions, and recommendations that enriched the researchers' conduct and completion of this study. The participants in this study, for their valuable inputs and contributions, as well as their perspectives and insights, have made the completion of this study possible.

9.0 References

- Baloch, Q. B., Shah, S. N., Iqbal, N., Sheeraz, M., Asadullah, M., Mahar, S., & Khan, A. U. (2022). Impact of tourism development upon environmental sustainability: A suggested framework for sustainable ecotourism. *Environmental Science and Pollution Research International*, 30(3), 5917–5930. <https://doi.org/10.1007/s11356-022-22496-w>
- Baxter, P., & Jack, S. (2015). Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers. *The Qualitative Report*. <https://doi.org/10.46743/2160-3715/2008.1573>
- Chauhan, V. (2007). Environment Legislation in Tourism: A Study of Tourist's And Host's Perspective. *JOHAR*, 2(1), 5.
- Farmaki, A. (2020). Regional network governance and sustainable tourism. In *Routledge eBooks* (pp. 192–214). <https://doi.org/10.1201/9780429324253-12>
- Feliz Hotel Boracay. (2019, July 2). Boracay Hotels Share Nine Sustainable Practices for Tourists on Vacation. Retrieved June 8, 2023, from <https://www.felizhotelboracay.com/boracay-hotels-share-nine-sustainable-practices-for-tourists-on-vacation>
- George, T. (2022). Types of Interviews in Research | Guide & Examples. *Scribbr*. <https://www.scribbr.com/methodology/interviews-research/>
- Handayani, D., & Lazuardi, S. V. (2022). Stakeholder Roles on Tourism Management, Environment Protection, and Conservation in Post Covid-19. *IOP Conference Series. Earth and Environmental Science*, 1111(1), 012076. <https://doi.org/10.1088/1755-1315/1111/1/012076>
- Koh, E., & Fakfare, P. (2020). Overcoming “over-tourism”: The closure of Maya Bay. *International Journal of Tourism Cities*, 6(2), 279–296. <https://doi.org/10.1108/IJTC-02-2019-0023>
- Legaspi, G. F. A., & Santa, E. D. L. D. (2022). Partnerships Towards Sustainability: The Revival of Boracay’s Wetlands. In *Perspectives on Asian tourism* (pp. 19–38). https://doi.org/10.1007/978-981-16-5264-6_2

- Lena, P. (2021, July 24). Boracay close to restoring its environmental integrity. Philippine News Agency. <https://www.pna.gov.ph/articles/1148113>
- Maming, J. B., Delantar, A. F. F., & Gabuya, P. G. (2021). Sustainable Tourism development in Boracay Island, Malay, Aklan. *International Journal of Multidisciplinary*, 2(8), 699–711. <https://doi.org/10.11594/ijmaber.02.08.0>
- Miguel, M. (2022, July). DENR celebrates Boracay Island's recognition as one of 'World's Greatest Places' of 2022. Department of Environment and Natural Resources. <https://www.denr.gov.ph/index.php/news-events/press-releases/4257-denr-celebrates-boracay-island-s-recognition-as-one-of-world-s-greatest-places-of-2022>
- Mijares, L. A. A., & Rodriguez, D. G. (2021). In The Mid of Closure Lies Opportunity: Live Experiences of the Tourism Displaced Workers. *International Journal of Scientific Research and Management*. <https://doi.org/10.18535/ijssrm/v9i04.em01>
- Nguyen, C. D., Ngo, T. L., My, N., & Nguyen, N. T. (2020). Key Factors Affecting Sustainable Tourism in the Region of South Central Coast of Vietnam. *The Journal of Asian Finance, Economics, and Business*, 7(12), 977–993. <https://doi.org/10.13106/jafeb.2020.vol7.no12.977>
- Nunkoo, R. (2017). Governance and sustainable tourism: What is the role of trust, power and social capital? *Journal of Destination Marketing & Management*, 6(4), 277–285. <https://doi.org/10.1016/j.jdmm.2017.10.003>
- Oleśniewicz, P., Pytel, S., Markiewicz-Patkowska, J., Szromek, A. R., & Jandová, S. (2020). A Model of the Sustainable Management of the Natural Environment in National Parks – A Case Study of National Parks in Poland. *Sustainability*, 12(7), 2704. <https://doi.org/10.3390/su12072704>
- Özgit, H., & Akanyeti, M. (2022). Environmental regulations versus sustainable tourism indicators: A pathway to sustainable development. *Worldwide Hospitality and Tourism Themes*, 14(4), 393–402. <https://doi.org/10.1108/whatt-03-2022-0033>
- Parrocha, A. (2018, February 10). Duterte warns to close 'cesspool' Boracay. Philippine News Agency. <https://www.pna.gov.ph/articles/1024807>
- Patoza, S. (2023, January 6). Boracay Island receives more than 1.7M tourists in 2022. Philippine Information Agency. <https://pia.gov.ph/news/2023/01/06/boracay-island-receives-more-than-17m-tourists-in-2022>
- Purnomo, S., Rahayu, E. S., Riani, A. L., Suminah, S., & Udin, U. (2020). Empowerment Model for Sustainable Tourism Village in an Emerging Country. *The Journal of Asian Finance, Economics, and Business*, 7(2), 261–270. <https://doi.org/10.13106/jafeb.2020.vol7.no2.261>
- Rashid, N. M. (2019, February 19). Environmental Law - United Nations and the Rule of Law. United Nations and the Rule of Law. <https://www.un.org/ruleoflaw/thematic-areas/land-property-environment/environmental-law/>
- Ritchie, J., Lewis, J., Nicholls, C. M., & Ormston, R. (Eds.). (2013). *Qualitative research practice: A guide for social science students and researchers*. SAGE Publications.
- Sawali, C. M. A Rights-Based Approach to Environmental Protection: The Balance between Police Power and Livelihood Rights.
- Sunlu, U. (2002, April). Environmental impacts of tourism. In *Local resources and global trades: Environments and agriculture in the Mediterranean region*. In Bari: CIHEAM (Options Méditerranéennes: Série A. Séminaires Méditerranéens. No 57). Conference on the Relationships between Global Trades and Local Resources in the Mediterranean Region (Vol. 4, pp. 263–270).
- Tops, J., & Lamers, M. (2023). Just tourism transitions? Sustainability policy interventions and implications on Boracay, Philippines. *Tourism Geographies*, 26(2), 237–254. <https://doi.org/10.1080/14616688.2023.2289996>
- UNWTO. (2013). *Sustainable Tourism for Development Guidebook - Enhancing Capacities for Sustainable Tourism for Development in Developing Countries*. <https://doi.org/10.18111/9789284415496>
- Viernes, J. S. (2014). Greening the hotel operations: Puerto princesa experience. *Asia Pacific Journal of Multidisciplinary Research*, 2(5).
- Villanueva, R. (2018, February). DENR orders closure of 300 Boracay establishments. Philstar.com. Retrieved June 5, 2023, from <https://www.philstar.com/headlines/2018/02/14/1787599/denr-orders-closure-300-boracay-establishments>
- World Tourism Organization. (2019). *International Tourism Highlights, 2019 Edition*. UNWTO. <https://doi.org/10.18111/9789284421152>
- Wright. (2018, April). Philippines' Boracay Island Hit by Algal Bloom Just Days Before Closure. The Weather Channel. Retrieved June 5, 2023, from <https://weather.com/science/environment/news/2018-04-26-boracay-philippines-algal-bloom-closure>

Tourist Satisfaction Experience With Boracay Information Guide Application: Bases for Sustainability Plan

Khina Marie Dela Torre-Prado*, Christopher D. Toloress
Aklan State University, Aklan, Philippines

*Corresponding Author Email: khina.delatorre23@gmail.com

Dated received: May 14, 2024

Date revised: June 19, 2024

Date accepted: June 27, 2024

Originality: 90%

Grammarly Score: 99%

Similarity: 10%

Recommended citation:

Dela Torre-Prado, K.M., & Toloress, C. (2024). Tourist satisfaction experience with Boracay information guide application: bases for sustainability plan. *Journal of Interdisciplinary Perspectives*, 2(8), 189-197.
<https://doi.org/10.69569/jip.2024.0206>

Abstract. This descriptive-correlational research was conducted to develop a proposed sustainability plan for Boracay Information Guide Application (BIG-A). The researcher used a researcher-made questionnaire to determine user satisfaction by evaluating the usability of BIG-A under three categories: accessibility, learnability, and operability. The results revealed that the users of the application are extremely satisfied with BIG-A. Also, it was found that there is no significant relationship between tourist demographics and user satisfaction with the usage of the app. Despite the extremely satisfactory rating of the mobile application, it is still essential for the Boracay Information Guide Application to be even more competitive to meet the demands of an ever-growing competitive tourism market. A proposed sustainability plan was crafted to ensure BIG-A's stability and continuity. It was strategized into four categories: BIG-A's Longevity and Maintenance, Community Support, Internal and External Funds, and Organizational Support. Presentation of the proposed sustainability plan to LGU-Malay and the stakeholders of Boracay Island is highly suggested.

Keywords: Tourist information guide; Boracay; Philippines.

1.0 Introduction

The Island of Boracay has always been considered a tourist hotspot either locally and internationally. Recently, Boracay reached 172,913 tourists in January 2024 according to the data of the Malay Tourism Office for January 2024. With the rapid growth of tourist influx, frauds, and scams are inevitable to occur. In 2023, according to the Malay Tourism Office data, an accumulation of almost Php 1,000,000.00 was reportedly scammed from tourists. Though digitalization can be beneficial for instantaneous communication and connectivity, digital risks compromise users' online safety and autonomy. While digital hazards jeopardize users' online safety and autonomy, digitalization can also be advantageous for rapid communication and connectivity. The Boracay Information Guide Application (BIG-A) Project was developed to address these issues. This mobile application for tourists and residents of the island is a free downloadable travel guide for Android and iOS phones. Several features such as the tourist spots in the municipality, events, accommodations, offices, and hotline numbers were the initial information that users can access in the app. It was developed and operated by the Local Government of Malay through the Municipal Tourism Office making sure that all information about services, updates, and new protocols came from reliable sources.

Competition among destinations is very tough and there is a need for Boracay to respond and step up as a smart tourism destination. Boracay Information Guide Application is an essential part of managing tourism on the island. Presently, there are no available studies signifying tourists' satisfaction with Boracay Information Guide Application. BIG-A also doesn't have a "feedback" button to receive comments and suggestions from its users.

Understanding tourists' perception of BIG-A is vital in ensuring the success and relevance of the mobile application for tourists visiting Boracay. This study was conducted to inquire BIG-A's usability under three categories: accessibility, learnability, and operability. The evaluation aimed to identify strengths and potential areas of improvement and create a sustainability plan to better manage tourism information in Boracay as well as the mobile application that hosts these information.

2.0 Methodology

2.1 Research Design

This research used the descriptive correlational research design. This design aims to determine the extent to which two or more variables co-vary, that is, where changes in one variable are reflected by changes in another (Miksza et al., 2023). Descriptive correlational studies often employ methods such as surveys, observational techniques, or questionnaires to collect data, which is then analyzed to identify patterns of association (Miksza et al., 2023) (Topuz & Gözüml, 2022). In this study, tourist demographics such as age, gender, civil status, and place of origin will be correlated with tourist satisfaction and how they affect the sustainability plan for Boracay Information Guide Application.

2.2 Research Participants

The respondents of this study were 134 local and foreign tourists visiting the Island of Boracay from the period of February to March 2024. The researcher used the purposive sampling technique in selecting participants. Purposive sampling is adaptable to both qualitative and quantitative research methods and is recognized for its methodological rigor when the sampling strategy is aligned with the research methodology (Campbell et.al., 2020). It also lowers the margin of error in data collection because the data sources are a close fit to the research context(Obilor, 2023). In this research, the survey was purposely conducted on domestic and foreign tourists who have downloaded the Boracay Information Guide Application. The study did not include minors(tourist 17 years old and below) as respondents

2.3 Research Instrument

The instruments used to collect data for this research were validated and pilot-tested researcher-made questionnaires composed of different indicators on the Boracay Information Guide Application's ease of use. Part I was the personal profile of the respondents such as gender, age, civil status, and geographical location or place of origin. Part II was composed of questions on tourist satisfaction through the user's assessment of BIG-A's accessibility, operability, and learnability utilization.

2.4 Data Gathering Procedures

The researcher asked for the assistance of the Malay Municipal Tourism Office in the distribution of questionnaires to domestic and foreign tourists with downloaded BIG-A on their mobile phones. The tourist respondents were given two options in answering the questionnaires- the respondents who were prepared may answer them in real-time and those who were not were time until their checkout dates to respond to the survey questionnaire. If the tourist-respondent chooses the latter, he or she can give the answered survey form to the Municipal Tourism Office personnel assigned at the "Tourist" counter of Cagban Port.

2.5 Data Analysis

Descriptive and inferential analyses were conducted in analyzing the data.

Frequency and Percentage

These were employed to explain the individual respondent demographics.

Mean

Mean was accustomed to determining the extent of tourist satisfaction with the Boracay Information Guide App.

Cramer's V

This was employed to ascertain the substantial correlation between tourist satisfaction with the Boracay Information Guide Application and the age, gender, civil status, and geographic area or place of origin of the respondents.

The decision to reject or confirm hypothesis was based on the p-value generated by the statistical software such as Statistical Package for Social Sciences (SPSS) version 23.0. If the p-value was less than or equal to the 5% level, then the hypothesis was rejected, and if the p-value is greater than the 5% level, then the hypothesis was confirmed.

2.6 Ethical Considerations

The conduct appropriately adhered to the ethical considerations of the research. The ensuing moral guidelines were noted by the researcher during the study: (1) Authorization to administer the study was solicited from LGU-Malay's Office of the Municipal Mayor and the Port Administrator of Caticlan Jetty Port and Passenger Terminal, and voluntary participation of the respondents was requested. Necessary permits were secured before the conduct of the study and letter requests were also given to the respondents. (2) The researcher assured the participants that there would be no negative consequences associated with the study. The researcher informed the purpose of the survey and emphasized that their responses would be utilized for research purposes only as part of an academic requirement. (3) The researcher retains the ability to ask the respondents to stop answering if they are uncomfortable or refuse to self-determination. The researcher informed the respondents that participation is purely voluntary and requested them to respond to the best of their knowledge, and (4) Respondent's anonymity was reserved and confidentiality was respected. The personal information of the respondents was not disclosed and was kept confidential by the researcher.

3.0 Results and Discussion

3.1 Profile of Respondents

Table 1 shows that regarding sex, there were slightly more female respondents, with 71 out of 134 or 53%, than male respondents, with 63 out of 134 or 47%. As for age distribution, the age group of 30 and below constituted a significant portion, with 68 out of 134 or 51.49%, while the age group of 42 and above was the smallest segment, with 20 out of 134 or 14.91%. Concerning civil status, married respondents made up a significant portion, with 71 out of 134 or 45.52%, while single respondents accounted for 61 out of 134 or 45.52%.

Table 1. Distribution of respondents according to their profile

	FREQUENCY	PERCENTAGES
Sex		
Female	71	53
Male	63	47
Age		
30 and below	68	51
31-41	45	34
42 and above	20	15
Civil Status		
Married	71	53
Single	61	46
Undeclared	2	1
Country of Origin		
Philippines	101	75.38
South Korea	11	8.22
USA	6	4.49
Japan	5	3.74
Australia	2	1.51
Austria	1	0.74
China	1	0.74
Germany	1	0.74
Korea	1	0.74
Russia	1	0.74
Singapore	1	0.74
South Africa	1	0.74
Taiwan	1	0.74
UK	1	0.74

The data above describes a research population where most of those who participated are young females. This group of respondents is an ideal target since most people of this demographic are inclined to use technology-based applications in their decision-making. Younger people tend to use mobile applications more than older

ones. Vacation travels, on the other hand, are usually done in groups, so it is not surprising to find married respondents in this survey. Boracay is a destination for couples to bond. While Abahre et al. (2023) and Liu et al. (2023) emphasize the importance of gender and age, Tamir et al. (2016) highlight the impact of cultural context on marital satisfaction and overall well-being, suggesting that the influence of demographic factors may vary across different cultural settings.

Table 1 also depicts the distribution of respondents according to their country of origin. Boracay Island is a melting pot of people from various places and cultures. It is also a tourism hub in the region, a pride of the country's tourism industry. This can be seen in the high patronage of Filipinos, as noted in this survey. The majority of respondents are from the Philippines, comprising 101 out of 134, or 75.38%. South Korea also contributed a notable portion, with 11 out of 134, or 8.22% of respondents. The United States of America also contributed a significant portion, with 6 out of 134, or 4.49%. Other countries have smaller representation, with 1 out of 134, or 0.74% of the total respondents.

This distribution provides insights into the geographic diversity of respondents using the BIG-A, being highly visible with visitors from the Philippines and notably visible with visitors from South Korea, Japan, and the USA. This diverse distribution is expected to provide a greater understanding of user preferences, behaviors, and satisfaction levels. While Damanik & Yusuf (2022) do not explicitly link visitor origin to mobile app satisfaction, they suggest that visitor characteristics, including country of origin, can influence perceptions and expectations, which may, in turn, affect satisfaction with various services, potentially including mobile applications.

3.2 Level of Satisfaction with Boracay Information Guide Application

Tables 2, 3, and 4 display the results of the survey conducted on the satisfaction of tourists with the Boracay Information Guide Application (BIG-A) along the criteria of accessibility, learnability, and operability.

Accessibility

Table 2. Tourist's satisfaction regarding accessibility

INDICATORS	MEAN	SD	VERBAL INTERPRETATION
Navigating the features of the app	4.51	0.743	Extremely Satisfactory
Layout and design of the app	4.43	0.654	Extremely Satisfactory
Technical difficulties reduction	4.40	0.824	Extremely Satisfactory
Loading times for pages in the app	4.31	0.740	Extremely Satisfactory
Finding Information in the app	4.25	0.763	Extremely Satisfactory
Mean	4.38	0.565	Extremely Satisfactory

Table 2 shows that respondents highly favored the navigation features of the app, as noted by its mean rating of 4.51, which is categorized as "Extremely Satisfactory." Despite receiving the lowest mean rating of 4.25, the feature for finding information was also rated as "Extremely Satisfactory." Overall, the table indicates that tourists are highly satisfied with various aspects related to the accessibility of the BIG-A. The mean scores are consistently high across all indicators, reflecting positive user experiences in terms of navigation, design, technical performance, information accessibility, and overall satisfaction. The low standard deviations suggest a relatively tight clustering of responses around the mean, indicating a high level of agreement among users regarding satisfaction levels.

Learnability

Table 3. Tourist's satisfaction regarding learnability

INDICATORS	MEAN	SD	VERBAL INTERPRETATION
Confidence in using the app	4.49	0.67	Extremely Satisfactory
Learning to use the app	4.45	0.64	Extremely Satisfactory
Organization of information categories	4.44	0.73	Extremely Satisfactory
Locating specific information	4.43	0.78	Extremely Satisfactory
Understanding menu option	4.40	0.73	Extremely Satisfactory
Mean	4.44	0.57	Extremely Satisfactory

Table 3 reflects the findings regarding the respondents' level of satisfaction with the learnability features of BIG-A. Data reveals that all indicators have been rated as "Extremely Satisfactory," as indicated by the mean of 4.44. Confidence in using the app leads all other criteria with a mean of 4.49, while the lowest mean of 4.40 was recorded for understanding the menu options. The standard deviations are relatively low, indicating a tight clustering of responses around the mean and high agreement among respondents regarding satisfaction levels with the app's learnability.

Operability

Table 4 on the next page indicates high levels of satisfaction across all indicators, with mean scores ranging from 4.40 to 4.49, all interpreted as "Extremely Satisfactory". It can be observed from the data that respondents' perceptions of the operability of BIG-A are very similar to their perceptions of learnability.

Table 4. Tourist's satisfaction regarding operability

INDICATORS	MEAN	SD	VERBAL INTERPRETATION
Bugs and glitches	4.49	0.67	Extremely Satisfactory
Run time experience	4.45	0.64	Extremely Satisfactory
Feedback and recovery	4.44	0.73	Extremely Satisfactory
Workflow procedure	4.43	0.79	Extremely Satisfactory
User-friendliness	4.40	0.74	Extremely Satisfactory
Mean	4.44	0.57	Extremely Satisfactory

The satisfaction with the absence of Bugs and glitches implies that their presence was negligible. Despite obtaining the lowest mean, User friendliness is still perceived as extremely satisfactory. The low standard deviation values (ranging from 0.57 to 0.79) suggest that the responses are closely clustered around the means, indicating a high level of agreement among respondents regarding satisfaction levels. The average mean score for all indicators is also "Extremely Satisfactory," reinforcing the conclusion that tourists find the operability of the BIG-A to be excellent across various aspects such as bug handling, runtime experience, feedback mechanisms, workflow procedures, and user-friendliness.

In all, these findings suggest that BIG-A performs exceptionally well in terms of operability, meeting or exceeding tourists' expectations, and contributing positively to their overall satisfaction with the app.

3.3 Relationship Between Respondents' Profile and Tourist Satisfaction

Tables 5 through 8 present the results of the inferential analysis rendered between profile variables and tourists' satisfaction with BIG-A.

Gender

Table 5. Gender and tourist satisfaction with BIG-A

VARIABLES	COEFFICIENT	P-VALUE	INTERPRETATION
1. Sex and Accessibility in terms of			
Navigating the features of the app	0.106	0.679	Not Significant
Finding Information in the app	0.209	0.209	Not Significant
Loading times for pages in the app	0.140	0.456	Not Significant
Layout and design of the app	0.039	0.977	Not Significant
Technical difficulties reduction	0.136	0.646	Not Significant
2. Learnability in terms of			
Learning to use the app	0.204	0.061	Not Significant
Confidence in using the app	0.167	0.441	Not Significant
Organization of information categories	0.201	0.248	Not Significant
Locating specific information	0.209	0.054	Not Significant
Understanding menu options	0.145	0.421	Not Significant
3. Operability in terms of			
Run time experience	0.045	0.872	Not Significant
Bugs and glitches	0.232	0.066	Not Significant
Feedback and recovery	0.181	0.335	Not Significant
Workflow procedure	0.120	0.749	Not Significant
User-friendliness	0.155	0.521	Not Significant

Table 5 shows the resulting data on the relationship between respondents' sex and their satisfaction with BIG-A. As can be gleaned from the table, all p-values are greater than the threshold p-value of 0.05, and therefore, the null hypotheses were accepted since there is evidence to show that there is no significant relationship between respondents' sex and their satisfaction with BIG-A. Thus, it can be said that respondents' sex does not significantly influence their satisfaction with the BIG-A across all accessibility indicators. These findings echo the work of Đàng et al. (2021), who did not find a significant difference in visitor satisfaction based on gender in the Dong Thap tourist destination. This indicates that while some studies have found gender differences, others have not, suggesting that the relationship between gender and tourist satisfaction may be context-dependent and influenced by various factors such as destination type, cultural context, and the nature of the tourism services provided (Đàng et al., 2021). Since information on these matters is also available in the BIG-A, it is not surprising to find that males and females do not significantly differ in their satisfaction with the app across all indicators.

Age

Table 6. Age and tourist satisfaction with BIG-A

VARIABLES	COEFFICIENT	P-VALUE	INTERPRETATION
1. Age and Accessibility in terms of			
Navigating the features of the app	0.294	0.240	Not Significant
Finding Information in the app	0.247	0.720	Not Significant
Loading times for pages in the app	0.183	0.143	Not Significant
Layout and design of the app	0.148	0.458	Not Significant
Technical difficulties reduction	0.130	0.871	Not Significant
2. Learnability in terms of			
Learning to use the app	0.179	0.637	Not Significant
Confidence in using the app	0.141	0.789	Not Significant
Organization of information categories	0.158	0.609	Not Significant
Locating specific information	0.086	0.921	Not Significant
Understanding menu options	0.142	0.528	Not Significant
3. Operability in terms of			
Run time experience	0.092	0.895	Not Significant
Bugs and glitches	0.175	0.195	Not Significant
Feedback and recovery	0.136	0.830	Not Significant
Workflow procedure	0.124	0.906	Not Significant
User-friendliness	0.162	0.570	Not Significant

Table 6 displays the results of the inferential analyses made on the relationship between respondents' age and their satisfaction with BIG-A. As seen in the data, all obtained p-values are greater than the threshold p-value of 0.05. The coefficients and p-values indicate that age does not play a significant role in determining satisfaction levels across these aspects of app usage. This led to the acceptance of the null hypothesis that there are no significant relationships between respondents' age and their satisfaction with BIG-A across all evaluation criteria. There is evidence to show that respondents' age does not significantly influence their satisfaction levels across all surveyed variables. The analysis suggests that respondents' age does not significantly influence their satisfaction with the BIG-A app in terms of accessibility, learnability, and operability.

The findings in this study support the study of Imtiaz & Suki (2022), wherein they emphasized the high satisfaction with mobile travel apps among tourists but did not explicitly link this satisfaction to demographic variables (Imtiaz & Suki, 2022). Although age is considered a factor in designing tourist experiences and has been considered in the design and development of BIG-A, the result of this research is identical to the earlier findings.

Civil Status

Table 7 displays the results of the inferential analyses made on the relationship between respondents' civil status and their satisfaction with BIG-A. As can be gleaned from the data, all obtained p-values exceed the threshold p-value of 0.05. The coefficients and p-values indicate that civil status does not play a significant role in determining satisfaction levels across the three aspects of BIG-A being surveyed. These results led to the acceptance of the null hypothesis that there are no significant relationships between respondents' civil status and their satisfaction with BIG-A across all evaluation criteria. There is evidence to show that respondents' civil status does not significantly influence their satisfaction levels across all criteria in the survey. The analysis suggests that respondents' civil

status does not significantly influence their satisfaction with BIG-A in terms of accessibility, learnability, and operability.

Table 7. Civil status and tourist satisfaction with BIG-A

VARIABLES	COEFFICIENT	P-VALUE	INTERPRETATION
1. Civil status and Accessibility in terms of			
Navigating the features of the app	0.128	0.900	Not Significant
Finding Information in the app	0.079	0.990	Not Significant
Loading times for pages in the app	0.236	0.021	Not Significant
Layout and design of the app	0.201	0.093	Not Significant
Technical difficulties reduction	0.138	0.749	Not Significant
2. Learnability in terms of			
Learning to use the app	0.106	0.556	Not Significant
Confidence in using the app	0.119	0.874	Not Significant
Organization of information categories	0.117	0.885	Not Significant
Locating specific information	0.036	0.987	Not Significant
Understanding menu options	0.125	0.654	Not Significant
3. Operability in terms of			
Run time experience	0.174	0.086	Not Significant
Bugs and glitches	0.132	0.590	Not Significant
Feedback and recovery	0.148	0.661	Not Significant
Workflow procedure	0.132	0.793	Not Significant
User-friendliness	0.116	0.889	Not Significant

Despite these findings, it is important to note that civil status does play a role in designing the tourist experience. Okorejior et al. (2024) identify a significant relationship between food choices and marital status among customers at ecotourism destinations, suggesting that civil status can indeed influence tourist preferences in specific contexts (Okorejior et al., 2024). The same can be said about making BIG-A work for all types of tourists.

Origin

Table 8. Visitor's origin and tourist satisfaction with BIG-A

VARIABLES	COEFFICIENT	P-VALUE	INTERPRETATION
1. Visitor's origin and Accessibility in terms of			
Navigating the features of the app	0.238	0.983	Not Significant
Finding Information in the app	0.214	1.000	Not Significant
Loading times for pages in the app	0.204	0.999	Not Significant
Layout and design of the app	0.220	0.996	Not Significant
Technical difficulties reduction	0.202	1.000	Not Significant
2. Learnability in terms of			
Learning to use the app	0.244	0.938	Not Significant
Confidence in using the app	0.252	0.975	Not Significant
Organization of information categories	0.229	0.997	Not Significant
Locating specific information	0.246	0.929	Not Significant
Understanding menu options	0.248	0.964	Not Significant
3. Operability in terms of			
Run time experience	0.262	0.862	Not Significant
Bugs and glitches	0.248	0.964	Not Significant
Feedback and recovery	0.166	1.000	Not Significant
Workflow procedure	0.194	1.000	Not Significant
User-friendliness	0.185	1.000	Not Significant

The results of the inferential analyses made on the relationship between respondents' visitor origin and their satisfaction with BIG-A are presented in Table 8. As can be seen from the data, all computed p-values are above the threshold p-value of 0.05. The coefficients and p-values indicate that visitor origin does not play a significant role in determining satisfaction levels across all aspects of BIG-A being surveyed. These results led to the acceptance of the null hypothesis that there are no significant relationships between respondents' visitor origin and their satisfaction with BIG-A across all three evaluation criteria. The results imply that respondents' visitor origin does not significantly influence their satisfaction with BIG-A in terms of accessibility, learnability, and operability.

4.0 Conclusion

Boracay attracts tourists from diverse backgrounds, therefore, there's a crucial need for an aggressive information campaign and promotion of the Boracay Information Guide Application to cater to this diverse demographic. Secondly, the functionality of the Boracay Information Guide App is confirmed and appears to be operating as planned, offering users helpful resources and information about the island. However, to maintain its utility, continuous monitoring and evaluation are essential. Thirdly, efforts should be directed towards sustaining the gains achieved by the Boracay Information Guide App. This entails implementing a Sustainability Action Plan, ensuring its long-term viability and relevance. Sustaining the gains of the Boracay Information Guide App is crucial for its continued success and effectiveness in serving visitors to Boracay and ensure that the app's information remains current and relevant by regularly updating it with the latest details on attractions, accommodations, restaurants, events, and any changes in local regulations or guidelines. Lastly, recognizing the importance of such an app in enhancing the tourist experience, it's imperative to integrate the proposed sustainability measures into the local tourism office's strategic development plan and secure necessary administrative support for its sustainability. The implementation of a thorough Sustainability Action Plan would enable the Boracay Information Guide App to maintain its current level of success while simultaneously making a positive impact on the environment, society, and economy of Boracay in the long run.

Given the foregoing conclusions, the following recommendations are given;

- a) There is a diverse tourist demographic visiting Boracay Island. With this, there should be an aggressive information campaign and promotion of the Boracay Information Guide Application to increase its visibility. It may affect the total experience of tourists on the island as the application covers usually what tourists need like accommodation, activities, restaurants, and others.
- b) Regular monitoring and evaluation of BIG-A is recommended to maintain its accessibility, learnability, and operability. Also, a possible application to the Intellectual Property Office (IPOPHL) for the Boracay Information Guide Application is to be protected.
- c) Adoption of the proposed sustainability action plan in the local tourism office's strategic development plan is highly encouraged so that the results of the present study may be utilized. It is also encouraged that a Municipal Resolution will be made for its sustainability.
- d) Other researchers are encouraged to address the limitations of the present study.

5.0 Contributions of Authors

The authors initiated and completed this study.

6.0 Funding

This work was funded by the authors.

7.0 Conflict of Interests

The authors declare no conflict of interest.

8.0 Acknowledgment

The authors extend their appreciation to everyone who played a role directly or indirectly in aiding them to complete this study and providing motivation during the months it took to piece together.

9.0 References

- Abahre, J., Al-Rimmawi, H., Abu Raida, L., Alkhateeb, M., Bishawi, W., Mahmoud, S., Suleiman, A., & Khlaif, Z. N. (2023). Impact of political instability on 1948-Palestinian shoppers' satisfaction: Palestinian tourist destination as a case study. *Heliyon*, 9(6), e17235. <https://doi.org/10.1016/j.heliyon.2023.e17235>
- Campbell, S., Greenwood, M., Prior, S., Shearer, T., Walkem, K., Young, S., Bywaters, D., & Walker, K. (2020). Purposive sampling: Complex or simple? Research case examples. *Journal of Research in Nursing: JRN*, 25(8), 652–661. <https://doi.org/10.1177/1744987120927206>
- Damanik, J., & Yusuf, M. (2022). Effects of perceived value, expectation, visitor management, and visitor satisfaction on revisit intention to Borobudur Temple, Indonesia. *Journal of Heritage Tourism*, 17(2), 174–189. <https://doi.org/10.1080/1743873X.2021.1950164>
- Đàng, V. Q., Huỳnh, T. Q., & Nguyễn, T. G. (2021). Impact of destination images to satisfaction of domestic tourists for Dong Thap tourist destination. *Science & Technology Development Journal - Economics - Law and Management*, 5(3), first. <https://doi.org/10.32508/stdjelm.v5i3.776>
- Huseynov, F. (2020). Understanding usage behavior of different mobile application categories based on personality traits. *Interacting with Computers*, 32(1), 66–80. <https://doi.org/10.1093/iwc/iwaa005>

- Imtiaz, H., & Mohd Suki, N. (2022). Mobile travel apps engagement: Measuring tourists' perception. *International Journal of Interactive Mobile Technologies (ijIM)*, 16(14), 171-181. <https://doi.org/10.3991/ijim.v16i14.31445>
- Liu, L., Zhou, Y., & Sun, X. (2023). The impact of the wellness tourism experience on tourist well-being: The mediating role of tourist satisfaction. *Sustainability*, 15(3), 1872. <https://doi.org/10.3390/su15031872>
- Miksza, P., Shaw, J. T., Richerme, L. K., Hash, P. M., & Hodges, D. A. (2023). *Music Education Research: An Introduction*. Oxford University Press
- Obilor, E. I. (2023). Convenience and purposive sampling techniques: Are they the same? *International Journal of Innovative Social & Science Education Research*, 11(1), 1-7.
- Okorejior, F. A., Oladeji, S. O., & Arowosafe, F. C. (2024). Socio-demographic profiles of customers' food preferences at ecotourism destinations in south western, nigeria. *European Journal of Hospitality and Tourism Research*, 12(1), 1-23. <https://doi.org/10.37745/ejht.2013/vol12n1123>
- Tamir, H., Stephens, D. P., & Levitt, M. J. (2016). Cross-sex versus same-sex experience and relationship satisfaction: Addressing diverse social networks among Orthodox Jews. *Mental Health, Religion & Culture*, 19(6), 587-599. <https://doi.org/10.1080/13674676.2016.1217516>
- Topuz, İ., & Gözümlü, S. (2022). Determining diabetes risk and health literacy levels in individuals aged 45 and above: A descriptive correlational study. *Acibadem Universitesi Saglik Bilimleri Dergisi*, 13(4). <https://doi.org/10.31067/acusaglik.1066190>

Boosting Literacy: Evaluating the Impact and Satisfaction of Project DARA (Daily Reading Activities)

Joewe G. Sales

Amando Carlos Lahoz National High School, Palawan, Philippines

Author Email: joewe.sales0001@deped.gov.ph

Dated received: June 4, 2024

Date revised: June 19, 2024

Date accepted: June 27, 2024

Originality: 96%

Grammarly Score: 99%

Similarity: 4%

Recommended citation:

Sales, J. (2024). Boosting literacy: evaluating the impact and satisfaction of Project DARA (*Daily Reading Activities*). *Journal of Interdisciplinary Perspectives*, 2(8), 198-211. <https://doi.org/10.69569/jip.2024.0261>

Abstract. This study provides a comprehensive analysis of pre-reading activities, post-reading activities, and satisfaction levels across several dimensions: Program Experience, Reading Improvement, Personal Impact, and Program Feedback, as detailed in various tables. The pre-reading activity highlighted significant gender disparities and varying difficulties with word lengths across different grades. The post-reading assessment demonstrated substantial progress in reading abilities across all grade levels, affirming the program's effectiveness. The findings revealed notable gender disparities in learner distribution across all grades, with a higher number of female learners, indicating the need for tailored interventions. The post-reading assessment showed significant improvements in reading abilities, including comprehension, speed, and fluency, across all grades. Learners exhibited increased confidence, engagement, and motivation, with some even tutoring peers, underscoring the program's impact beyond technical skills. Additionally, participants reported high satisfaction levels across various aspects of the program, including organization, materials, instructor quality, and program content. They experienced increased confidence, independence, enjoyment of reading, and improved academic performance, indicating a positive personal impact. This research underscores the efficacy of the 90-day reading program in addressing foundational literacy challenges, fostering independent reading habits, and positively influencing learners' personal and academic lives. The findings emphasize the importance of tailored interventions, supportive environments, and ongoing support in enhancing reading abilities and promoting lifelong learning.

Keywords: Reading improvement; Reading program; Project evaluation.

1.0 Introduction

Reading, the process of interpreting written or printed material, is a fundamental skill essential for acquiring knowledge and enjoyment from text. It encompasses deciphering words, sentences, and paragraphs to comprehend the conveyed information or story. Reading manifests in various forms, such as leisure, educational, or professional reading, and significantly enhances vocabulary, critical thinking, and overall cognitive abilities.

The importance of reading lies in its multifaceted benefits. It serves as a gateway to knowledge and diverse perspectives, expanding vocabulary and language skills. Reading fosters critical thinking by encouraging analysis, interpretation, and evaluation of text, thereby honing cognitive abilities. The act of reading also cultivates focus and concentration, contributing to improved attention spans and mental acuity. Additionally, reading offers relaxation and stress reduction through immersion in literary worlds, while exposure to different writing styles sharpens communication skills. The cognitive stimulation from reading is beneficial for brain health, potentially staving off cognitive decline. Thus, reading enriches lives and provides numerous cognitive, emotional, and mental advantages (National Reading Panel, 2000).

Improving students' reading skills involves diverse strategies and approaches. Fundamental aspects include teaching phonemic awareness and phonics, crucial for decoding words. Vocabulary development, achieved through exposure and direct instruction, enhances understanding. Reading fluency improves with repeated reading and reading aloud, focusing on speed, accuracy, and expression. Comprehension strategies like making predictions, visualizing, summarizing, and questioning the text, alongside graphic organizers, help students structure thoughts and better understand the material (Shaywitz, 2003).

Fostering a love for reading is vital, achieved by providing diverse reading materials, creating a reading-friendly environment, and allowing time for pleasure reading. Classroom techniques such as guided reading, shared reading, independent reading, and literature circles play significant roles. Guided reading involves small group instruction tailored to reading levels, focusing on decoding, fluency, and comprehension with teacher support. Shared reading allows the class to read together, helping students see and hear words simultaneously while the teacher models fluent reading and comprehension strategies. Independent reading lets students choose books that interest them, promoting ownership and motivation. Literature circles encourage critical thinking and discussion through small, student-led groups with assigned roles (Hart & Risley, 1995).

Assessment and feedback are critical, with formative assessments like quizzes, reading logs, and informal observations providing ongoing progress monitoring and immediate feedback. Summative assessments, such as standardized tests and end-of-unit exams, evaluate overall reading proficiency and inform future instruction. Support for struggling readers includes individualized instruction, one-on-one tutoring, small group sessions, and using technology like educational software and apps for interactive reading practice, along with audiobooks and e-readers to accommodate diverse learning styles (Neuman & Celano, 2001).

Students face numerous challenges in developing reading abilities, significantly impacting their academic performance and overall literacy. Learning disabilities, such as dyslexia, affect the ability to recognize and process written words, requiring specialized instruction and interventions (Shaywitz, 2003). Children lacking early exposure to books, storytelling, and rich language experiences often enter school with limited vocabulary and poor phonemic awareness, creating an early literacy gap (Hart & Risley, 1995).

Socioeconomic factors exacerbate reading difficulties, as students from low-income families face barriers like limited access to books and educational resources, less parental involvement due to work constraints, and under-resourced schools, contributing to lower reading achievement and literacy rates (Neuman & Celano, 2001). Inadequate phonics instruction also impedes reading development; without a strong phonics foundation, students struggle with reading accuracy and fluency, leading to frustration and disinterest in reading (National Reading Panel, 2000).

Limited reading motivation and engagement often stem from a lack of reading materials reflecting students' interests or cultural backgrounds, negative reading experiences, and a failure to view reading as meaningful or enjoyable, leading to minimal practice and slower skill development (Guthrie & Wigfield, 2000). Even with word decoding skills, comprehension challenges arise due to limited vocabulary, poor background knowledge, and weak inferential thinking skills, making it hard to grasp texts' deeper meanings (Kintsch, 1998). Reading instruction quality varies widely between schools and teachers, with inconsistent or ineffective methods leaving students without the necessary skills and strategies to become proficient readers (Allington, 2013). A strong focus on standardized testing can lead to teaching to the test rather than fostering a love of reading and deep comprehension skills, neglecting critical reading instruction aspects like critical thinking and independent reading (Au, 2007). Emotional and psychological factors, such as anxiety, low self-esteem, or lack of confidence in reading abilities, also cause students to avoid reading tasks and fail to engage fully in learning opportunities (Chapman, Tunmer, & Prochnow, 2000). The prevalence of digital devices and social media further distracts students from reading; although technology can enhance reading skills, it often competes with traditional reading activities for students' attention, reducing time spent on focused, sustained reading (Rideout, Foehr, & Roberts, 2010).

Addressing these challenges requires a comprehensive approach, including early intervention, customized instruction, parental and community involvement, and diverse and engaging reading materials. Recognizing and

tackling these issues enables educators to better support students in developing strong reading skills essential for their academic and personal success.

Given the increasing number of students struggling with reading, Project DARA (Daily Reading Activities) was implemented to address these issues among students at Amando Carlos Lahoz National High School, Culandandum, Bataraza, Palawan. The 90-day initiative targets junior high school students identified as struggling readers during a pre-reading activity conducted by the school. The primary objectives of Project DARA are to reduce the number of struggling readers, foster a habit of reading, instill an appreciation for reading, and enhance reading comprehension skills. The project, implemented by reading teachers at ACLNHS, involves a comprehensive action plan.

The implementation plan includes developing an action plan through a faculty meeting, engaging stakeholders, conducting a pre-assessment to determine reading profiles, screening results, and deliberating on the final list of program beneficiaries. A meeting and orientation with parents and guardians will discuss their roles in supporting the program. The 90-day reading program includes various reading activities, followed by a post-reading activity evaluation. Results will be discussed in a post-conference session, and a post-conference with program beneficiaries will recognize their successful completion.

2.0 Methodology

2.1 Research Design

In this research work, the researcher used mixed method research methodology exploratory design (qualitative-quantitative). Mixed methods research is valued for its ability to provide a more comprehensive understanding of a research problem by leveraging the strengths of both qualitative and quantitative approaches. It allows researchers to explore different aspects of a phenomenon, validate findings across methods, and gain richer insights than using either method alone.

Exploratory research design is a flexible and open-ended methodology used to investigate problems that are not well-defined, aiming to gain insights, discover new ideas, and understand phenomena more deeply. It typically employs qualitative methods such as interviews, focus groups, case studies, and literature reviews, allowing researchers to adapt their approach as new information emerges. This design is often the first step in research, helping to clarify concepts, define problems, and generate hypotheses, rather than testing them, making it especially useful for studying new or poorly understood topics.

2.2 Research Participants

The participants of this research study were thirty-six (36) learners purposively selected based on the results of a pre-reading assessment conducted at Amando Carlos Lahoz National High School. These learners were identified as struggling readers, making them the appropriate participants for this study. By targeting students who demonstrated difficulties in reading, the research aims to directly address and measure the efficacy of the intervention program. This focused selection allows for a more precise evaluation of the program's impact on improving reading abilities and satisfaction among those most in need of assistance. This approach ensures that the study's findings are relevant and applicable to addressing foundational literacy challenges within this specific educational context.

2.3 Research Instrument

To fully understand the existing phenomena happening using qualitative and quantitative data, the researchers made use of the following instruments:

Guided Reading Observation Form. A tool used by educators to observe and evaluate guided reading lessons in small groups. It helps teachers track student progress, identify areas for improvement, and ensure effective instruction during guided reading sessions. The form typically includes fields for recording details such as the book title, reading level, date, specific skills addressed, and any additional notes. Teachers can use this form to monitor student engagement, comprehension, and fluency during guided reading activities.

Anecdotal Record. An anecdotal record is a detailed descriptive narrative recorded after a specific behavior or interaction occurs. Teachers use anecdotal records to: a. Plan learning experiences By observing and documenting children's behaviors, teachers gain insights into their interests, strengths, and areas for growth. This information helps them tailor activities and lessons to meet individual needs. b. Provide information to families: Anecdotal records allow teachers to share specific examples of a child's progress, challenges, and achievements with parents or guardians during parent-teacher conferences or other communication. c. Identify possible developmental delays: By closely observing children's actions, teachers can detect any signs of developmental delays or areas where additional support may be needed. These records serve as valuable tools for understanding each child's unique development and adjusting teaching strategies accordingly.

Researcher-made instrument. This research instrument is a Likert-scale survey questionnaire.

2.4 Data Gathering Procedure

As part of the data gathering procedure for this study, several steps will be undertaken to ensure the successful implementation of Project DARA. Initially, a faculty meeting will be conducted to prepare an action plan. Following this, a meeting with stakeholders will be held to present the plan and gather support for its implementation. A pre-assessment will then be prepared for the learners of ACLNHS to identify their reading abilities. The results of this pre-reading assessment will be screened to identify the learners who will benefit from the program. Once the final list of program beneficiaries is deliberated, a meeting will be conducted with their parents and guardians. Subsequently, Project DARA will be implemented which will last for ninety (90) days. The quality assurance and evaluation of the program beneficiaries will follow. This will be done by language teachers who are not involved the reading program, the purpose of this procedure is to test the quality of the program since it will quality assured by other teachers . A survey will then be conducted with the program beneficiaries. Finally, a post-conference will be held to review the outcomes.

2.5 Ethical Considerations

When undertaking research focused on "Project DARA (Daily Reading Activities): Efficacy and Satisfaction," it is essential to carefully consider various ethical considerations to protect the rights and well-being of participants and stakeholders involved. Key ethical issues that must be addressed including the following: Informed Consent: When involving students in any research or assessment related to the reading program, it's essential to respect their autonomy. Obtaining informed consent from students (or their parents/guardians) ensures transparency. Clearly explain the purpose, procedures, and potential risks or benefits of participation. This ensures that students and their families understand what is expected of them. Confidentiality: Protecting student privacy is paramount. Safeguard personal information, assessment results, and reading progress. Avoid sharing identifiable data without proper consent. Securely store student records and limit access to authorized personnel. Using codes when reporting findings maintains confidentiality. Equity and Fairness: The reading program should not discriminate based on race, gender, socioeconomic status, or other factors. Provide equal opportunities for all students. Be aware of existing disparities in access to resources (e.g., books, technology) and customized the program to meet diverse needs. Beneficence and Non-Maleficence: Strive to enhance students' reading skills, comprehension, and enjoyment. Consider the potential positive impact of the program. At the same time, minimize any negative consequences associated with assessments or interventions. Regularly monitor student well-being throughout the program. Professional Integrity: Uphold honesty and integrity in reporting. Present accurate data and findings without manipulation or bias. Avoid misrepresenting student progress or program effectiveness. Prioritize student learning over personal gain or external pressures.

3.0 Results and Discussion

3.1. Demographics

The pre-reading activity conducted by teachers provided an overview of the reading ability of the learners. As shown in Table 1, in Grade 7, there are 50 learners, with 22 males and 28 females. Grade 8 has 65 learners, comprising 21 males and 44 females. In Grade 9, there are 41 learners, with 23 males and 18 females, while Grade 10 has 33 learners, with 14 males and 19 females. Overall, the total number of learners is 189, with 80 males and 109 females.

The assessment of reading abilities revealed varying difficulties with word lengths across different grades. In Grade 7, six learners struggled with 2-letter words, three with 3-letter words, one with 4-letter words, and ten with 5, 6-letter words and more. Grade 8 saw one learner struggling with 3-letter words, five with 4-letter words, and five with 5, 6-letter words and more. In Grade 9, four learners had difficulties with 4-letter words, and two with 5, 6-letter words and more.

Table 1. Data of learners assessed during the pre-reading activity

Grade Level	Male	Female	Number of Learners Tested
Grade 7	22	28	50
Grade 8	21	44	65
Grade 9	23	18	41
Grade 10	14	19	33
TOTAL	80	109	189

These findings have several implications. Firstly, there is a notable gender disparity, with more female learners (109) than male learners (80) across all grades, especially pronounced in Grade 8. This suggests that interventions and support strategies need to consider this gender distribution, considering approaches to the larger female cohorts. Secondly, the reading challenges indicate that many Grade 7 learners face fundamental literacy issues, struggling with very basic words. As learners progress to higher grades, the difficulties shift towards longer words, showing an improvement in overall literacy levels.

Grade-level specific needs also emerge from the data. In Grade 7, interventions should focus on foundational reading skills, including phonetics and basic vocabulary building. Grade 8 requires differentiated instruction strategies to address a wide range of reading difficulties. For Grade 9, the emphasis should be on advanced reading skills, including reading comprehension and context-based learning.

To address these challenges, it is recommended to implement targeted reading intervention programs starting from Grade 7, progressively increasing in complexity for higher grades. Developing gender-sensitive instructional strategies will ensure equitable support for both male and female learners. Regular reading assessments should be conducted to monitor progress and adjust teaching strategies. Teacher training is essential to help educators recognize and address varying levels of reading difficulties using differentiated instruction techniques. Additionally, involving parents in the literacy development process by providing them with tools and resources to support reading at home is crucial.

The data indicates a need for comprehensive, multifaceted reading intervention strategies that address foundational literacy challenges in lower grades and progressively tackle more complex reading difficulties in higher grades. Gender disparities must be considered to ensure equitable educational support, with regular assessments and adaptive teaching methods being crucial for improving overall reading abilities across the student population.

3.2 Results of the Reading Program after the Implementation of Project DARA

The post-reading assessment demonstrates the substantial progress made by learners after participating in a 90-day reading program. The assessment covered learners from Grades 7 to 9 who initially exhibited difficulties with reading words of varying lengths, ranging from simple 2-letter words to more complex 5 and 6-letter words.

Learners in Grade 7 initially faced significant challenges, with difficulties spanning from 2-letter to 6-letter words. However, the post-assessment results show a dramatic transformation. All Grade 7 learners now read independently, with several capable of tutoring their peers. Teachers highlighted that these learners not only read multiple words and sentences but also actively participate in reading activities, demonstrating a high level of engagement and confidence. This improvement indicates that the program effectively addressed foundational literacy skills, allowing learners to build a solid reading base.

Grade 8 learners initially struggled with words ranging from 3-letter to 6-letter words. Post-assessment results reveal that these learners have also made significant strides, achieving independent reading status. Teachers emphasized improvements in both reading comprehension and the ability to read long words and sentences. This

suggests that the reading program successfully helped learners enhance their overall literacy, enabling them to tackle more complex reading tasks and improving their understanding and retention of the material.

In Grade 9, learners who initially had difficulties with 4-letter to 6-letter words showed marked improvement, becoming independent readers. Teachers noted that these learners addressed their reading problems effectively, with the ability to read long words and sentences fluently. This indicates that the program not only helped learners overcome specific reading challenges but also equipped them with the skills necessary for more advanced reading and comprehension tasks.

The data reveals several key implications and insights regarding the effectiveness of the 90-day reading program. Firstly, the program was highly effective across all grade levels, with all learners showing significant improvements in becoming independent readers and exhibiting enhanced reading comprehension and engagement. The transition of learners to independent reading serves as a major success indicator, reflecting the program's effectiveness in fostering self-reliant reading habits and boosting learners' confidence in their reading abilities. Improvements in reading comprehension across all grades indicate that the program not only helped learners read words but also better understand and retain the material, which is crucial for their overall academic success.

In a study of Slavin, R.E., et.al. (2011) on methods for improving reading outcomes for struggling readers aged 5-10. They examined one-to-one tutoring, small-group tutorials, classroom instructional processes, and computer-assisted instruction across 97 students. The findings indicate that one-to-one tutoring, especially with a phonics focus, is highly effective, with teachers being more effective tutors than paraprofessionals or volunteers. Small-group phonetic tutorials are also effective, but less so than one-to-one tutoring. Classroom instructional programs, particularly cooperative learning, show positive effects, while computer-assisted instruction has minimal impact. The review recommends enhancing classroom instruction and providing targeted one-to-one phonetic tutoring for struggling readers.

Moreover, the significant progress made by learners who initially struggled with basic words demonstrates the program's ability to effectively address foundational literacy skills, thereby setting a strong base for further learning. Additionally, several learners have become capable of tutoring their peers, which reinforces their own learning and fosters a collaborative learning environment. Increased active participation in reading activities reflects a boost in learners' engagement and confidence. However, some learners still face challenges with pronunciation and occasionally forget long words, highlighting the need for continuous practice and additional focused interventions to reinforce these areas.

3.3 Satisfaction Levels Across Multiple Variables

The analysis of the pre-reading and post-reading assessments reveals significant differences in learner improvement across different grade levels following a 90-day reading program. In the pre-reading assessment, gender disparity is evident, with more female learners (109) than male learners (80) across all grades, particularly noticeable in Grade 8. This highlights the importance of considering interventions to address the needs of the larger female cohorts, ensuring equitable support. Additionally, the assessment highlights varying difficulties with word lengths across grades. Grade 7 learners struggle with basic words, while challenges shift towards longer words in higher grades, indicating an improvement in overall literacy levels as learners progress.

The post-reading assessment showcases significant progress across all grade levels. Grade 7 learners, who initially faced fundamental literacy issues, demonstrated remarkable improvement, with all learners reading independently and some capable of tutoring peers. Grade 8 and Grade 9 learners also made substantial strides, achieving independent reading status and showing enhancements in reading comprehension and engagement. The transition to independent reading is particularly noteworthy, indicating the program's success in fostering self-reliant reading habits and boosting learners' confidence.

Implications and insights from the post-reading assessment highlight the effectiveness of the 90-day reading program in addressing foundational literacy skills and enhancing overall reading abilities. The program's success in fostering independent reading, improving comprehension, and promoting engagement underscores its

significance in facilitating meaningful learning outcomes. However, ongoing challenges, such as pronunciation issues and occasional forgetfulness of long words, necessitate continuous practice and targeted interventions to reinforce learning.

Recommendations include the implementation of sustained reading programs, differentiated instruction to address individual learner needs, encouragement of parental involvement, regular assessments to monitor progress, and ongoing teacher training to utilize effective literacy improvement strategies. The post-reading assessment data provides compelling evidence of the positive impact of the 90-day reading program on learner improvement. Moving forward, sustained support, targeted interventions, and collaborative efforts will be essential to ensure all learners reach their full reading potential and achieve academic success.

Table 2. Satisfaction level in program experience

PROGRAM EXPERIENCE	MEAN	INTERPRETATION
The reading program was well-organized.	4.78	Strongly Satisfied
The materials provided in the program were helpful.	4.72	Strongly Satisfied
The reading sessions were conducted at convenient times.	4.72	Strongly Satisfied
The duration of each session was appropriate.	4.27	Strongly Satisfied
The program environment was conducive to learning.	4.72	Strongly Satisfied
The reading teachers were knowledgeable about the subject matter.	4.64	Strongly Satisfied
The reading teachers were approachable and supportive.	4.64	Strongly Satisfied
The reading teachers were clear and easy to follow.	4.53	Strongly Satisfied
The program included a variety of reading activities.	4.56	Strongly Satisfied
The pace of the program was suitable for my learning needs.	4.27	Strongly Satisfied
OVERALL WEIGHTED MEAN	4.59	Strongly Satisfied

The data presented in Table 2 offers a comprehensive insight into participants' satisfaction levels across various aspects of a reading program. Each aspect is rated on a scale from 0 to 5, with verbal interpretations provided to clarify the degree of satisfaction. Overall, the results indicate a high level of satisfaction among participants, with most aspects receiving ratings indicating strong satisfaction.

The highest-rated aspect of the program was its organization, with a weighted mean score of 4.78, indicating that participants were strongly satisfied with how the program was structured and planned. This suggests that the program's framework met or even exceeded participants' expectations, contributing positively to their overall experience. Similarly, the materials provided in the program received a high satisfaction rating of 4.72, indicating that participants found them to be helpful in enhancing their learning experience. This suggests that the resources provided were relevant, engaging, and supportive of the program's objectives.

The convenience of the reading sessions also received a high satisfaction rating of 4.72, suggesting that participants found the timing of the sessions to be suitable for their schedules. This indicates that the program was considerate of participants' time constraints and commitments, contributing to their overall satisfaction. Although slightly lower, the duration of each session still received a strong satisfaction rating of 4.27. This suggests that while participants may have found some sessions to be slightly lengthy, overall, they felt that the duration was appropriate and did not detract significantly from their experience.

The program environment was also highly rated, with a satisfaction score of 4.72. This suggests that participants found the learning environment to be conducive to their learning experience, which likely contributed to their overall satisfaction and engagement with the program. Additionally, participants expressed high satisfaction with the reading teachers, rating them highly in terms of knowledgeability (4.64), approachability and supportiveness (4.64), and clarity (4.53). These ratings suggest that participants felt supported and guided by knowledgeable and engaging teachers, which positively impacted their learning experience.

Moreover, the program's inclusion of a variety of reading activities received a strong satisfaction rating of 4.56, indicating that participants appreciated the diversity and engagement provided by the activities included in the program. Finally, while the pace of the program received a slightly lower satisfaction rating of 4.27, it still indicates strong satisfaction overall. This suggests that while most participants found the pace suitable for their learning needs, there may have been some variability in individual preferences regarding the program's pacing.

An overall weighted mean of 4.59 shows a strong satisfaction among program beneficiaries in terms of Program Experience. The data highlights the effectiveness of the reading program in meeting participants' needs and expectations, as evidenced by the high satisfaction ratings across various aspects. These findings have implications for program development, emphasizing the importance of continued attention to organization, resource provision, teacher quality, and program pacing to ensure a positive and engaging learning experience for participants.

Table 3. Satisfaction level in reading improvement

READING IMPROVEMENT	MEAN	INTERPRETATION
My reading skills have improved since joining the program.	4.67	Strongly Satisfied
I find it easier to understand what I read now.	4.27	Strongly Satisfied
I have increased my reading speed.	4.56	Strongly Satisfied
My ability to comprehend complex texts has improved.	4.0	Satisfied
I feel more confident when reading aloud.	4.50	Strongly Satisfied
I have developed better strategies for understanding new vocabulary.	4.61	Strongly Satisfied
I am more motivated to read because of the program.	4.67	Strongly Satisfied
My reading fluency has improved.	3.94	Satisfied
I can now identify and correct my reading mistakes more effectively.	4.78	Strongly Satisfied
My overall academic performance has improved due to better reading skills.	4.61	Strongly Satisfied
OVERALL WEIGHTED MEAN	4.46	Strongly Satisfied

Table 3 provides a detailed analysis of participants' satisfaction levels regarding the improvement in their reading skills after joining the program. The weighted mean scores, ranging from 0 to 5, are accompanied by verbal interpretations to elucidate the degree of satisfaction. Overall, the results indicate a strong sense of satisfaction among participants, with most aspects of reading improvement receiving high ratings.

Participants reported significant improvements in various aspects of their reading skills. The highest-rated statement was "My reading skills have improved since joining the program," with a weighted mean score of 4.67, indicating a strong sense of satisfaction. This suggests that participants perceived tangible progress in their reading abilities as a direct result of their participation in the program.

Similarly, participants expressed strong satisfaction with their increased ability to understand what they read (4.27), increased reading speed (4.56), and improved comprehension of complex texts (4.0). These findings indicate that the program effectively enhanced participants' fundamental reading skills, including comprehension and speed, contributing to their overall satisfaction and confidence in their reading abilities.

Participants also reported improvements in more specific aspects of reading, such as feeling more confident when reading aloud (4.50), developing better strategies for understanding new vocabulary (4.61), and being more motivated to read because of the program (4.67). These findings suggest that the program not only improved participants' technical reading skills but also positively impacted their attitudes and motivation towards reading, fostering a more positive and engaged reading experience.

However, some aspects of reading improvement received slightly lower satisfaction ratings. For example, participants rated their improvement in reading fluency at 3.94, indicating satisfaction but with room for further enhancement. Similarly, while participants expressed strong satisfaction with their ability to identify and correct reading mistakes (4.78), indicating effective skill development, there may still be opportunities for refinement in this area.

Lastly, participants reported a strong positive correlation between their improved reading skills and overall academic performance (4.61). This suggests that the benefits of the reading program extended beyond the realm of reading itself, positively impacting participants' academic achievements across various subjects.

An overall weighted mean of 4.46 shows a strong satisfaction of the program beneficiaries in terms of Reading Improvements. The data from Table 3 highlights the effectiveness of the reading program in improving participants' reading skills and fostering a positive reading experience. These findings have significant implications for program evaluation and development, highlighting the importance of continued focus on enhancing fundamental reading skills, fostering positive attitudes towards reading, and integrating reading skill

development with broader academic goals. Overall, the data reflects a successful outcome of the program in empowering participants with essential reading abilities and positively impacting their academic journey.

Lee, E. H., & Park, M. R. (2019) introduced an on/offline extensive reading program to enhance practical English skills. Over three years (2012-2014), six Korean and one native English teacher developed and implemented this program with middle school students. The program included weekly 45-minute reading sessions and evaluated students through vocabulary tests and satisfaction surveys. In 2014, 797 students participated, showing improved vocabulary and high satisfaction with the program. This study is notable for its extended duration and large participant size, confirming findings from previous research on the benefits of extensive reading.

Table 4. Satisfaction level in personal impact

PERSONAL IMPACT	MEAN	INTERPRETATION
My self-confidence has increased as a result of this program.	4.61	Strongly Satisfied
I feel more independent in my learning.	4.44	Strongly Satisfied
I enjoy reading more than I did before joining the program.	4.83	Strongly Satisfied
I feel less anxious about reading tasks.	4.06	Strongly Satisfied
The program has positively impacted other areas of my life.	4.61	Strongly Satisfied
I am more likely to pursue further education or training because of my improved reading skills.	4.56	Strongly Satisfied
I feel a greater sense of achievement due to my progress in the program.	4.22	Strongly Satisfied
My family and friends have noticed an improvement in my reading abilities.	4.69	Strongly Satisfied
I have developed a habit of reading regularly.	4.39	Strongly Satisfied
I am more engaged in classroom activities because of my improved reading skills.	4.39	Strongly Satisfied
OVERALL WEIGHTED MEAN	4.48	Strongly Satisfied

Table 4 presents an in-depth analysis of participants' perceptions regarding the personal impact of the reading program on various aspects of their lives. The weighted mean scores, alongside verbal interpretations, elucidate the extent of satisfaction across different dimensions. Overall, the results reveal a strong sense of satisfaction among participants, with the majority expressing strong satisfaction across all measured areas.

One significant outcome highlighted in the data is the positive effect of the program on participants' self-confidence. With a weighted mean score of 4.61, participants reported feeling significantly more confident as a result of their participation in the program. This suggests that the program not only improved participants' reading skills but also positively influenced their self-perception and belief in their abilities. Similarly, participants reported feeling more independent in their learning (4.44) and enjoying reading more than before joining the program (4.83). These findings indicate that the program fostered a sense of autonomy and enjoyment in learning, contributing to participants' overall satisfaction and engagement.

The program also had a notable impact on participants' emotional well-being, with participants reporting feeling less anxious about reading tasks (4.06) and experiencing a greater sense of achievement due to their progress (4.22). These results suggest that the program not only improved participants' technical reading skills but also alleviated negative emotions associated with reading difficulties, leading to a more positive and rewarding learning experience. Furthermore, participants reported that the program positively impacted other areas of their lives (4.61), suggesting that the benefits of improved reading skills extended beyond the realm of reading itself. Additionally, participants expressed a greater likelihood of pursuing further education or training as a result of their improved reading skills (4.56), highlighting the broader impact of the program on participants' educational and career aspirations.

The data also indicates that participants' improved reading skills were recognized by their family and friends, as evidenced by the high satisfaction rating for the statement "My family and friends have noticed an improvement in my reading abilities" (4.69). This suggests that the positive effects of the program were observable and acknowledged by those closest to the participants, further affirming the program's efficacy. Moreover, participants reported developing a habit of reading regularly (4.39) and increased engagement in classroom activities (4.39) as a result of their improved reading skills. These findings suggest that the program not only enhanced participants' reading abilities but also fostered a lifelong love for reading and active participation in learning activities.

The data from Table 4 indicates a highly successful outcome of the reading program, with participants experiencing significant personal growth and positive transformations in various aspects of their lives. These

findings highlights the importance of literacy programs in not only improving technical reading skills but also fostering confidence, independence, and a love for learning. The high satisfaction expressed by participants highlights the program's effectiveness in empowering individuals and positively impacting their personal and academic journeys.

Table 5. Satisfaction level in program feedback

PROGRAM FEEDBACK	MEAN	INTERPRETATION
I would recommend this program to other struggling readers.	4.17	Strongly Satisfied
The program met my expectations.	4.25	Strongly Satisfied
The feedback provided by the instructors was constructive.	4.44	Strongly Satisfied
The program content was relevant to my needs.	4.5	Strongly Satisfied
I was satisfied with the overall quality of the program.	4.5	Strongly Satisfied
I believe the program offers good value for its cost.	4.33	Strongly Satisfied
I feel the program length was adequate for significant improvement.	4.0	Strongly Satisfied
I appreciated the support provided by the program staff.	4.42	Strongly Satisfied
The program helped me set and achieve my reading goals.	4.53	Strongly Satisfied
I would be interested in participating in advanced reading programs offered by the same organization.	4.44	Strongly Satisfied
OVERALL WEIGHTED MEAN	4.36	Strongly Satisfied

Table 5 presents a comprehensive analysis of participants' feedback regarding the personal impact of the program, encompassing various dimensions of satisfaction and experience. With weighted mean scores ranging from 4.0 to 4.53, participants expressed a strong sense of satisfaction across all measured aspects, indicative of the program's effectiveness in meeting their needs and expectations. Participants overwhelmingly endorsed the program, with a strong willingness to recommend it to other struggling readers (4.17). This suggests a high level of satisfaction and confidence in the program's ability to benefit others facing similar challenges. Additionally, participants reported that the program met or exceeded their expectations (4.25), indicating that it effectively addressed their anticipated needs and objectives.

Constructive feedback provided by instructors received high praise from participants (4.44), highlighting the program's emphasis on supportive and helpful guidance. Similarly, participants found the program content to be highly relevant to their needs (4.5), suggesting that it was crafted to address their specific challenges and goals effectively. The overall quality of the program was rated highly (4.5), reflecting participants' satisfaction with its design, delivery, and outcomes. Moreover, participants perceived the program as offering good value for its cost (4.33), indicating that they considered it to be a worthwhile investment in their personal and academic development.

Participants also expressed satisfaction with the program's length, deeming it adequate for significant improvement (4.0). This suggests that the program duration was well-calibrated to facilitate meaningful progress without feeling overly rushed or prolonged. Furthermore, participants appreciated the support provided by program staff (4.42), indicating that they felt well-supported throughout their journey. The program was also instrumental in helping participants set and achieve their reading goals (4.53), highlighting its efficacy in empowering individuals to make tangible progress. Lastly, participants expressed a strong interest in participating in advanced reading programs offered by the same organization (4.44), indicating a desire for continued growth and development in their literacy skills.

The data from Table 4 indicates a highly positive reception of the program among participants, with strong endorsements and satisfaction across various dimensions. These findings underscore the program's effectiveness in meeting participants' needs, providing valuable support and guidance, and empowering individuals to achieve their reading goals. The high satisfaction expressed by participants reflects the program's impact and value, affirming its role in facilitating personal growth and academic success.

3.4 Overall Satisfaction Levels

Table 6 presents an overview of participants' overall satisfaction levels across four key criteria: Program Experience, Reading Improvement, Personal Impact, and Program Feedback. The weighted mean scores, ranging from 4.36 to 4.59, are accompanied by verbal interpretations to elucidate the degree of satisfaction. Overall, the data reveals a consistent pattern of strong satisfaction across all measured criteria, with participants expressing high levels of contentment with their experience in the program.

Table 6. Overall satisfaction level

CRITERIA	MEAN	INTERPRETATION
Program Experience	4.59	Strongly Satisfied
Reading Improvement	4.46	Strongly Satisfied
Personal Impact	4.48	Strongly Satisfied
Program Feedback	4.36	Strongly Satisfied
Overall Mean	4.47	Strongly Satisfied

In terms of Program Experience, participants reported a weighted mean score of 4.59, indicating a strong sense of satisfaction. This suggests that participants found the program well-organized, engaging, and effectively delivered, contributing positively to their overall experience. Similarly, participants reported a high level of satisfaction with Reading Improvement, with a weighted mean score of 4.46. This suggests that participants perceived tangible improvements in their reading skills as a result of their participation in the program, leading to increased confidence and proficiency in reading.

The Personal Impact of the program also received a high satisfaction rating, with a weighted mean score of 4.48. This indicates that participants experienced positive changes in various aspects of their lives, including increased confidence, independence, and enjoyment of reading, as well as reduced anxiety and improved academic performance. Participants' feedback on the program was overwhelmingly positive, with a weighted mean score of 4.36. This suggests that participants were highly satisfied with the program content, delivery, and support provided by program staff, as well as the value and impact of the program on their personal and academic growth.

The overall mean score of 4.47 reflects a consistently high level of satisfaction across all criteria, indicating that participants perceived the program as highly effective in meeting their needs and goals. These findings highlight the program's success in delivering a positive and impactful learning experience, fostering significant improvements in participants' reading skills, and empowering individuals to achieve their personal and academic aspirations. The strong satisfaction expressed by participants underscores the program's value and effectiveness in facilitating meaningful growth and development.

3.5 Program Improvement and Action Plan

**Figure 1.** Conceptual Framework of Project DARA for Program Improvement

TASK	TARGET/OBJECTIVES	STRATEGY	PERSONS INVOLVED	TIMELINE	EXPECTED OUTPUT
ENHANCED DIFFERENTIATED INSTRUCTION	Develop and implement differentiated lesson plans suited to individual reading levels and needs, aiming to increase student engagement and comprehension across all levels.	Develop lesson plan catering to the varying reading levels	Reading Teachers	Beginning of School Year	Increased engagement of program beneficiaries and improved reading levels across the spectrum
CONTINUOUS AND COMPREHENSIVE ASSESSMENTS	Increase the frequency of reading assessments to bi-weekly intervals, aiming to accurately track student progress and identify areas requiring intervention promptly.	Increase frequency of reading assessments	Reading Teachers	During the implementation of the Reading Program	More accurate tracking of progress and quicker interventions.
PROFESSIONAL DEVELOPMENT OF READING TEACHERS	Provide at least five professional development sessions covering topics such as differentiated instruction, technology integration, and literacy engagement strategies, with the goal of improving teacher proficiency in implementing effective reading instruction methods.	Schedule ongoing training sessions to reading teachers	School Head	During the implementation of the Reading Program	Increases implementation of best practices and improved student outcomes
PARENTAL INVOLVEMENT AND SUPPORT	Establish at least two family literacy workshops and distribute reading materials for parents, aiming to increase parental involvement in supporting their children's reading development at home.	Develop family literacy programs	School Head Reading Teachers	During the implementation of the Reading Program	Increased parental involvement and improved home support for literacy.
ADDRESSING SPECIFIC LITERACY CHALLENGES	Develop and implement intervention sessions focusing on pronunciation and long word retention, with the objective of improving these specific literacy skills among targeted students by at least one grade level.	Develop intervention sessions for pronunciation and long words.	Reading Teachers	During the implementation of the Reading Program	Improves pronunciation and retention of long words
IMPROVED LEARNING MATERIALS AND RESOURCES	Procure and diversify reading materials and digital resources to cater to various interests and reading levels, aiming to increase student engagement and exposure to diverse content.	Procure diverse reading materials and digital resources	School Head Procurement Members Reading Teachers	Before the implementation of the Reading Program	Increased engagement and exposure to diverse content.
ENCOURAGING A READING CULTURE	Organize at least three school-wide reading events and establish a peer tutoring program, with the objective of fostering a culture of reading and peer support, leading to increased participation and improved reading skills among students.	Organize reading initiatives and peer tutoring programs	School Head Reading Teachers	During the implementation of the Reading Program	Increased participation in reading events and improved peer support.
SUSTAINED SUPPORT AND FOLLOW-UP	Develop post-program support resources and implement a long-term monitoring plan within the next six months, aiming to ensure continued progress and improvement in reading skills even after the completion of the program, with the objective of maintaining or exceeding initial gains over time.	Develop post-program support resources and long-term monitoring plan	School Head Reading Teachers	After the implementation of the Reading Program	Continued progress even after program completion and sustained improvement over time.

4.0 Conclusion

The research findings from the pre-reading and post-reading assessments, along with participant satisfaction data, lead to several important conclusions regarding the effectiveness and impact of the 90-day reading program, Project DARA. This study makes significant contributions to the field of educational research by demonstrating the program's effectiveness in enhancing reading abilities across all grade levels. Learners exhibited substantial progress, transitioning to independent reading and showing marked improvements in comprehension and engagement. By addressing foundational literacy skills, particularly for Grade 7 learners who initially struggled with basic words, Project DARA effectively elevated literacy levels as learners advanced through grades, with challenges shifting towards longer and more complex words.

The study also highlighted a notable gender disparity, with a higher participation rate among female learners, especially in Grade 8. This finding underscores the need for gender-sensitive instructional strategies to ensure equitable support and intervention. Additionally, the program successfully fostered increased self-reliance among learners, as evidenced by their transition to independent reading and their ability to tutor peers. Enhanced engagement in reading activities and a more positive attitude towards reading were also observed, indicating that the program not only improved technical reading skills but also positively influenced learners' motivation and enjoyment.

Despite these successes, some ongoing challenges remain. Certain learners continued to face difficulties with pronunciation and occasionally forgetting long words, highlighting the need for continuous practice and targeted interventions to reinforce these areas. Nevertheless, participants expressed high satisfaction levels across all aspects of the program, including its organization, effectiveness in reading improvement, and personal impact. The positive feedback shows the program's success in meeting learners' needs and expectations, with broader impacts on self-confidence, independence in learning, and overall academic performance. The program also fostered a habit of regular reading and increased engagement in classroom activities.

Project DARA significantly improved the reading skills and overall literacy of learners, fostering independent reading habits and enhancing self-confidence. The program's success demonstrates the importance of sustained, multifaceted reading interventions and highlights areas for continuous improvement to support all learners effectively. Future studies could explore the long-term impacts of such reading programs, investigate the specific strategies that most effectively address pronunciation and retention challenges, and examine how to create interventions to different gender groups to ensure equitable literacy development.

5.0 Contributions of Authors

The author indicates equal contribution to each section. Joewe G. Sales was involved in the conception and design of the study, including the development of the research framework and methodology. He played a pivotal role in data collection and analysis, ensuring the accuracy and reliability of the findings. Additionally, Joewe G. Sales was responsible for drafting the manuscript, integrating the various components of the research, and ensuring coherence and clarity in the presentation of results. He actively participated in revising the manuscript, incorporating feedback from peer reviews and refining the document to enhance its quality and impact. Ultimately, Joewe G. Sales reviewed and approved the final version of the manuscript, ensuring it met the highest standards of academic rigor and integrity.

6.0 Funding

This work have not received any funding or financial grant from any funding agency.

7.0 Conflict of Interests

The author declares no conflicts of interest about the publication of this paper.

8.0 Acknowledgment

The completion of this research paper, entitled "Project DARA (Daily Reading Activities): Assessing Efficacy and Satisfaction," would not have been possible without the collaborative efforts and unwavering support of several individuals and groups.

First and foremost, the researcher extends his deepest gratitude to Ruzeel C. Nali, Dara Jane B. Pao, and Kerstie D. Catamin, the project implementers and dedicated reading teachers. Their commitment, expertise, and tireless efforts were instrumental in the successful implementation and completion of this research and project.

The researcher would also like to thank the ACLNHS teachers for their invaluable support throughout the project. Their encouragement and assistance played a crucial role in the smooth execution of Project DARA.

His heartfelt appreciation goes to the learners who participated in the program. Their enthusiasm, dedication, and progress have been the driving force behind this research. He is grateful for their active involvement and contribution to the success of Project DARA.

Lastly, researcher acknowledge the parents of the participating learners. Their consent and support were vital in allowing their children to be part of this project. The researcher appreciates their trust and cooperation, which greatly facilitated the achievement of our research goals.

To all who contributed to the success of Project DARA, the researcher extends his sincere thanks. This project has been a testament to the power of collaboration and shared dedication to improving literacy and education.

9.0 References

- Allington, R. L. (2013). What really matters when working with struggling readers. *The Reading Teacher*, 66(7), 520-530. <https://doi.org/10.1002/TRTR.1156>
- Ardila, A., Ostrosky-Solis, F., & Mendoza, V. U. (2000). Learning to read is much more than learning to read: A neuropsychologically based reading program. *Journal of the International Neuropsychological Society*, 6(7), 789-801. <https://doi.org/10.1017/S135561770067706X>
- Au, W. (2007). High-stakes testing and curricular control: A qualitative metasynthesis. *Educational Researcher*, 36(5), 258-267. <https://doi.org/10.3102/0013189X07306523>
- August, D., & Shanahan, T. (Eds.). (2006). *Developing literacy in second-language learners: Report of the National Literacy Panel on Language-Minority Children and Youth*. Lawrence Erlbaum Associates Publishers.
- Chapman, J. W., Tunmer, W. E., & Prochnow, J. E. (2000). Early reading-related skills and performance, reading self-concept, and the development of academic self-concept: A longitudinal study. *Journal of Educational Psychology*, 92(4), 703-708. <https://doi.org/10.1037/0022-0663.92.4.703>
- Guthrie, J. T., & Wigfield, A. (2000). Engagement and motivation in reading. In M. L. Kamil, P. B. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of Reading Research* (Vol. 3, pp. 403-422). Lawrence Erlbaum Associates Publishers.
- Hart, B., & Risley, T. R. (1995). *Meaningful differences in the everyday experience of young American children*. Paul H. Brookes Publishing.
- Kintsch, W. (1998). *Comprehension: A paradigm for cognition*. Cambridge University Press.
- Lee, E. H., & Park, M. R. (2019). A longitudinal study of improving learner's vocabulary & satisfaction through an extensive reading program. *응용언어학*, 35(4), 131-152. <https://doi.org/10.17154/kjal.2019.12.35.4.131>
- Mason, J. R., Jaime, S. J., Roque, N., Maharaj, A., Tenenbaum, G., & Figueroa, A. (2019). The effects of an acute bout of aerobic exercise on cognitive function in older adults. *Journal of Aging and Physical Activity*, 27(2), 256-263. <https://doi.org/10.1123/japa.2018-0101>
- Miguel Ramos-Henderson, Calderón, C., & Domic-Siede, M. (2022). Education bias in typical brief cognitive tests used for the detection of dementia in elderly populations with low educational level: A critical review. *Frontiers in Psychology*, 13, 1-9. <https://doi.org/10.3389/fpsyg.2022.859483>
- National Reading Panel. (2000). *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction*. National Institute of Child Health and Human Development.
- Neuman, S. B., & Celano, D. (2001). Access to print in low-income and middle-income communities: An ecological study of four neighborhoods. *Reading Research Quarterly*, 36(1), 8-26. <https://doi.org/10.1598/RRQ.36.1.1>
- Rideout, V. J., Foehr, U. G., & Roberts, D. F. (2010). *Generation M²: Media in the lives of 8-to 18-year-olds*. Henry J. Kaiser Family Foundation.
- Shaywitz, S. (2003). *Overcoming dyslexia: A new and complete science-based program for reading problems at any level*. Knopf.
- Slavin, R. E., Lake, C., Davis, S., & Madden, N. A. (2011). Effective programs for struggling readers: A best-evidence synthesis. *Educational Research Review*, 6(1), 1-26. <https://doi.org/10.1016/j.edurev.2010.07.002>

Political and Social Viewpoints of High School Students: How do Social Media Influencers, Cancel Culture, and Political Correctness affect these?

Zamir Adriel T. Ortega*, Richelle Louveine B. Puerto, Ghenard V. Fernandez,
Leahkim Asseren S. Mabalay, Quelvin Renzo G. Sugay, Joseph A. Villarama
Central Luzon State University, Nueva Ecija, Philippines

*Corresponding Author Email: zamiradriel.ortega@ushs.ph.education

Dated received: May 15, 2024

Date revised: June 19, 2024

Date accepted: June 27, 2024

Originality: 98%

Grammarly Score: 99%

Similarity: 2%

Recommended citation:

Ortega, Z.A., Puerto, R.L., Fernandez, G., Mabalay, L.A., Sugay, Q.R., Villarama, J. (2024). Political and social viewpoints of high school students: how do social media influencers, cancel culture, and political correctness affect these? *Journal of Interdisciplinary Perspectives*, 2(8), 212-216. <https://doi.org/10.69569/jip.2024.0216>

Abstract. Social media usage, especially among young people, has become intertwined with daily life. High school students, who are heavily exposed to social media, are influenced by influencers, cancel culture, and political correctness. This study explored how these factors affect students' perspectives on political and social issues. A purposive sampling technique was used to amass 12 participants. Data gathering used the administration of semi-structured interviews, recording audio, and obtaining written responses. Thematic analysis was used in analyzing the transcription of the recordings from the interview. The findings revealed that political correctness significantly influences students' viewpoints, while influencers and cancel culture have a lesser impact. Participants emphasized the importance of research, personal growth, and maturity over cancel culture and influencers. Further research is needed, involving older participants and diverse settings, due to limited literature on this topic.

Keywords: Cancel culture; Political influence; Social media influence; Sociopolitical views.

1.0 Introduction

The Internet has become more intertwined with our daily lives even in socialization. This is why social media has nearly become inseparable from us human beings. Social Media consists of online platforms where people can not only share moments in their lives, but also their thoughts and opinions. These opinions however are also accompanied by opposing ideas from other people, but more so by social media influencers who not only have a large following, but also engage in complex roles such as being online opinion leaders (Balaban & Mustatea, 2019), where these people could heavily influence others along with their respective opinions. However, when the opinion of one differs from the majority group, that person is often shunned; creating the term and conception of what we call cancel culture.

Cancel culture has been a topic of extensive discourse on social media for numerous years, tracing its roots as far back as 2015 (Deol, 2022). The term "Cancel Culture" refers to as removal of support for a certain individual who has behaved in a manner deemed inappropriate or troublesome in the world of social media, entertainment, or consumerism (Mueller, 2021), or simply for having an opinion that is often deemed different to the opinion of majority groups, giving rise to political correctness. Political Correctness goes beyond just limiting what people can say. It encompasses a broader transformation in how individuals and groups are perceived, a shift in culture, and a change in the way on how meaning is constructed (Schwartz 2018). The development of both cancel culture and political correctness is alleged to have marginalized dissenters, curtailed academic independence, fostered conformism, and suffocated genuine intellectual debate (Norris 2020). The development of the two has also

exerted more pressure towards Americans to conceal their viewpoints as compared to the McCarthy era (Strossen 2020).

The influence of culture and political correctness on students' opinions can be rather complex, with the utilization of the former as a powerful tool that enables people to have control on their personal and social behaviours, beliefs, and principles (Burmah, 2021). These movements can encourage students to be more conscious of how their words and actions can affect others, promoting inclusivity and preventing the spread of harmful beliefs. However, for some students, cancel culture, and political correctness can feel like a form of censorship or an attempt to stifle their ability to express their thoughts and opinions freely. Sometimes, people feel anxious about expressing their thoughts or opinions because they are apprehensive about being criticized or ridiculed (Roth 2019). This study determined the extent to which social media influencers, cancel culture, and political correctness impact students' perspectives on political and social problems. This holds significance as it provides insight into the attitudes and beliefs held by upcoming generations of citizens and voters. Social Media has a significant role when it comes to influencing high school students, in particular, their viewpoints regarding politics and social issues. This study possesses significance as it helps in determining the degree of change in viewpoints brought upon by influencers. It also shows how cancel culture and political correctness can affect the viewpoint of high school students through reasons such as fear of being shunned by the public.

2.0 Methodology

2.1 Research Design

This study aimed to analyze how social media influencers, cancel culture, and political correctness affect the political and social viewpoints of high school students. As such, this study utilized qualitative design, which allows exploration of a social phenomenon and to generate a hypothesis that is investigated qualitatively (Vandeweerd et al., 2018) and comprehend unique experiences that cannot be fully understood from a single perspective, presenting itself as a growing and multi-disciplinary field of study. Specifically, this study utilized case study as its research design. A case study thoroughly investigates and analyzes a specific instance or scenario, such as a person, organization, community, event, or situation (Hassan, 2023).

2.2 Research Participants

As this study has a target participant from a specific demographic, a purposive sampling technique was used to amass interviewees. Twelve (12) participants were interviewed for the study. Participants were chosen according to the following criteria; age, length of social media exposure, and information regarding the research's topic. The age of participants must fall between the range of 14 to 16 years old. The participants were also chosen according to their exposure to social media which is at least 5 hours of exposure. Lastly, the participants must have some idea regarding the topics discussed in the study.

2.3 Research Instrument

The researchers utilized semi-structured interviews. Documents and audio recordings served as additional information to substantiate the data collected during the interview process.

The research instrument consists of two parts. Part I of the research instrument consists of participant's demographic data. Part II of the research instrument consists of 3 guide questions for the interview. The instrument-guide questions were checked and validated by three experts composed of social science, language, and research teachers.

2.4 Data Gathering Procedures

Data gathering used the administration of semi-structured interviews, recording audio, and obtaining written responses. Each interview was conducted in school premises with each session lasting no more than 35 minutes. Participants were given an information missive containing the objectives of the study and were given time to review their study related privileges during the interviews. The data collected are examined to address the research queries and to identify the commonalities and distinctions among the individuals who participated in the study.

2.5 Data Analysis

Thematic analysis was used in analyzing the transcription of the recordings from the interview. Data triangulation and cross-checking was observed to secure the accuracy, reliability, and validity of the results.

2.6 Ethical Considerations

This research has been evaluated and ethically cleared by the Central Luzon State University (CLSU) Ethics Research Committee (ERC) with approval code 2023-166 on March 14, 2023. Informed consent and data privacy were secured prior to the conduct of onsite interviews.

3.0 Results and Discussion

Four themes emerged from analyzing the data:

Theme 1: Cancel Culture and Its Effects

Eminence of cancel culture has been highlighted by the results of this study among high school students in which an appreciable proportion acknowledged their vulnerability towards being canceled and illustrated concerns about its deleterious outcomes. Although a handful refused to be afraid, most either displayed ambiguity over whether their encounters fell into the category or recognized individuals who endured cancellation themselves. Considering verdicts on cancel culture, several pupils voiced disapproval citing harmful aftermaths accompanying it.

A high school student shared a similar view, stating that canceling someone who is being followed is not the right approach. According to the student, there are other means of educating such an individual and correcting their mistakes instead of outrightly bashing and insulting them publicly. A participant has stated *"I think it's not right to cancel a person just because you're following them, because there are other ways to educate them, and it's possible to correct their mistakes instead of bashing and insulting them like that."* This comment highlights one of the primary criticisms against cancel culture which involves public shaming. Canceling individuals without considering alternative measures for tackling problematic behavior may not be the most effective approach. A better strategy would be to provide education and information about the issue in question.

This is supported by the study conducted by Molochko & Hryniova(2022), where they stated that *"The attitude towards cancel culture in modern societies is rather ambiguous. The consequence of this is the appearance of supporters and critics of this phenomenon. Extending cancel culture to the political struggle carries certain risks associated with the need for excessive control over freedom of thought and speech. 'Cancellation' is used not only as a tool for manifesting a position on social media, but also becomes a tool in manipulative campaigns and information wars."*

Theme 2: Social Media Influencers and Their Impacts

The results show that social media influencers have greatly affected high school students' political and social viewpoints. Some teenagers believe these influencers' opinions without question, while others approach controversial topics with hesitation. The impact of these influential figures extends beyond individual students, affecting the views of their peers as well. Students reported that they have become more informed about topics such as the LGBTQIA+ community since interactions became virtual due to the pandemic. One participant said, *"No, because I do my own research. I do have my own beliefs and principles, but I get their side, I understand their side, where they are coming from, and it makes me think more, think deeper, understand the situation, and know which side I will choose."*

According to an article written by Bareth (2023), *"Influencers' curated and edited content can create a distorted view of reality, leading young people to feel that they are not measuring up to their peers or to the idealized version of themselves that they see online."*

Theme 3: Political Correctness and Their Stand

Results show that some participants support political correctness as a means of fairness and equality. They believe that it is only right to enforce political correctness to enable inclusivity in situations where there is an apparent exclusion of minority groups. Others believe that it is appropriate to strive for political correctness most of the time but is inappropriate if it is done not for the inclusion of minority groups but instead for the profit and

avoidance of possible consequences for their company. However, some participants changed their opinions to appear politically correct due to peer influence. The influence of political correctness varied among participants.

One of the participants has expressed during the interview that *“I think if companies are being politically correct to include minority groups, then I think it’s okay, but if they were only being politically correct for profit then no, I don’t think it’s right.”* This is one of the few similar responses that expressed a division and uncertainty in political correctness.

The results which showed a division in opinions of the subjects regarding political correctness are backed by the study conducted by Yuwana & Cathrine (2021), where they have concluded that *“There are some problems that come from the idea of labelling people based on their identity which does not sit well for some people thus making people have a resistant attitude towards it. On the other hand, political correctness brings up some issues that are often overlooked by many people like marginalized people and minorities in American society”*.

Theme 4: Maturity and Education as a Factor

Some students have explicitly stated that maturity and education have a much larger influence on the changes in their opinion compared to cancel culture. They have stated that their opinions changed over time and have also been changed due to them becoming more aware regarding socio-political problems.

A participant have stated that *“Maturity for me is ranked higher in terms of its influence compared to cancel culture,”* further signifying that maturity has a larger effect compared to cancel culture.

4.0 Conclusion

The viewpoints of students were heavily affected by social media influencers and political correctness, but not so much by cancel culture. This is because the students also expressed growth and maturity as a more prevailing factor over cancel culture. The students when asked on which has affected their opinions more, they have stated that maturity has affected and altered their opinion more compared to cancel culture.

5.0 Contributions of Authors

To complete this research project, all authors contributed equally from the conceptualization to the publication of this study.

6.0 Funding

This research did not receive any particular financial assistance of any kind.

7.0 Conflict of Interests

The authors affirm that they do not have any competing interest.

8.0 Acknowledgment

The authors would like to extend their heartfelt gratitude to the CLSU Ethics Research Committee for checking the ethical standards of their study. Likewise, all thanks to Assistant Professor Joseph Agbuya Villarama, the team’s research adviser and co-author, for his support and guidance.

9.0 References

- Abbas, L., Fahmy, S., Ayad, S., Ibrahim, M. And Ali, A. (2022). Tiktak Intifada: Analyzing Social Media Activism Among Youth. *Online Media And Global Communication*, 1(2), 287-314. <https://doi.org/10.1515/Omgc-2022-0014>
- Abi-Jaoude, E., Naylor, K. T., And Pignatiello, A. (2020). Smartphones, Social Media Use And Youth Mental Health. *Cmaj*, 192(6), E136-E141.
- Adegbeye, L. (2020). Influence Of Social Media On The Social Behavior Of Students As Viewed By Primary School Teachers In Kwara State, Nigeria. *Mimbar Sekolah Dasar*, 7(1), 43-53. <https://doi.org/10.17509/Mimbar-Sd.v7i1.23479>.
- Allcott, H., Braghieri, L., Eichmeyer, S., And Gentzkow, M. (2020). The Welfare Effects Of Social Media. *American Economic Review*, 110(3), 629-676.
- Alfirević, N., Arslanagić-Kalajdžić, M., And Lep, Ž. (2023). The Role Of Higher Education And Civic Involvement In Converting Young Adults' Social Responsibility To Prosocial Behavior. *Scientific Reports*, 13(1), 1-11.
- Anderson, M., And Jiang, J. (2018). *Teens, Social Media And Technology 2018*. Pew Research Center, 31(2018), 1673-1689.
- Balaban, D., And Mustăţea, M. (2019). Users' Perspective On The Credibility Of Social Media Influencers In Romania And Germany. *Romanian Journal Of Communication And Public Relations*, 21(1), 31-46. <https://doi.org/10.21018/Rjcp.2019.1.269>
- Ballard, D., Allen, B., Ashcraft, K., Ganesh, S., Mcleod, P., And Zoller, H. (2020). When Words Do Not Matter: Identifying Actions To Effect Diversity, Equity, And Inclusion In The Academy. *Management Communication Quarterly*, 34(4), 590-616.
- Bail, C. A., Argyle, L. P., Brown, T. W., Bumpus, J. P., Chen, H., Hunzaker, M. F., ... And Volfovsky, A. (2018). Exposure To Opposing Views On Social Media Can Increase Political Polarization. *Proceedings Of The National Academy Of Sciences*, 115(37), 9216-9221.
- Barth, H. (2023, February 23). The Impact Of Social Media Influencers On Young Minds: Navigating The Positive And Negative Effects. *Times Of India Blog*. <https://timesofindia.indiatimes.com/Readersblog/Drhemanthbarth/The-Impact-Of-Social-Media-Influencers-On-Young-Minds-Navigating-The-Positive-And-Negative-Effects-50818/>.
- Beiner, A. (2021). *Sleeping Woke: Cancel Culture And Simulated Religion*. Medium.
- Bodrunova, S. S., Blekanov, I., Smoliarova, A., And Litvinenko, A. (2019). Beyond Left And Right: Real-World Political Polarization In Twitter Discussions On Inter-Ethnic Conflicts. *Media And Communication*, 7, 119-132.
- Boulianne, S. (2019). Revolution In The Making? Social Media Effects Across The Globe. *Information, Communication And Society*, 22(1), 39-54. <https://doi.org/10.1080/1369118X.2017.1353641>
- Buda, G., Lukoševičiūtė, J., Salgiūnaitė, L., And Smigelskas, K. (2021). Possible Effects Of Social Media Use On Adolescent Health Behaviors And Perceptions. *Psychological Reports*, 124(3), 1031-1048.
- Burmah, L. S. (2021). *The Curious Cases Of Cancel Culture*.
- Chiou, R. (2020). We Need a Deeper Understanding About The Neurocognitive Mechanisms Of Moral Righteousness In An Era Of Online Vigilantism And Canceled Culture. *Ajob Neuroscience*, 11(4), 297-299.
- Cook, C. And Patel, A. And Guishan, M. And Wahn, D. (2021). Whose Agenda Is It Anyway: An Exploration Of Cancel Culture And Political Affiliation In The United States. *Sn Social Sciences*. 1. 10.1007/s43545-021-00241-3.
- Da Silva, J. A. T. (2021). How To Shape Academic Freedom In The Digital Age? Are The Retractions Of Opinionated Papers a Prelude To “Cancel Culture” In Academia?. *Current Research In Behavioral Sciences*, 2, 100035.
- Deol, A. (2022). *Cancel Culture Or Consequence Culture: Its Pervasive Presence In The Book Publishing And Entertainment Industry And Its Effects On Social Media*. <https://doi.org/10.17615/Pb0h-Tv36>
- Dershowitz, A. (2020). *Cancel Culture: The Latest Attack On Free Speech And Due Process*. Simon And Schuster.

- Enyedi, Z. (2020). Right-Wing Authoritarian Innovations In Central And Eastern Europe. *East European Politics*, 36(3), 363-377.
- Erfani, S. S., And Abedin, B. (2018). Impacts Of The Use Of Social Network Sites On Users' Psychological Well-Being: A Systematic Review. *Journal Of The Association For Information Science And Technology*, 69(7), 900-912.
- Farivar, S., Wang, F., And Turel, O. (2022). Followers' Problematic Engagement With Influencers On Social Media: An Attachment Theory Perspective. *Computers In Human Behavior*, 133, 107288.
- Felaco, C. And Nocero, J. And Parola, J. And Tofani, R. (2022). I Correct Or Canceling You: Political Correctness And Cancel Culture On Social Media – The Case Of Twitter Communication In Italy. 10.4018/978-1-6684-7472-3.Ch023.
- Flensner, K. K., And Von Der Lippe, M. (2019). Being Safe From What And Safe For Whom? A Critical Discussion Of The Conceptual Metaphor Of 'Safe Space'. *Intercultural Education*, 30(3), 275-288.
- Franchina, V., And Coco, G. L. (2018). The Influence Of Social Media Use On Body Image Concerns. *International Journal Of Psychoanalysis And Education*, 10(1), 5-14.
- Fuente, P. (2019). On Political Correctness. *Social Sciences*, 8(10), 277. Mdpi Ag. <http://dx.doi.org/10.3390/Socsci8100277>
- Garrett, R. K. (2019). Social Media's Contribution To Political Misperceptions In Us Presidential Elections. *Plos One*, 14(3), e0213500.
- Ghani, A. N. H. A., And Rahmat, H. (2023). Confirmation Bias In Our Opinions On Social Media: A Qualitative Approach. *Journal Of Communication, Language And Culture*, 3(1), 47-56.
- Goanta, C., And Ranchordás, S. (2020). The Regulation Of Social Media Influencers: An Introduction. In *The Regulation Of Social Media Influencers* (Pp. 1-20). Edward Elgar Publishing.
- Gómez, A. R. (2019). Digital Fame And Fortune In The Age Of Social Media: A Classification Of Social Media Influencers. *Adresearch: Revista Internacional De Investigación En Comunicación*, (19), 8-29.
- Goodwin, A., Joseff, K., And Woolley, S. C. (2020). Social Media Influencers And The 2020 Us Election: Paying 'Regular People' For Digital Campaign Communication. *Center For Media Engagement*.
- Harff, D. And Schmuck, D. (2023). Influencers As Empowering Agents? Following Political Influencers, Internal Political Efficacy And Participation Among Youth. *Political Communication*. 40. 1-26. 10.1080/10584609.2023.2166631.
- Herrman, J. (2020). Tiktok Is Shaping Politics. But How. *The New York Times*, 28.
- Hooks, A. M. (2020). Cancel Culture: Posthuman Hauntologies In Digital Rhetoric And The Latent Values Of Virtual Community Networks (Doctoral Dissertation, The University Of Tennessee At Chattanooga).
- Intyaswati, D. (2021). Political Learning Through A Social Media Network. *Webology*. 19. 19-36. 10.14704/Web/V19I1/Web19002.
- Jungheer, A., Rivero, G., And Gayo-Avello, D. (2020). Retooling Politics: How Digital Media Are Shaping Democracy. Cambridge University Press.
- Jusay, J. And Lababit, J. And Moralina, L. And Ancheta, J. R. (2022). We Are Cancelled: Exploring Victims' Experiences Of Cancel Culture On Social Media In The Philippines. *Rupkatha Journal On Interdisciplinary Studies In Humanities*. 14. 2022. 10.21659/Rupkatha.v14n4.04.
- Kalina, P. (2020). Performative Allyship. *Technium Soc. Sci. J.*, 11, 478.
- Kaskazi, A., And Kitzie, V. (2023). Engagement At The Margins: Investigating How Marginalized Teens Use Digital Media For Political Participation. *New Media And Society*, 25(1), 72-94.
- Katsura, R. (2020). Original Paper The Importance Of Studying And Education People Concerning International Peace And Wellbeing Searching For New Paradigms For Peace And Wellbeing In The World Community. *World*, 7(2).
- Kennedy, H., Matyasic, S., Schofield Clark, L., Engle, C., Anyon, Y., Weber, M., ... And Nisle, S. (2020). Early Adolescent Critical Consciousness Development In The Age Of Trump. *Journal Of Adolescent Research*, 35(3), 279-308.
- Kiatkawin, K. And Lee, S. K. (2022). Social Media Influencers. 10.4337/9781800377486.Social.Media.Influencers.
- Kocurová-Giurgiu, I. (2021). Cancel Culture As Perceived And Encouraged In Academia. An Exploration Of How Mob Attitudes On Social Media Promote Censorship And The End Of Open Dialogue. *Korhonen, L. (2021). The Good, The Bad And The Ugly Of Children's Screen Time During The Covid-19 Pandemic. Acta Paediatrica (Oslo, Norway: 1992)*, 110(10), 2671.
- Kubin, E., And Von Sikorski, C. (2021). The Role Of (Social) Media In Political Polarization: a Systematic Review. *Annals Of The International Communication Association*, 45(3), 188-206.
- Kursun, A. And Türkdoğan Gönün, C. (2022). "Influencer": Do Social Media Influencers Influence Health Behavior? *Giresun Üniversitesi İktisadi Ve İdari Bilimler Dergisi*. 10.46849/Guiibd.1115200.
- Ledwich, M., And Zaitsev, A. (2019). Algorithmic Extremism: Examining Youtube's Rabbit Hole Of Radicalization. *Arxiv Preprint Arxiv:1912.11211*.
- Luther, R. (2022). What Happens To Those Who Exit Jehovah's Witnesses: An Investigation Of The Impact Of Shunning. *Pastoral Psychology*, 1-16.
- Macedo, D. (2019). Decolonizing Foreign Language Education: The Mismatching Of English And Other Colonial Languages. *Ny: Routledge*.
- Marsh, H. (2022). Cancel Culture Conundrum. *Honors College*. 761.
- Martinez, C., And Olsson, T. (2019). Making Sense Of Youtubers: How Swedish Children Construct And Negotiate The Youtuber Misslisibell As a Girl Celebrity. *Journal Of Children And Media*, 13(1), 36-52.
- Merkley, L. (2020). How Social Media Impacts Political Views. *The Daily Universe*.
- Molochko, P., And Hryniova, D. (2022). Cancel Culture: Leverage Tool In Political Struggle. *Mediaforum : Analytics, Forecasts, Information Management*. 84-106. 10.31861/Mediaforum.2022.10.84-106.
- Mooney, A., And Evans, B. (2018). *Language, Society And Power: An Introduction*. Routledge.
- Moss, J. (2020). Political Correctness And The Alt-Right: The Development Of Extreme Political Attitudes. *Plos One*. 15. 10.1371/Journal.Pone.0239259.
- Mueller, T. S. (2021). Blame, Then Shame? Psychological Predictors In Cancel Culture Behavior. *The Social Science Journal*, 1-14. <https://doi.org/10.1080/03623319.2021.1949552>
- Nandagiri, V., And Philip, L. (2018). Impact Of Influencers From Instagram And Youtube On Their Followers. *International Journal Of Multidisciplinary Research And Modern Education*, 4(1), 61-65.
- Ng, E. (2020). No Grand Pronouncements Here... Reflections On Cancel Culture And Digital Media Participation. *Television And New Media*, 21(6), 621-627. <https://doi.org/10.1177/1527476420918828>
- Norris, P. (2020). Closed Minds? Is a 'Cancel Culture' Stifling Academic Freedom And Intellectual Debate In Political Science? <http://dx.doi.org/10.2139/ssrn.3671026>
- Nouri, M. (2018). *The Power Of Influence: Traditional Celebrity Vs Social Media Influencer*.
- Orben, A. (2020). Teenagers, Screens And Social Media: a Narrative Review Of Reviews And Key Studies. *Social Psychiatry And Psychiatric Epidemiology*, 55(4), 407-414.
- O'Reilly, M. (2020). Social Media And Adolescent Mental Health: The Good, The Bad And The Ugly. *Journal Of Mental Health*, 29(2), 200-206.
- Parker, K. (2019). The Growing Partisan Divide In Views Of Higher Education. *Few Research Center*, 19.
- Pearson, D. H. (2021). Accountability, Exile And Social Media: An Analysis Of Contemporary Online Public Shaming Practices And "Cancel Culture".
- Pham, M. K. (2022). Cancel Culture In Vietnam And Factors That Influence People's Attitudes On Misconduct By Public Figures (Doctoral Dissertation, Bce Kommunikáció És Szociológia Intézet).
- Presado, M. H., Baixinho, C. L., And Oliveira, E. S. F. D. (2021). Qualitative Research In Pandemic Times. *Revista Brasileira De Enfermagem*, 74. <https://doi.org/10.1590/0034-7167.202174Suppl101>
- Raby, R., Caron, C., Thewissens-Leblanc, S., Pioletta, J., And Mitchell, C. (2018). Vlogging On Youtube: The Online, Political Engagement Of Young Canadians Advocating For Social Change. *Journal Of Youth Studies*, 21(4), 495-512. <https://doi.org/10.1080/13676261.2017.1394995>
- Razib, M. H. And Pinky, F. (2023). Use Of Social Media For Political Communication Among University Students In Bangladesh. *Asian Journal Of Education And Social Studies*. 54-64. 10.9734/Ajess/2023/v39i3849.
- Reinikainen, H., Tan, T. M., Luoma-Aho, V., And Salo, J. (2021). Making And Breaking Relationships On Social Media: The Impacts Of Brand And Influencer Betrayals. *Technological Forecasting And Social Change*, 171, 120990.
- Roblek, V., Mesko, M., Dimovski, V. And Peterlin, J. (2019), "Smart Technologies As Social Innovation And Complex Social Issues Of The Z Generation", *Kybernetes*, Vol. 48 No. 1, Pp. 91-107. <https://doi.org/10.1108/K-09-2017-0356>
- Rogers, R. (2020). Deplatforming: Following Extreme Internet Celebrities To Telegram And Alternative Social Media. *European Journal Of Communication*, 35(3), 213-229.
- Romano, A. (2019). Why We Can't Stop Fighting About Cancel Culture. *Vox Magazine*.
- Rosenblum, M., Schroeder, J., And Gino, F. (2020). Tell It Like It Is: When Politically Incorrect Language Promotes Authenticity. *Journal Of Personality And Social Psychology*, 119(1), 75-103. <https://doi.org/10.1037/psp0000206>
- Roth, M. S. (2019). *Safe Enough Spaces: A Pragmatist's Approach To Inclusion, Free Speech, And Political Correctness On College Campuses*. Yale University Press.
- Sanni, A. (2023). Role Of Social Media Influencers In The Endears Protest In Lagos. 4. 23-29.
- Saint-Louis, H. (2021). Understanding Cancel Culture: Normative And Unequal Sanctioning. *First Monday*. 26. 10.5210/Fm.v26i7.10891.
- Schmuck, D., Hirsch, M., Stevic, A., And Matthes, J. (2022). Politics—Simply Explained? How Influencers Affect Youth's Perceived Simplification Of Politics, Political Cynicism, And Political Interest. *The International Journal Of Press/Politics*, 27(3), 738-762.
- Schwartz, H. S. (2018). *Society Against Itself: Political Correctness And Organizational Self-Destruction*. Routledge.
- Scott, A. (2021). Are Boycotts, Shunning, And Shaming Corrupt?, *Oxford Journal Of Legal Studies*, Volume 41, Issue 4, Winter 2021, Pages 987-1011, <https://doi.org/10.1093/Ojls/Gqab015>
- Sharma, M. (2021). A Dissertation On Impact Of Social Media On Journalism (Doctoral Dissertation).
- Shuraeva, L. And Korinets, A. (2023). Social Effect Of "Cancel Culture" On The Digital Environment: The Case Of Generations Y And Z. *Vestnik Universiteta*. 1. 248-256. 10.26425/1816-4277-2022-12-248-256.
- Simkhovich, V. And Naumau, D. (2022). Cancelling As a Social Phenomenon: Theoretical Aspect. *Journal Of The Belarusian State University. Sociology*. 71-79. 10.33581/2521-6821-2022-4-71-79.
- Simons, G. (2021). Role Of Social Media In Amplifying Neo-Liberal Cancel Culture. *Turkish Policy Quarterly*, 20(3), 71-79.
- Strossen, N. (2020). Resisting Cancel Culture: Promoting Dialogue, Debate, And Free Speech In The College Classroom. Perspectives On Higher Education. American Council Of Trustees And Alumni.
- Su, B. C., Wu, L. W., Chang, Y. Y. C., And Hong, R. H. (2021). Influencers On Social Media As References: Understanding The Importance Of Parasocial Relationships. *Sustainability*, 13(19), 10919.
- Sunstein, C. R. (2019). *How Change Happens*. Mit Press.
- Suuronen, A. And Reinikainen, H. And Borchers, N. And Strandberg, K. (2021). When Social Media Influencers Go Political: An Exploratory Analysis On The Emergence Of Political Topics Among Finnish Influencers. *Javnost - The Public*. 29. 1-17. 10.1080/13183222.2021.1983367.
- Taillon, B. J., Mueller, S. M., Kowalczyk, C. M., And Jones, D. N. (2020). Understanding The Relationships Between Social Media Influencers And Their Followers: The Moderating Role Of Closeness. *Journal Of Product And Brand Management*, 29(6), 767-782.
- Tandoc, E. C., Tan Hui Ru, B., Lee Huei, G., Min Qi Charlyn, N., Chua, R. A., And Goh, Z. H. (2022). #Cancelculture: Examining Definitions And Motivations. *New Media And Society*, 0(0). <https://doi.org/10.1177/1461448221077977>
- Trumper, C. (2022). Cancel Culture: Who Or What Will Be Next?
- Tsao, S. F., Chen, H., Tisseverasinghe, T., Yang, Y., Li, L., And Butt, Z. A. (2021). What Social Media Told Us In The Time Of Covid-19: a Scoping Review. *The Lancet Digital Health*, 3(3), e175-e194.
- Vandeweerd, J. M., Bardies, J., Desbrosse, F., Sensenbrenner, A., And Valon, F. (2018). Writing An Article: Qualitative Research. *Pratique Vétérinaire Equine*, 50(199), 52-55.
- Velasco, J. C. (2020). You Are Canceled: Virtual Collective Consciousness And The Emergence Of Canceled Culture As Ideological Purging. *Rupkatha Journal On Interdisciplinary Studies In Humanities*, 12(5), 48-68.
- Von, H. And Verlag, H. And Thiele, M. (2021). Political Correctness And Cancel Culture - a Question Of Power!. 4. 50-57. 10.1453/2569-152X-12021-11282-En.
- Vulkko, V. (2021). Social Media Influencers And Their Social Responsibility: Factors That Affect Micro Influencers' Decisions To Collaborate With a Company.
- Wirth, K. (2020). Cyberbullying: Social Media Dangers To Teens And Young Adults (Doctoral Dissertation, Utica College).
- Yuwana, A. And Cathrine, W. (2021). Exploring Of The Use Of Political Correctness In World. *Ideas: Journal On English Language Teaching And Learning, Linguistics And Literature*. 9. 138-146. 10.24256/Ideas.v9i2.1927.
- Zhuravskaya, E., Petrova, M., And Enikolopov, R. (2020). Political Effects Of The Internet And Social Media. *Annual Review Of Economics*, 12, 415-438.
- Zhu, A. Y. F., Chan, A. L. S., And Chou, K. L. (2019). Creative Social Media Use And Political Participation In Young People: The Moderation And Mediation Role Of Online Political Expression. *Journal Of Adolescence*, 77, 108-117.
- Zimmermann, D., Noll, C., Gräßer, L. Et Al. Influencers On Youtube: a Quantitative Study On Young People's Use And Perception Of Videos About Political And Societal Topics. *Curr Psychol* 41, 6808-6824 (2022). <https://doi.org/10.1007/s12144-020-01164-7>

Fuel Price Increase: Unveiling the Torments and Agonies of the Transportation Sector – Basis for Policy Formation

Cydeah Aldic J. Conchas*, Roel Jr. D. Apas

Davao del Sur State College, Davao del Sur, Philippines

*Corresponding Author Email: conchasaldic20@gmail.com

Date received: May 28, 2024

Date revised: June 19, 2024

Date accepted: June 28, 2024

Originality: 90%

Grammarly Score: 99%

Similarity: 10%

Recommended citation:

Conchas, C.A., & Apas, R. (2024). Fuel price increase: unveiling the torments and agonies of the transportation sector – basis for policy formation. *Journal of Interdisciplinary Perspectives*, 2(8), 217-231.

<https://doi.org/10.69569/jip.2024.0240>

Abstract. This study aimed to investigate the impact of oil price hikes on the transportation sector in Padada, Davao del Sur. Utilizing a phenomenological approach and qualitative design, purposive sampling was conducted among fourteen participants from various transportation sectors. Data was analyzed through Data Reduction, Data Display, and Conclusion Verification, with assistance from a data analyst. The findings indicate that rising fuel prices significantly affect livelihoods and lifestyles, highlighting the broader impact of global issues on local communities. Additionally, increased oil prices have led to fare adjustments, impacting passengers' monthly budgets. The study suggests that government programs to support local transportation owners and drivers and initiatives for domestic oil exploration could mitigate these effects. Budget constraints and fuel price stabilization policies were also identified as relevant considerations for public administration. Consequently, it is recommended that the Local Government Unit of Padada, Davao del Sur, propose policies to address the impact of oil price increases on the transportation sector. Additionally, revising and strengthening Municipality Ordinance 003, Series of 2009, which allows for passenger fare adjustments based on daily oil prices, is advised.

Keywords: Fuel price increase; Transportation sector.

1.0 Introduction

One of the most vital raw materials the world has ever had is oil. An oil price increase could really affect the different transportation sectors. Once it happens, the effects will be too visible, the price of the goods in the market will skyrocket, the fare rate of tricycles will suddenly increase, and the services of many establishments should adjust, all of these things will happen because of the oil price hike. According to Overholt (2016), the world uses hundreds of products made of oil or gas each day and over half of the energy used worldwide is produced by oil and natural gas combined. Both oil and natural gas are essential resources, and without them, the world would come to a grinding halt.

There was an invasion of the neighbouring country of Russia, which is Ukraine, which was ordered by the Russian President, Vladimir Putin on February 24, 2022. The North Atlantic Treaty Organization (NATO) and the United States have since given restrictions on Russia. Among the sanctions were Russia's expulsion from the global financial system and limitations on its ability to export its goods, particularly oil (Chua, 2022). Despite being far from the Philippines, the conflict between Russia and Ukraine has led to another issue: rising oil prices. This resulted in an increase in transportation costs as well as an increase in the price of necessities and commodities. It had an impact on both drivers of public transportation and those who own vehicles (Llemit, 2022).

Globally, at the gas pump, Americans were already feeling the effects of the world's record-high prices in general. Higher fuel prices are a drag on the broader economy in addition to the fact that consumers have less disposable

income. The price increase for fuel, especially diesel, affected everything that was moved by truck, train, or ship (Stevens, 2022). The Pandemic reduced the number of passengers using public transportation systems in the United States, but a recent increase in gas prices is luring some of them back (Chua, 2022).

The second-largest contributor to overall inflation in May 2022, according to the Philippine Statistics Authority (PSA), was transportation. The 14.6% increase in transportation costs in May outpaced the 5.4% increase in overall inflation (De Guzman, 2022). Economic jeepney drivers in the Philippines were affected by the rise in oil prices, which forced them to cease operations. Worse, it will prevent jeepney drivers from providing food for their families. Those jeepney drivers who have a large family cannot afford to meet their family's needs. And, since the pandemic began, they have barely been able to provide for their families (Ellao & Vital, 2022).

Due to the COVID-19 limits, public utility vehicle (PUV) drivers' revenue has unquestionably fallen locally in Davao City. Following these regulations, the number of passengers that can ride in cars is restricted, and fewer people commute overall. In Davao City, taxi drivers have occasionally had trouble filling up their cars, and the fares they receive at these times are insufficient to meet the escalating expenses of fuel and crude oil. Due to the continual increases in fuel prices, this circumstance has occasionally made them reluctant to operate. Before the pandemic, a taxi driver in Davao City would often work close to 24 hours a day while actively looking for customers. However, they have had to cut back on their workdays to about 12 hours due to rising fuel prices (Antoque & Eugenio, 2022).

Meanwhile, in Padada, Davao del Sur, the majority of the public transportation drivers specifically tricycle drivers were problematic in the sudden hike of the oil price which led to an increase in fares for their passengers. They could not save enough money since there were also too many tricycle drivers in the said municipality. This study understood and identified the different discernments, perceptions, torments, and agonies of public transportation drivers and vehicle owners in Padada, Davao del Sur experiencing fuel price increases and what would be the possible solutions to help and solve this kind of dilemma in Padada, Davao del Sur.

2.0 Methodology

2.1 Research Design

This study utilized qualitative design in concurrence with phenomenology methodology. Phenomenology, according to Hoffman (2014), is a philosophical method used to investigate and delve into the meanings ingrained in people's experiences as they are having them. A phenomenological investigation focuses on people's interactions with a particular phenomenon and seeks to understand what they have truly felt. Additionally, Smith (2015) asserts that phenomenology entails a first-person investigation of the architectures of consciousness. Thus, the researcher used a qualitative design in this study since the researcher explored the lived experiences and determined the perceptions, perspectives, and understandings of the transportation sectors in experiencing fuel price increase.

2.2 Research Locale

The research took place in the municipality of Padada, located in Davao del Sur province, situated between 125 degrees 20' east longitude and 6 degrees 28' 44' north latitude. To its north, it shares a border with the Hagonoy municipality, while the western boundary adjoins the Municipality of Kiblawan. To the south, it is bordered by the municipalities of Sulop and Malalag, and to the east lies the Davao Gulf. The Poblacion was around 20 kilometres from Digos, the seat of government for Davao del Sur. On the other hand, the Municipality of Padada has 29,878 residents as of the 2020 Census, and most people use public transit as their primary form of transportation.

2.3 Research Participants

The main participants of this thesis study were the transportation sector who resided at the Municipality of Padada, Davao del Sur. The total participants of the study were fourteen (14); two (2) motorcycle public transportation drivers, two (2) tricycle drivers, two (2) jeepney drivers, two (2) student drivers, two (2) government employee drivers, two (2) private transportation drivers, and two (2) business owners in Padada, Davao del Sur. These participants were selected based on the following reasons: first (1) if they were public transportation drivers

who rode motorcycles, tricycles, or jeepneys, or second (2) those owners who were using vehicles going school, work, or business purposes.

2.4 Research Instrument

The Purposive Sampling approach, which was used in this study, entails choosing a sample based on the goals of the investigation as well as certain features of the population. Purposive sampling is the process of choosing the subjects for the sample after consideration by the researcher. The researcher chose and identified the public transportation drivers if they were driving motorcycles, tricycles, or jeepneys, and those vehicle owners if they were using it for school, for work, for personal means of transportation, and for businesses on the inclusion and exclusion criteria.

2.5 Data Gathering Procedure

In this study, to obtain proper data, the researcher thoroughly followed steps on how to properly gather data to achieve the goal of this research. First, the researcher asked the permission of the thesis teacher and made a letter of permission. Then, the researcher immediately researched and found different sources that helped elaborate the research problem. Next, the source of information for this thesis study was an in-depth interview with the fourteen (14) participants mentioned above. The researcher found appropriate participants such as public transportation drivers and vehicle owners. The researcher asked permission from those transportation sectors that will participate in the research problem and gave them Informed Consent. Then, the researcher gave an interview guide questionnaire and immediately asked the participants with the formulated questions. The questions were answered by the participants and served as the guidelines for the researcher. Lastly, the data that the researcher gathered was categorized to know the discernments and perceptions of the public transportation sector experiencing fuel price increases and what would be the possible basis for policy formulation.

2.6 Data Analysis

The researcher analyzed the data through the following processes: **Data Reduction**. Data reduction, the initial phase of qualitative data analysis, was developed by Miles and Huberman (1994). Data reduction entails the methodical process of focusing on, simplifying, abstracting, and altering the information contained in field notes or transcriptions. With a particular focus on the participants' thoughts and insights regarding the impact of fuel price hikes in Padada, Davao del Sur, the researcher in this study employed the data reduction technique to condense the responses from the participants. **Data Display**. Findings, conclusions, and various techniques of organizing, summarizing, simplifying, or changing data were all presented using data displays, which were extremely important. The findings covered the various display styles used in these journals, their usage rates, and the goals of using visual displays opposed than just presenting data in the text (Verdinelli & Scagnoli, 2013). These visual representations were used to categorize data, evaluate findings, and give a descriptive and condensed version of the data. **Conclusion Verification**. According to Miles and Huberman (1994), conclusion verification comprises the process of formulating conclusions, which starts early in the coding phase. Coding, investigating conclusions and explanations, additional coding, retesting conclusions, and so on are steps that are routinely taken in an iterative process. According to Wilson (2015), drawing conclusions frequently entails leveraging implicit or inferred information to construct meaning from what has not been clearly expressed. Data for the study was gathered using research tools like interview guide questions. Based on the similarities of the participants' responses, the acquired qualitative data from the participants was evaluated and organized into themes. A textual presentation of the extracted and presented collective themes that connect to the study's goal.

2.7 Ethical Considerations

The researcher gave careful consideration to several vital participants. Forms requesting informed consent were distributed to the participants to obtain their approval for their voluntary participation. To ensure that the participants fully understood the study's objectives and methods, informed consent was attempted to give extensive information about it. Another ethical consideration of this study contained was the confidentiality of the subject, the researcher took precautions to limit the use of participant data, especially the most delicate information that required privacy protection. Participants have a fundamental right to regulate their personal information, thus the researcher made sure its distribution was restricted and under control. The study also considered the anonymity of the participant; therefore, the name of the participant changed. The real name of the participant was replaced with another name to suppress the primordial of the subject in this study. In this case, everyone will

never know the genuine name of the participant in this study. Likewise, in consideration for beneficence or the avoidance of harm for the participants, the researcher had admirable and fair treatments just for the participants because without the participants, the study would not be successful. Another ethical principle included was the veracity of the avoidance of deception. The researcher only spoke for the truth and was not biased for the accomplishment of this study. Any information that was given to the researcher by the participants was automatically reflected in the outcome and result of this problem. It implied that the researcher was truthful in handling facts and information by the participants that were intended for this problem. Veracity made this study more significant and authentic. The researcher used and put into practice all of the ethical principles to have complete participant engagement, have a correcting study, and observe problems.

3.0 Results and Discussion

This section contains the core concepts derived by the researcher from the responses of participants who took part in the in-depth interviews. The recurring themes that were found in the participants' responses during these interviews were used as the basis for organizing and classifying the information gathered from them. The categorized data are presented visually through figures and tables, providing a structured overview of the study's problem statement. Additionally, the researcher included detailed explanations and references to relevant literature to enhance the interpretation of the study's findings.

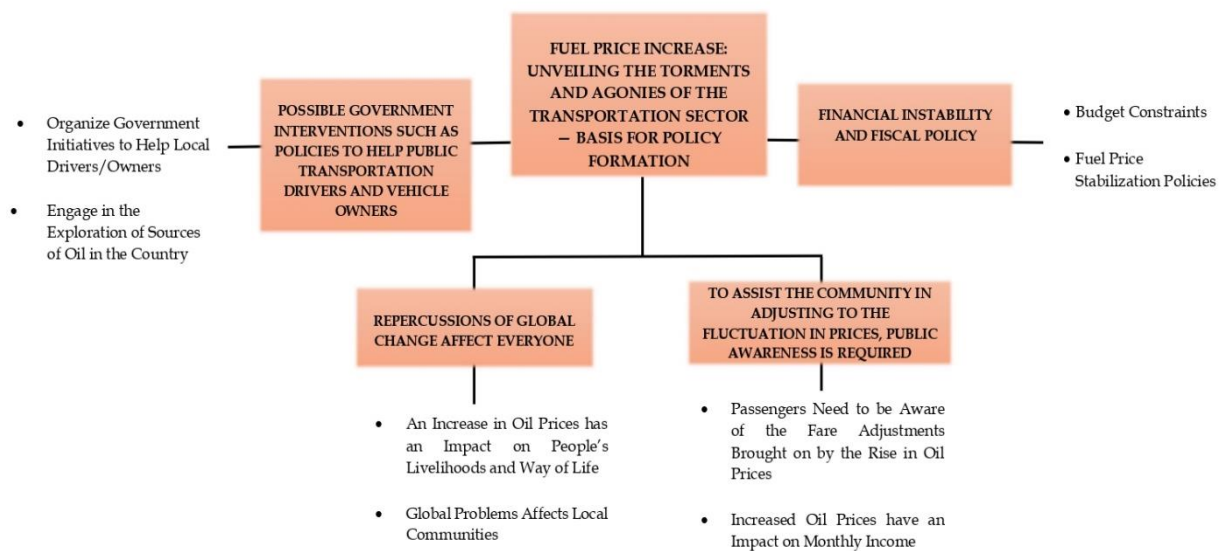


Figure 1. Thematic structure

3.1 Discernments and Perceptions on the Oil Price Hike

The responses of the participants unveiled the torments and agonies caused by the oil price hike in Padada, Davao del Sur. Figure 2 shows the figurative representation of the thematic analysis of the discernments and perceptions of the public transportation drivers and vehicle owners on the oil price hike. It presents two major themes on the discernments and perceptions of public transportation drivers and vehicle owners on the oil price hike, which includes (1) the repercussions of global change affect everyone along with its two subthemes – the increase in oil prices has an impact on people's livelihoods and way of life and global problems affect local communities; and the second (2) theme which is to assist the community in adjusting to the fluctuation in prices, public awareness is required along with its two subthemes – passengers need to be aware of the fare adjustments brought on by the rise in oil prices and increased oil prices have an impact on monthly income.

Theme 1. Repercussions of Global Change Affect Everyone

The first theme that came forth and emerged from the responses of the participants is the *repercussions of global change affect everyone*. Two subthemes emerged from the responses of the participants are (1) the increase in oil prices has an impact on people's livelihoods and way of life and (2) global problems affect local communities.

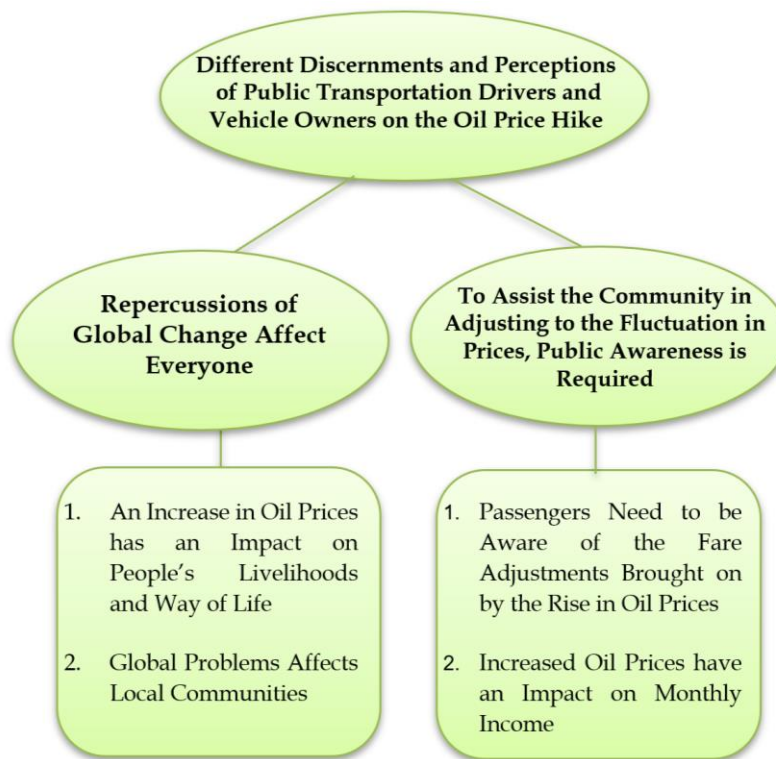


Figure 2. Themes and core ideas on the discernments and perceptions of public transportation drivers and vehicle owners on the oil price hike

Repercussions of global change affect everyone since the rise in oil prices was only the beginning; as oil prices rise, so do the prices of other products and services that rely heavily on oil, particularly in energy and transportation. Prices for basic commodities such as rice and meat have already begun to rise, since the majority of these are transported from far-flung farms to markets by gas-powered trucks, the price of necessities like rice and meat has also increased (Baluyot, 2022).

The first subtheme under this theme pertains to *the increase in oil prices has an impact on people's livelihoods and way of life* with its four codes — (1) fares rise in line with the rise in the price of oil, (2) PUV drivers would prefer to save oil by waiting for their turn rather than driving around, (3) owners of vehicles cut back and adjusted their spending on other things like food to save money for oil, and (4) to save money for oil, social activities like vacations were planned. The specific responses provided by the participants under the generated subtheme are listed below. The participant two, four, and ten said that,

"... Since the price of gasoline is expensive, our income will also decrease. In our household, I am the only one who has work, my wife is just a housewife, life is really difficult that's why we really need to save."

(Q 01 ; KII 02)

"... Gasoline is expensive, then there we're only few passengers, many people will not ride a tricycle anymore because they can't afford it brought by the oil price hike".

(Q 01 ; KII 04)

"... I only just stay here and wait for my turn to have passenger so I won't have to keep driving and look for passengers because I will waste too much gasoline if I will go around and still, cannot find passenger".

(Q 01 ; KII 04)

“... When the oil price increased, it only means that you need to control yourself in going out, you need to limit yourself in using your car because it would be expensive if you will spend too much especially on gas”.

(Q 01 ; KII 10)

According to Ang (2022), the rise in inflation is primarily due to the market's skyrocketing prices for global oil, which also affects the prices of other goods. Other goods and necessities are affected by global oil prices. Some people can cope and ride out the price hike wave, but ordinary and working Filipinos bear the brunt of inflation and price increases for necessities and food staples (Rubio, 2022).

On the other hand, the sudden increase in oil prices led to the increase in fares, it gave a major impact not just on commuters of public transportation but also on the public transportation drivers. This gave rise to the statement of Calleja (2022), fear and panic have gripped public transportation drivers and operators, who said they were still reeling from the effects of the COVID-19 pandemic. The sudden change in prices, as well as the high prices, worried public transportation drivers. This will kill their livelihood because oil prices are going up, but they are not increasing the passengers' fares.

Moreover, PUV drivers would prefer to save oil by waiting for their turn rather than driving around. According to Cabuenas (2022), due to the increase in oil prices, several jeepney drivers stopped plying their routes with their families and are now struggling to make ends meet due to the increase in petroleum product pump prices.

In addition, owners of vehicles adjusted their spending on other things such as food to save money for oil. Thus, social activities like vacations must be planned. The second subtheme under this theme is the *global problems affect local communities* with its three codes — (1) there is nothing we can do because it is not just you who is affected, it is everyone, (2) when there is a large demand for oil, the price likewise rises, and (3) when a crisis affects the entire country or world, no one can do anything but adjust. The specific responses provided by the participants under the generated subtheme are listed below. The participant six said that,

“... It could really make us feel bad but we cannot do anything about it because somehow, we do not have the power to change the price.

(Q 01 ; KII 06)

According to Rubio (2022), after surviving the pandemic and the government's severe lockdowns, Filipinos are now facing a new hurdle as the costs of practically all necessities have surged due to soaring fuel prices. Other items and necessities are influenced by global oil prices. Some people can cope and ride off the price hike wave, while regular and working Filipinos endure the burden of inflation and price hikes for basic needs and dietary staples.

Brought by the war between Russia and Ukraine, the North Atlantic Treaty Organization (NATO) and the United States have imposed sanctions on Russia. Among the sanctions are Russia's expulsion from the global financial system and limitations on its ability to export its goods, particularly oil (Chua, 2022). Despite being far from the Philippines, the conflict between Russia and Ukraine has led to another issue: rising oil prices. This resulted in an increase in transportation costs as well as an increase in the price of necessities and commodities. It has an impact on both drivers of public transportation and those who own vehicles (Llemit, 2022).

Though this situation only happened between the two countries, still, the effects were large that it also affected different countries, especially the Philippines. Moreover, when a crisis affects the entire country or world, no one can do anything but adjust. Thus, economic jeepney drivers in the Philippines were affected by the rise in oil prices, which forced them to cease operations. Worse, it will prevent the jeepney drivers from providing food for their families. Those jeepney drivers who have a large family cannot afford to meet their family's needs. And since the pandemic began, they have barely been able to provide for their families (Ellao & Vital, 2022).

The different pleas and concerns of drivers and vehicle owners brought by the increased oil price must be taken action, may it be an ordinance to help these drivers lessen and eradicate these kinds of problems. Moreover, finding concrete solutions to this problem would be beneficial for all of the people, especially Filipinos since the

price of the goods in the market was also affected by this hike. In conclusion, the rise of the oil prices affected different people's way of life, from the rise of the price of the fare, to adjusting just to save up, or to the drivers who gave their best for their families. These were manifestations that one global problem could cause something big that may affect local communities.

Theme 2. To Assist the Community in Adjusting to the Fluctuation in Prices, Public Awareness is Required

The second theme that emerged from the responses of the participants is *to assist the community in adjusting to the fluctuation in prices, public awareness is required*. Two subthemes emerged from the responses of the participants are (1) passengers need to be aware of the fare adjustments brought on by the rise in oil prices and (2) increased oil prices have an impact on monthly income.

Crude oil price fluctuations have a global impact, affecting every nation on the planet. Emerging economies, which lacked financial stability and were vulnerable to foreign shocks, were among the hardest hit. These changes in oil prices had a significant impact on inflation rates and price swings, potentially causing economic upheavals that impacted overall economic performance. Numerous studies have consistently demonstrated that oil prices have a significant impact on consumer price inflation. This is primarily due to the fact that oil is a critical input in the production of many consumer goods and is used directly in the production of practically all consumer goods (Sek et al., 2015).

The first subtheme states that the *passengers need to be aware of the fare adjustments brought on by the rise in oil prices* with its five codes – (1) commuters feel unhappy with the changes of the fare but helpless because they recognize the drivers' or owners' side, (2) asked why drivers ask for a very high price though it runs the same. But then realize that they too are living their lives and their capital also is too big, (3) passengers must know and understand the changes of the fare due to oil price increases, (4) owners of vehicles have to adjust the fare because if not, they won't be able to get passengers, and (5) some passengers are complaining about the fare. The specific responses provided by the participants under the generated subtheme are listed below. The participant one and two said that,

"... Actually, there may be five passengers out of one hundred who have knowledge and care about the price of the crude oil, they thought that the cheap fare before will be permanent and we can't really blame them because of course, life right now is really difficult".

(Q 01 ; KII 01)

"... There were passengers who kept on complaining about the fare, sometimes it seems like they are yelling at you because they were used to the cheap price. But we can't do anything about it either because if they have hard time paying too much, we as drivers also have a hard time because gasoline now is too expensive".

(Q 01 KII 02)

According to Calleja (2022), drivers of the Philippine iconic jeepney buses have petitioned the government to reduce taxes or allow them to raise fares to offset rising oil prices. According to Piston, an organization of jeepney drivers and operators, drivers must raise fares by one peso to compensate for fuel price increases since January. Diesel prices have risen by 17.50 pesos per litre since the beginning of 2022, while gasoline prices have risen by 13.25 pesos. Many of the passengers and commuters feel unhappy with the changes in the fares but still, the majority of them recognize the hurdles on the drivers and owners. According to Refraccion, Mugas, and Orejas (2022), due to increased gasoline prices, jeepney drivers in the provinces of Luzon struggle to bring home enough money for their families after a day on the road, prompting them to take odd jobs and find other ways to get by.

Passengers must know and understand the changes in the fares due to oil price increases. According to Luna (2022), transport organizations pleaded for patience from commuters and the government, saying some operators have been forced to resort to alternative means to support their families in the face of soaring petrol prices. Nonetheless, owners of vehicles have to adjust the fare for them to have passengers.

The second subtheme is *increased oil prices have an impact on monthly income* along with its three codes – (1) given that only one person is the worker in the household and that gasoline has become so costly, it affects all of the drivers, (2) the allowance became not enough so there is a need to request additional amount to survive and

comply the requirements, and (3) need to adjust the expenses to survive. The specific responses provided by the participants under the generated subtheme are listed below. The participant one and five said that,

"... I don't have enough of income; I only make 3,000 or 4,000 a month".

(Q 01 ; KII 05)

"... It really affects my income because we only have about 7000 a month so it can really affect negatively, it's really hard".

(Q 01 ; KII 1)

Oil price fluctuations have a significant impact on the inflation rate and overall price adjustments. These changes in inflation rates and price levels, in turn, could lead to changes in the economy and affect how well the economy is performing overall (Siok, Teo, & Wong, 2015). Even tricycle drivers, who ordinarily can only carry a small number of people in their pedicabs, are suddenly struggling to make about a hundred pesos less per day than they usually do (Ellao & Vital, 2022).

As the nation's economy begins to recover from the pandemic, the unavoidable effects of higher transportation costs and food prices are making things more difficult for consumers. The issue is getting worse as a result of the rise in the price of imported oil and the continued supply shortages around the world. The Philippines is extremely vulnerable to fluctuations petroleum prices on the international market because of its dependence on imported oil. As a result, the government must launch focused humanitarian assistance initiatives and public awareness campaigns, paying special attention to public utility drivers and the most economically disadvantaged people (Daroy, 2022).

In conclusion, the perceptions of drivers on the oil price hikes, perceptions of their passengers, and perceptions towards their status and monthly income or allowance affected them truly. It caused a huge impact on the drivers' monthly income, may it be for private owners of vehicles, government employees, or public transportation drivers. It could affect the lifestyle of a family since their income would vary on the price of the oil. Whereas, the salary of an employee would be lessened due to the increased price of oil, the allowance of the students was also affected, and much more, drivers' income was affected since oil is the main reason why their vehicles would be functional.

3.2 Government Interventions

The verbal responses from the participants in the guide interview questions were employed to discover what are the possible government interventions such as policies to help public transportation drivers and vehicle owners. Figure 3 displays the figurative representation of the thematic analysis of the possible government interventions such as policies to help public transportation drivers and vehicle owners. It presents one major theme which is government plays a vital role in protecting the welfare of the people along with its two subthemes namely; organising government initiatives to help local drivers or owners and engage in the exploration of sources of oil in the country.

Theme 1. Government Plays a Vital Role in Protecting the Welfare of the People

The only theme in the drivers' responses on what are the possible government interventions such as policies to help public transportation drivers and vehicle owners is *Government Plays a Vital Role in Protecting the Welfare of the People*. Two subthemes emerged from the responses of the participants are (1) the increase in oil prices has an impact on peoples' livelihoods and way of life and (2) global problems affect local communities.

According to Ochave's findings in 2022, the government should implement policies to lessen the effects of rising oil prices on critical commodities. Laban Konsyumer, Inc. President Victorio Mario A. Dimagiba underlined that rising fuel prices cause inflation, which harms customers, particularly those who are part of vulnerable groups like daily wage workers. Despite the reduced rate of inflation seen in January, Mr. Dimagiba advised the government to maintain its vigilance and pursue measures like temporary fuel tax reductions and contract approval. These steps are meant to lessen the effect that growing fuel and power costs will have on consumer pricing in the upcoming months.

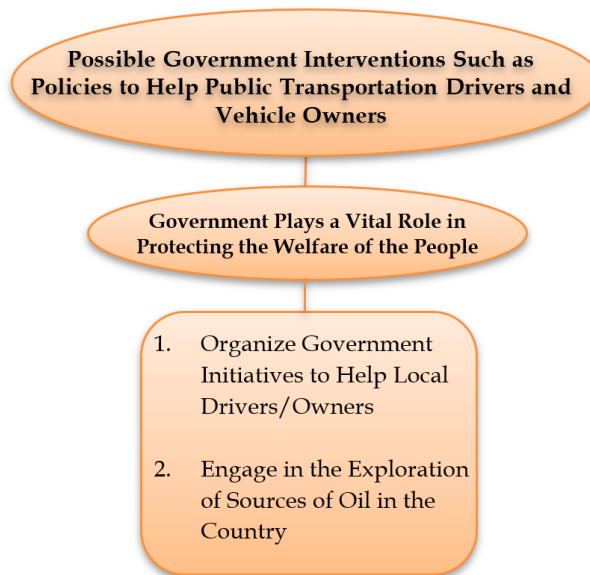


Figure 3. Themes and core ideas on the possible government interventions such as policies to help public transportation drivers and vehicle owners

The first subtheme is to *organize government initiatives to help local drivers or owners* with its five codes – (1) the government needs to take into consideration programs such as subsidies for PUV owners and drivers, (2) last year, in 2022, there was a fuel subsidy, but as of right now, the drivers have not received any, (3) still believe that the government can help the country with this problem, (4) the government must create an ordinance regarding the changes of the fare prices, and (5) the government can assist by increasing workers’ wages so they can pay for their own needs, including gasoline. The specific responses provided by the participants under the generated subtheme are listed below. The participant one and four said that,

“... The government should have initiatives intended for us drivers similar on what had happened during Rodrigo Duterte's time that the drivers had subsidies”.

(Q 02 ; KII 01)

“... It was just in year 2022, then now, it's already 2023 but still, we did not receive any, we will not expect it anymore since we already sent information to DILG”.

(Q 02 ; KII 04 ; Line 85-88)

Contributing to the creation of a policy that can benefit both users of public transportation and owners of private vehicles is one of the goals of this study. A crucial element in the process of creating public policies is policy formulation, during which governments and other important stakeholders participate in a discussion to address various problems and circumstances affecting individuals and organizations as they work to accomplish their objectives. The answers developed throughout this formulation process form the basis of what, after being adopted, becomes a formal public policy (Howlett & Mukherjee, 2014).

One thing that the government can provide to the drivers and owners is to have initiatives to help these affected people. There were so many solutions that could help these drivers specifically for those public transportation drivers. The Pantawid Pasada Program (PPP), which offers a one-time subsidy to provide financial help to Public Utility Jeepney (PUJ) franchisees and operators, was established by the government in 2022, according to Llemit's report. With the recent rise in gasoline prices and the ongoing epidemic, the public transportation industry is currently experiencing financial difficulties that are being addressed by this program. The program covers a variety of vehicles, including PUJs, and fuel-dependent modern jeepneys. Each unit is eligible for a P7,200 subsidy. Through a federally financed national program, 136,000 participants would get P1 billion in subsidies nationally.

These initiatives comply with Republic Act No. 10963 (TRAIN Law), also known as the Tax Reform for Acceleration and Inclusion (TRAIN) Law, which specifies the prerequisites for having an operational and legitimate PUJ franchise.

On the other hand, some drivers continue to believe that the government can help resolve this issue, and thankfully, as stated by the Department of Budget and Management (DBM) Secretary Amenah F. Pangandaman in 2023, the government is acting. She continued, "As directed by President Ferdinand Marcos Jr., this administration will continue providing fuel subsidies to our fellow citizens, especially in the most vulnerable sectors, including public transport and agriculture." A total of P3 billion has been set aside in the national budget for 2023 for fuel vouchers, which will help qualified drivers of Public Utility Vehicles (PUV), taxis, and tricycles, as well as full-time drivers for ride-hailing and delivery services, across the entire nation. Comparing this allocation to the P2.5 billion budget for the fuel subsidy program in 2022, there has been a rise of P500 million. It is hoped that with this additional support, the current high oil costs won't have such a negative impact on thousands of PUV drivers. The DOTr, DOE, and DBM have all established guidelines that must be followed for implementing the program. It will be the Land Transportation Franchising and Regulatory Board's (LTFRB) responsibility to confirm and specify the recipients.

The second subtheme is to *engage in the exploration of sources of oil in the country* with its three codes – (1) the government needs a factory of its own. The country has sources in the Western Philippine Sea, but there are still problems, (2) the country is just buying and importing from other countries, and (3) making the power plants government-owned which is still a long way off. But in any case, just look for a source of oil. The specific responses provided by the participants under the generated subtheme are listed below. The participant ten said that,

"... If the source of our oil is different, or if it's the same that it is from a different country, it will still be high".

"... That's always the plan, they want the government to control the gas stations because in other countries, it looks like their gas station is government owned because if it's privately owned, it's different, they can't manipulate, whereas if it's government-owned, they can manipulate".

(Q 02 ; KII 10)

If the country discovers sources of oil in the country itself, this problem would be solved right away. The significance of comprehending the causes or sources of oil shock was thoroughly discussed by Kilian (2014). There are numerous avenues via which the effects of the oil price can be distributed. One of the channels is the supply or inflationary channels. Higher final goods prices are the outcome of inflationary pressures brought on by higher oil prices. Higher oil prices can also be passed along through cost channels, where they raise production costs and cause markups, capital utilization, and reallocation effects to fluctuate over time. When examining how oil shocks affect the macroeconomy, it is also important to take into account the pattern of energy flows, which varies through time and between different nations. In conclusion, government can create or formulate solutions to eradicate this kind of problem. Little by little, the country will be free of oil price hike experiences and will later on be satisfied with the solutions brought to them by the government. Subsidies can be a great help for the drivers and vehicle owners and the exploration of sources of oil inside the country would be a great help, especially in these times.

3.3 Insights and Personal Takes

The verbal responses of the researcher in the guide interview questions were employed to discover what are the insights and personal takes on the results of the researcher's study that could be applicable in the field of Public Administration. Figure 4 displays the figurative representation of the thematic analysis of the insights and personal takes in the results of the researcher's study that could be applicable in the field of Public Administration. It presents one major theme which is financial instability and fiscal policy along with its two subthemes namely; budget constraints and fuel price stabilization policies.

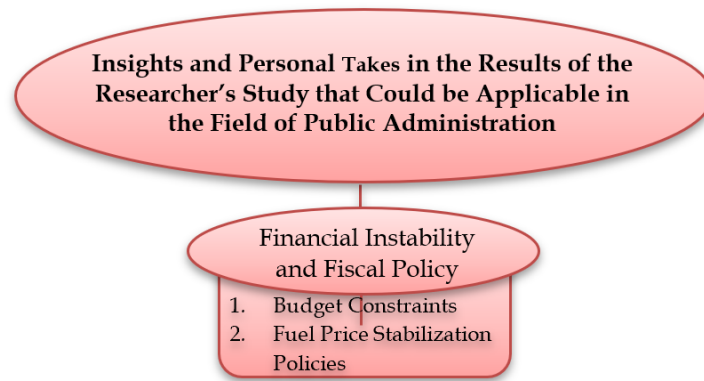


Figure 4. Themes and core ideas on the insights and personal takes in the results of the researcher's study that could be applicable in the field of public administration.

Theme 1. Financial Instability and Fiscal Policy

The only theme in the insights and personal takes in the results of the researcher's study that could be applicable in the field of Public Administration is *Financial Instability and Fiscal Policy*. Two subthemes emerged from the responses of the participants (1) budget constraints and (2) fuel price stabilization policies.

Oil prices had a significant impact on emerging economies, mainly because these economies lacked financial stability and were vulnerable to outside shocks. The impact of changes in oil prices on the inflation rate and price adjustments is significant. A shift in inflation or pricing levels can lead to changes in the economy that have an impact on how well the economy is performing as a whole. Since oil is a direct input for a wide range of consumer goods and is used as a direct input in almost every consumer product, numerous studies have shown that oil prices have a significant impact on determining consumer price inflation (Sek et al., 2015).

The first subtheme is *budget constraints* with its four codes – (1) rising oil prices can strain a driver's budget, as fuel expenses often represent a substantial portion of their monthly spending, (2) drivers often have limited income and rely heavily on their tricycles for transportation, so increased fuel costs can eat into their already tight budgets, (3) a reduced allowance can put students and their families under financial strain. Students often rely on their allowances to cover various expenses, including transportation, school supplies, and personal needs, and (4) the instability of oil prices can lead to unpredictable changes in a private transportation driver's monthly expense.

The relevance of community interaction and feedback in policymaking may be recognized by public administrators. The outcomes of the study stress the importance of listening to and cooperating with affected individuals and groups to build effective solutions. Oil prices, real exchange rates, and exporter production costs have a significant impact on domestic inflation, and because they can disturb both price stability and the stability of financial markets, policymakers should be concerned about their effects. Numerous experts contend that monetary policy can be used as a powerful instrument to reduce the disproportionate effects of these shocks on domestic inflation (Sek, Teo, & Wong, 2015).

Personal thoughts of the researcher, formed by the experiences of the participants, may also generate empathy and advocacy in the field of Public Administration. Understanding the human cost of rising fuel prices can motivate efforts to develop more compassionate and responsive policies. Many individuals and households spend a significant amount of their monthly income on fuel. This is particularly true for those who rely largely on personal vehicles for daily transit. As a result, any increases in fuel prices have a correspondingly greater impact on their overall budget. Rising gasoline expenses can put a strain on a driver's budget, causing financial stress and anxiety. They may be struggling to make ends meet or forced to make difficult decisions about which expenses to prioritize.

The second subtheme is the *fuel price stabilization policies* with its three codes – (1) implement targeted fuel subsidies or price controls to alleviate the financial burden on drivers, (2) governments may develop strategies to

stabilize the economy during oil price fluctuations. This includes managing fiscal policies, tax adjustments, and subsidies to help drivers manage their budgets effectively, and (3) governments can explore policies aimed at stabilizing oil prices to prevent excessive fluctuations.

The agonies and torments of drivers were summed up into a problem that the government ought to look into. According to the researcher's observations and personal viewpoints, the researcher concluded that the government is the only entity that might significantly assist these drivers. To avoid extreme volatility, governments might look into initiatives targeted at stabilizing oil prices. This can offer certainty and lessen the effects of unexpected price increases.

Governments may come up with strategies to maintain economic stability while oil prices fluctuate. To assist drivers in properly managing their budgets, this management includes managing fiscal policies, tax modifications, and subsidies.

In the Municipality of Padada, Province of Davao del Sur, an ordinance made for the passengers, Ordinance 003, Series of 2009 which is "An ordinance imposing regulations for fare rates of tricycles for hire in the municipality of Padada, province of Davao del Sur and penalties for violations thereof". According to Section Three (3) of the Ordinance 003 of Padada, Davao del Sur, it is proper that the rate of fares of tricycles-for-hire shall be based on the price rates of gasoline per litre in the Municipality of Padada. Moreover, Section Three (3) of the said ordinance said that, students, senior citizens and persons with disabilities shall be given an automatic 20% fare discount based on the fare rate stipulated in Section 2 of the Ordinance. Since the municipality of Padada formulated an ordinance for the passengers, the drivers also need to have it for themselves.

To help the PUV sector cope with the ongoing rise in oil prices, the government established the Pantawid Pasada Program (PPP) by providing a one-time subsidy to provide financial support to PUJ franchisees and operators in the wake of the recent spike in oil costs amid the pandemic (Llemit, 2022). Since this program came to light, it would be much better that this program must ensure that all drivers receive this one-time subsidy since many of the drivers in the municipality did not receive any.

The results of this study only pointed out one thing and that only means that the participants experienced difficulty in this fuel price increase. The torments and agonies they have experienced cultivated the researcher's insights and personal takes that could be applicable in the field of Public Administration.

The study shed light on the real-life experiences and obstacles experienced by those affected by this economic phenomenon by studying the impact of fuel price rises on participants. It emphasized the real-world issues that drivers and other stakeholders face when fuel costs rise. The study's conclusions contain important insights that can help the field of public administration. The agonies and torments expressed by participants can serve as compelling motivation for public officials to explore and prioritize actions targeted at minimizing the impact of fuel price increases. These policies may include steps to improve economic stability, public transportation, and social support programs.

In conclusion, the researcher's insights and personal takes proved that the experiences of the transportation industry were accurate. The researcher understood and realized how tough it was to realize that if solutions were not found, the drivers would endure and feel these pains, sufferings, agonies, and torments forever. To lessen the financial strain on drivers, not only those who were driving public transportation but also those who were government employees, business owners, vehicle owners, and student drivers, it is time to enact targeted fuel subsidies or price regulations. These incentives may lower fuel prices and lower the cost of commuting.

4.0 Conclusion

The study's findings led to the following conclusions, and based on the findings, these conclusions were drawn: First, the results of the data in the Repercussions of Global Change Affect Everyone show that (1) An Increase in Oil Prices has an Impact on Peoples' Livelihoods and Way of Life and (2) Global Problems Affects Local Communities. In addition, the study implies that to Assist the Community in Adjusting to the Fluctuation in Prices, Public Awareness is Required ,and it shows that (1) Passengers Need to be Aware of the Fare Adjustments Brought on by the Rise in Oil Prices and (2) Increased Oil Prices have an Impact on Monthly Income. Second, the

results of the study show that the Government Plays a Vital Role in Protecting the Welfare of the People and this can only be done if the government (1) Organize Government Initiatives to Help Local Drivers/Owners and (2) Engage in the Exploration of Sources of Oil in the Country. Third, the study results show that from the insights and personal takes of the researcher's study, the Financial Instability and Fiscal Policy shows that the main concerns of these drivers are all about (1) Budget Constraints and (2) Fuel Price Stabilization Policies.

To the Local Government Unit of Padada, Davao del Sur, the researcher highly recommends to identify and propose policies that should be made to help mitigate and lessen the problem brought by the results of the oil price hikes in transportation sectors. It would be better to amend and strengthen the ordinance made for the passengers, Ordinance 003, Series of 2009. This merely indicates that, depending on the cost of oil at that particular moment in time, the price of the passenger fare may fluctuate from time to time. Moreover, the government needs to take into consideration and follow up the programs such as the promised subsidies for PUV owners and drivers. In addition, if there would be no possible policies that shall be made ahead of time, government interventions and solutions shall be made in order for the municipality not to be affected drastically. Improving the tourism industry in the locality would be one of the interventions that could be both beneficial to the transportation sector especially to the public transportation drivers and would also give positive impact in the municipality itself. The researcher strongly advises public transportation drivers to strictly adhere to the suggested pricing and the fare matrix provided by the Land Transportation Franchising and Regulatory Board (LTFRB). In addition, it is good that public transportation drivers understood the current situation and have budget income allocated for the food and other needs of the family, since it is better to adjust the expenses in order to survive. To the future researchers, this study will be a great help for their future investigation related to the discernments of the people about the oil price hike. Moreover, this can be a guide in conducting another study that will relate to this.

5.0 Contributions of Authors

Cydeah Aldic J. Conchas – editing, writing, encoding, transcribing, revision, conception, design, typists
Roel Jr. D. Apas, MPA – supervising, data analysis, checking, themes and codes

6.0 Funding

This work received no specific grant from any funding agency.

7.0 Conflict of Interests

The authors declare no conflicts of interest about the publication of this paper.

8.0 Acknowledgment

In conducting the thesis study, the dedicated researcher had to take the help and guidelines of all the respected persons. This thesis study would not be feasible without the support from them. First, the researcher is deeply honoured and grateful to her thesis adviser and statistician, Mr Roel Jr. D. Apas, MPA for his time, effort, guidance, insightful comments, and expressions of upliftment that shaped her and fulfil the thesis study; to the advisors - the dean of the Institute of Business Education and Governance (IBEG), Dr Zandro P. Ibañez; respectively to her chairperson, EnP. Rhoda M. Hilis, MABM; to her panellists, Mr Roy R. Molina and Ms Noreen Faithe L. Puzon, CPA for patiently and consistent in helping her throughout the journey. To the participants, their cooperation and participation during the interview were a great help in completing this thesis and for that, the researcher is grateful to all of you. In addition, the author loves to extend a warm appreciation to her financial supporters and funders, to her supportive mother, Regina J. Conchas for being her inspiration and for her endless moral and financial support, especially her unparalleled sacrifices throughout the journey, to her beloved late father George L. Conchas Sr. who became her strength and guidance up above. Also, to her siblings, George, Regime, Regilyn, Jane, and Haide, to her cousins, Lesley, Ryan, and Angelo who lent his laptop to the researcher in the thesis journey, to the whole Jumao-as-Conchas family, and her relatives, especially to her grandmother, Nenit Scutter and uncle, Gerry Castillon for the ceaseless financial support, motivation, and love. To the researcher's classmates and friends, SSC Fam, SKPMF Fam, SHS friends, to Hana, Jestoni, Karen, Angelo, Miko, Kinneth, Christine, and Xydyll, the researcher gives her sincerest gratitude for the great times she had along with this thesis journey, to Chrishsha and Shiena who helped her in conducting the thesis study, and to Ian for the endless support and funding. Above all, to God in Heaven, for bestowing her a healthy body, wisdom, hope, and wins the entire time to complete this study, for without Him, this study would be difficult and impossible.

9.0 References

- Boarnet, M. G., Hong, A., Lee, J., Wang, X., Wang, W., Houston, D., & Spears, S. (2013). The exposition light rail line study: A before and after study of the impact of new light rail transit service. National Academies Sciences Engineering Medicine. https://pdfs.semanticscholar.org/b4cf/c9dbbe24f1c24021cabf2ce0fcd7f8a99c68.pdf?_ga=2.46612327.1934534295.1580911383-1889596704.1567016067
- Borowsky, A., Shinar, D., & Oron-Gilad, T. (2010). Age, skill, and hazard perception in driving. Accident analysis & prevention, 42(4), 1240-1249. <https://doi.org/10.1016/j.aap.2010.02.001>
- Brakewood, C., Macfarlane, G. S., & Watkins, K. (2015). The impact of real-time information on bus ridership in New York City. Transportation Research Part C: Emerging Technologies, 53, 59-75. <https://doi.org/10.1016/j.trc.2015.01.021>

- Cabuenas, J.V. (2022, June 12). The struggles to make ends meet as fuel prices continue to rise. GMA News. https://www.gmanetwork.com/news/top_stories/nation/834721/jeepney-drivers-families-struggle-to-make-ends-meet-as-fuel-prices-continue-to-rise/story/
- Calleja, J.P. (2022, March 09). Rising oil prices fuel the Philippine transport crisis. UCA News. <https://www.google.com/amp/s/www.ucasnews.com/amp/rising-oil-prices-fuel-philippine-transport-crisis/96408>
- Chua, D.K. (2022, March 29). Rising gas prices in the Philippines. Kid Reporter's Notebook. <https://kpcnotebook.scholastic.com/post/rising-gas-price-Philippines>
- Daroy, G. (2022, February 21). Easing impact of oil price hikes. Philippine Daily Inquirer. <https://opinion.inquirer.net/150113/easing-impact-of-oil-price-hikes>
- De Guzman, J.M. (2022, June 14). Public transport system on brink of 'collapse' due to high fuel prices. Business World. <https://www.bworldonline.com/economy/2022/06/14/455032/public-transport-system-on-brink-of-collapse-due-to-high-fuel>
- Ellao, J.A. & Vital, E. (2022, March 15). It's a hunger spell for Filipino transport drivers as oil prices continue to spike. Bulatlat Journalism for the People. <https://www.bulatlat.com/2022/03/15/its-hunger-spell-for-filipino-transport-drivers-as-oil-price-continue-to-spike/>
- Farber, S., Bartholomew, K., Li, X., Páez, A., & Habib, K. M. N. (2014). Assessing social equity in distance-based transit fares using a model of travel behaviour. *Transportation Research Part A: Policy and Practice*, 67, 291-303. <https://doi.org/10.1016/j.tra.2014.07.013>
- Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The Qualitative Report*, 8(4), 597-606. <http://www.nova.edu/ssw/QR/QR8-4/golafshani.pdf>
- Howlett, M. P., & Mukherjee, I. (2014). Policy design and non-design: Towards a spectrum of policy formulation types. *Lee Kuan Yew School of Public Policy Research Paper*, (14-11). <https://dx.doi.org/10.2139/ssrn.2461087>
- Howlett, M., & Ramesh, M. (2016). Achilles' heels of governance: Critical capacity deficits and their role in governance failures. *Regulation & Governance*, 10(4), 301-313. <https://doi.org/10.1111/rego.12091>
- Kilian, L. (2014). Oil price shocks: Causes and consequences. *Annual Review of Resource Economics*, 6(1), 133-154. <https://doi.org/abs/10.1146/annurev-resource-083013-114701>
- Lamazoshvili, B. (2014). Effects of oil shocks on oil-importing developing economies: The case of Georgia and Armenia. *Economics Education and Research Consortium Working Paper Series*. 14. <https://ideas.repec.org/p/eer/wpalle/14-06e.html>
- Llemit, R.L. (2022, April 03). Taxi drivers struggle amid increasing oil price hikes. SunStar Davao. <https://www.sunstar.com.ph/article/1925497/Davao/local-news/taxi-drivers-struggle-amid-increasing-oil-price-hike>
- Luna, F. (2022, June 08). Jeepney drivers ask for commuters' understanding as gas prices soar. PhilStar Global. <https://www.philstar.com/headlines/2022/06/08/2186967/jeepney-drivers-ask-commuters-understanding-gas-prices-soar>
- Mariano, S. (2020). Implementing guidelines pursuant to the DOTR department. Philippine Railways Institute. <https://pri.dotr.gov.ph/wp-content/uploads/2022/06/IRR-OCR.pdf>
- Margotin, C. (2022, April 04). I can only afford to go to work one day a week: how are students being affected by rising oil prices? Mancunio Manchester Media Group. <https://mancunio.com/2022/04/04/students-opinions-on-the-increase-in-oil-prices/>
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. Sage Publications, Inc. https://books.google.com.ph/books?id=U4IU_wj5_QEC&lpg=PR12&ots=kFG4JTUUO&dq=Qualitative
- Ochave, R.M. (2022, February 13). Group seeks gov't help to protect consumers from the impact of surging oil prices. Business World. <https://www.bworldonline.com/thenation/2022/02/13/429658/group-seeks-govt-help-to-protect-consumers-from-impact-of-surging-oil-prices>
- O'Neal, L. (2022). Truckers face further fuel price increases on crude market volatility. The Wall Street Journal. <https://www.wsj.com/articles/truckers-face-further-fuel-price-increases-on-crude-markets-volatility-11645810325>
- Overholt, M. (2016). The importance of oil and gas in today's economy. Tiger General. <https://www.tigergeneral.com/the-importance-of-oil-and-gas-in-today-s-economy/>
- Pangandaman, A. (2023). Gov't allots P4 billion in fuel subsidies for PUV drivers, farmers, and fisherfolks. Department of Budget and Management. <https://www.dbm.gov.ph/index.php/management-2/332-govt-allots-p4-billion-in-fuel-subsidies-for-puv-drivers-farmer-fisherfolks>
- Prakash, S. (2022, November 08). Why men are better drivers than women. News Patrolling. <https://newspatrolling.com/why-men-are-better-drivers-than-women/>
- Refraccion, G., Mugas, J.M., & Orejas, T. (2022, March 17). Luzon jeepney drivers find ways to cope with high fuel costs. Inquirer. <https://newsinfo.inquirer.net/1569475/luzon-jeepney-drivers-find-ways-to-cope-with-high-fuel-cost>
- Rubio, P. (2022, April 13). Necessities that have raised prices amid global oil price spike. PH News. <https://www.google.com/amp/s/ph.news.yahoo.com/amphhtml/list-necessities-that-have-raised-prices-amid-global-oil-pricespike-071829189>
- Sandelowski, M. (1986). The problem of rigour in qualitative research. *Advances in nursing science*, 8(3), 27-37. <http://dx.doi.org/10.1097/00012272-198604000-00005>
- San Jose, A. E., & Galang, J. G. (2015). Teaching strategies in teaching literature: Students in focus. *International Journal of Education and Research*, 3(4), 41-50. <https://ijern.com/journal/2015/April-2015/05.pdf>
- Sener, I. N., Lee, R. J., & Elgart, Z. (2016). Potential health implications and health cost reductions of transit-induced physical activity. *Journal of transport & health*, 3(2), 133-140. <https://doi.org/10.1016/j.jth.2016.02.002>
- Sek, S. K., Teo, X. Q., & Wong, Y. N. (2015). A comparative study on the effects of oil price changes on inflation. *Procedia Economics and Finance*, 26, 630-636. [https://doi.org/10.1016/S2212-5681\(15\)00800-X](https://doi.org/10.1016/S2212-5681(15)00800-X)
- Stenbacka, C. (2001). Qualitative research requires quality concepts of its own. *Management decision*, 39(7), 551-556. <https://doi.org/10.1108/EUM0000000005801>
- Stevens, P. (2022, May 19). Rising fuel costs are a massive problem for businesses and consumers. CNBC. <https://www.cnbc.com/2022/05/19/fuel-is-a-problem-for-business-and-consumers-why-prices-are-so-high.html>
- Taylor, J. C., & Johnson, R. K. (2013). Farm to school as a strategy to increase children's fruit and vegetable consumption in the United States: Research and recommendations. *Nutrition Bulletin*, 38(1), 70-79. <https://doi.org/10.1111/nbu.12009>
- Todaro, M. P., & Smith, S. C. (2012). *Economic development* (11th edition). Library of Congress in Publication Data. <http://155.0.160.4:8080/xmlui/bitstream/handle/123456789/63/>

- Verdinelli, S., & Scagnoli, N. I. (2013). Data display in qualitative research. *International Journal of Qualitative Methods*, 12(1), 359-381.
<https://doi.org/10.1177/160940691301200117>
- Wan, D., Kamga, C., Liu, J., Sugiura, A., & Beaton, E. B. (2016). Rider perception of a “light” bus rapid transit system-the New York City select bus service. *Transport Policy*, 49, 41-55. <https://doi.org/10.1016/j.tranpol.2016.04.001>
- Wilcox, W. B. (2015). Don't be a bachelor: Why married men work harder, smarter and make more money. *Washington Post*.
<https://www.washingtonpost.com/news/inspiredlife/wp/2015/04/02/dont-be-a-bachelor-why-married-men-work-harder-and-smarter-and-make-more-money/>

From Preparation to Presentation: Student Nurses' Transformative Research Dissemination Journeys at Off-Campus Academic Conferences

Jayson M. Bimuyag*, Christopher Ian N. Gaerlan

Department of Nursing, Easter College, Baguio City, Philippines

*Corresponding Author Email: jaysonbimuyag@gmail.com

Date received: June 8, 2024

Date revised: June 20, 2024

Date accepted: June 28, 2024

Originality: 98%

Grammarly Score: 99%

Similarity: 2%

Recommended citation:

Bimuyag, J., Gaerlan, C.I. (2024). From preparation to presentation: student nurses' transformative research dissemination journeys at off-campus academic conferences. *Journal of Interdisciplinary Perspectives*, 2(8), 232-238. <https://doi.org/10.69569/jip.2024.0273>

Abstract. Academic conferences play a crucial role in enhancing undergraduate research productivity, yet more research is needed on student nurses' experiences during the dissemination phase of their research. This study employed qualitative content analysis to examine 33 learning journals from 25 student nurses, focusing on their experiences from the preparation stage to the presentation of their group research at off-campus academic conferences. The analysis revealed two main themes: Transformative Pathways to Research Presentation and Transformative Power of Research Presentation. The first theme encompasses categories such as Psychological Preparedness Challenges, Logistical Challenges, Supportive and Collaborative Networks, and Mastery through Practice. The second theme includes categories like Unleashing Confidence, Learning through Observation and Adaptation, Interactive Presentation Experiences, and Nurturing Growth through Research. The findings highlight the challenges faced by student nurses and the transformative experiences they encountered from preparation to presentation at off-campus academic conferences. Despite these challenges, student nurses showed significant personal and professional growth, overcoming psychological preparedness issues and logistical hurdles while seeking mastery through practice. The transformative power of research presentations was evident as they gained confidence and refined their presentation skills.

Keywords: Research dissemination; Academic conferences; Student nurses; Nursing research.

1.0 Introduction

Nursing research encompasses various stages, from conception to dissemination, each crucial in conducting thorough and impactful studies. Recent studies have focused on the experiences of undergraduate student nurses, shedding light on different aspects of their research journey. Tupall et al. (2022) explored student nurses with undergraduate research supervision in the Philippines. They found that good supervision of undergraduate nursing research involves sharing new ideas between students and supervisors, learning together as a group, and active participation by students. In Indonesia, Riastini et al. (2020) found that typographical errors, difficulty finding relevant literature, and lengthy research permit processes are among the challenges that final-semester student nurses face in writing their final research output. Grønning (2022) highlighted the positive impact of research projects on enhancing student nurses' understanding and practical application of evidence-based care in Norway. However, it is worth noting that none of these studies specifically explored student nurses' experiences during conference presentations, which is an essential component of the dissemination phase in the nursing research process.

Presenting research at academic conferences is known to enhance undergraduate student research productivity. Little (2020) found that participation in undergraduate academic conferences can positively impact the development of communication skills, self-authorship, and increased engagement with extracurricular activities among non-nursing students. Polit and Beck (2018) added that disseminating research findings signifies the culmination of the researcher's efforts and is vital for supporting nursing practice. Academic conferences provide valuable opportunities for researchers to present their findings as podium or poster presenters. These conferences serve as dynamic platforms for exchanging research findings, soliciting input, fostering meaningful dialogues, and fostering collaborations among experts in the field. In line with the importance of joining academic conferences, article 1 of the CHED Memorandum Order (CMO) No. 63 Series of 2017 in the Philippines emphasizes the importance of higher education institutions ensuring that students engage in off-campus extracurricular activities to enrich their overall learning experience, in addition to regular classroom instruction. Ultimately, disseminating research findings through academic conferences contributes to advancing nursing practice and knowledge.

This study can address the knowledge gap by examining student nurses' experiences while disseminating completed research, focusing on their challenges, insights, and perspectives in presenting research findings at academic conferences. The findings can improve development and educational strategies and enhance student research productivity by providing insights into their specific needs in communicating their research. Moreover, the study's findings can contribute to cultivating a culture of effective communication and sharing in research, offering valuable guidance for tailoring support to students and creating a more enriching research experience. Additionally, the study can help develop policies supporting research dissemination, encouraging integration into the curriculum, and establishing best practices for organizing research symposiums in nursing education institutions. Lastly, the study contributes to a broader understanding of how research dissemination influences subsequent nursing practice, ensuring that research outputs are generated, effectively communicated, and integrated into the clinical setting.

2.0 Methodology

2.1 Research Design

To answer the research question, the researchers used a qualitative content analysis, which is well-suited for examining data collected from the student nurses' learning journals.

2.2. Research Participants

To ensure a focused collection of perspectives, a homogenous purposive sample of 25 student nurses served as the sources of learning journals. These student nurses experienced presenting their group research, once or twice, at off-campus academic conferences organized at local, regional, national, or international levels. These conferences included local and regional events without any competition. Moreover, two national and one international conference involved research dissemination and competitions. The organizers of these conferences determined whether the student nurses would participate as oral or poster presenters based on their discretion.

2.3. Research Instrument

The institution's Research Development and Extension Officer (RDEO) collected learning journals from each student nurse after a research presentation at an off-campus academic conference to ensure adherence to the policies and guidelines in the conduct of off-campus activities as outlined in Section 12 of CMO No. 63 Series of 2017. These journals documented student nurses' experiences from the preparation stage to the presentation of their group research at off-campus academic conferences. The researchers utilized these learning journals as the research instrument for their content analysis. Among the 25 student nurses, eight had the opportunity to present their group research twice at different conferences, leading the researcher to analyze 33 learning journals.

2.4 Data Gathering Procedures and Analysis

After securing endorsement from the Dean of the Department of Nursing, the researchers submitted a request letter to the college president to secure approval to conduct the study. Following this, the researchers obtained a list of students who had experienced joining off-campus extracurricular academic conferences from the RDEO. To proceed, they secured informed consent from these students to ensure their awareness of how the researchers would utilize their learning journals.

To facilitate analysis, the researchers converted the hard copies of the learning journals to a digital format using Google Lens. Subsequently, they uploaded the digital copies to Google Docs, enabling easier collaboration and restricting access to only the researchers. Each learning journal underwent multiple thorough readings to understand the entire context comprehensively.

During the data analysis, the researchers followed the practical guidance outlined by Erlingsson and Bysiewicz (2017). They started by getting familiar with the whole data set through multiple readings of each learning journal while maintaining awareness of their preconceived ideas, beliefs, and biases on the phenomenon of interest. Subsequently, they broke down the text into smaller, meaningful parts and summarized them. They created 21 descriptive codes to capture the main ideas of each part. The researchers then grouped these codes and formed eight categories that addressed critical aspects of each data. They identified two themes from these categories that captured the meanings present in the information. The researchers also ensured that they coded the data from this study similarly by following Tracy's steps on engaging in inter-coder reliability by percentage agreement. They reached an agreement rate of 96%, indicating consistency in their analysis.

2.5. Ethical Considerations

The researchers assured the students that their identities and learning journals would remain anonymous and confidential throughout the research process, participation was voluntary, and they had the right to withdraw at any time. After obtaining informed consent from the student nurses, the researchers requested anonymized and de-identified hard copies of their learning journals from the RDE officer.

3.0 Results and Discussion

The content analysis of student nurses' learning journals yielded two themes, each with four categories: The Transformative Pathways to Research Presentation and The Transformative Power of Research Presentation.

Theme 1: The Transformative Pathways to Research Presentation

This theme captures the challenges and growth opportunities the student nurses encounter as they prepare for their research presentations at academic conferences. It includes the following categories: Psychological Preparedness Challenges, Logistical Challenges, Supportive Collaborative Networks, and Mastery through Practice.

Psychological Preparedness Challenges

Student nurses experienced mixed emotions upon receiving notification to present their research at a conference. They felt excited yet nervous, creating a rollercoaster of anticipation and anxiety as they prepared for the event. One poster presenter at the national level shared,

"When this research congress accepted our paper, I got excited yet nervous, especially since it was my first time attending an event like this."

Another poster presenter at the national level expressed,

"As the designated spokesperson and group leader, things happened in my personal life that affected my academic life, particularly research, throughout the research process. In addition to being grateful and inspired while designing the poster, I also doubted and asked why I was doing these things."

The findings of Vecardo et al. (2019), who explored the experiences of Filipino faculty researchers in writing and disseminating their research, support the psychological preparedness challenges reported by the student nurses in this study. The authors observed similar emotional fluctuations, noting that the anticipation and anxiety experienced by researchers can significantly impact their performance and motivation.

Logistical Challenges

Student nurses also faced various logistical challenges during the preparation process for research presentations. They needed assistance in creating engaging and visually appealing research presentations. Balancing

responsibilities and managing time effectively added to the complexity. As one poster presenter at the international level shared,

"We needed help with doing our template and the designs. Having less opportunity in graphic design, we raised the idea of hiring someone outside the institution to do ours with the group, but we are still waiting to receive a response."

Another poster presenter at the national level described,

"As we walked home, I felt like something needed improvement that I could not recall until one of my groupmates messaged me about the format. Adrenaline surged through my veins. I rushed to modify the document format as I stood in front of the ER. Thankfully, I could send the abstract to the allotted email two minutes before midnight."

The need for travel and the absence of accommodation for other students further compounded the challenges, making the preparation more demanding. Another poster presenter at the national level described,

"Another disappointment was the lack of accommodation, which felt overwhelming, especially with the pressure of the forthcoming research congress."

Additionally, ensuring active involvement and collaboration among their research team members was a hurdle. An oral presenter at the local level mentioned,

"As we geared up for our presentation, some of our group members could not attend to assist in creating our video presentation."

These logistical challenges in creating engaging preparations and managing time further emphasize the complexities of preparing for research presentations, as supported by the findings of Vecardo et al. (2019). The authors noted that faculty researchers faced similar logistical hurdles in preparing for research presentations. The logistical challenges faced by student nurses in this study are also consistent with the findings of Riastini et al. (2020), who examined student nurses' experiences conducting research in Indonesia. The authors identified challenges such as typographical errors, difficulty finding relevant literature, and lengthy permit processes, which mirror the logistical issues encountered by the student nurses in the current study.

Supportive and Collaborative Networks

Mentors and peers played a crucial role in providing guidance and fostering collaboration. Student nurses received valuable assistance, advice, and encouragement from these supportive individuals, boosting their confidence as they refined their presentations. As one poster presenter at the national level shared,

"Kudos to our research instructors who inspired and pushed all of us to join even though we were unsure and doubting ourselves."

Another poster presenter at the national level expressed,

"My group mates and I worked diligently to create an informative poster to support our research."

The critical role of mentors and peers in guiding and motivating student nurses is consistent with the findings of Vecardo et al. (2019). The authors highlighted the significance of supportive networks in the research dissemination process. Tupall et al. (2022), which emphasized the importance of sharing new ideas among student nurses and mentors, learning as a group, and active participation as essential components of supervision in undergraduate nursing research, also mirrors the supportive and collaborative networks described in the present study.

Mastery through Practice

Despite the student nurses' busy schedules, student nurses dedicated themselves to enhancing their presentation and communication skills through intensive practice. As one poster presenter at the national level noted,

"Aside from preparing our poster, I also had to read and review our manuscript because I already needed to remember some of its contents."

An oral presenter at the national level added,

"My preparation makes me busy. At the end of each class, I needed to reread our research paper to recall our study, even on the day we travelled to Manila."

The commitment of student nurses to intensive practice underscores the importance of skill development in disseminating research, as the study conducted by Rushton et al. (2019) reflects. The authors examined the experiences of each active participation in academic conferences for high school science students. They found that the students experienced growth in self-confidence and research confidence through dedicated practice. This finding is also consistent with the study of Grønning (2022), which highlighted the positive impact of research projects on enhancing student nurses' understanding and practical applications of evidence-based care in Norway. The current study's findings on the importance of mastery through practice align with Grønning's observation on the benefits of research engagement for student nurses.

Theme 2: The Transformative Power of Research Presentation

This theme illustrates the impact of the research presentations on student nurses, highlighting their personal and professional growth. It consists of the following categories: Unleashing Confidence, Learning through Observation and Adaptation, Interactive Presentation Experiences, and Nurturing Growth through Research.

Unleashing Confidence

Through the transformative journey, student nurses conquered performance anxiety and unleashed their confidence as presenters throughout their transformative journey. They overcame their nerves and delivered presentations with conviction, gaining confidence through the experience. As one poster presenter at the international level shared,

"...so I was anxious about attending the event. However, as they say, everyone has a first time, so I gathered all my courage and confidence to finish the two-day event, and no matter the outcome, I know I did my best."

Similarly, an oral presenter at the regional level expressed,

"But there's more—the question-and-answer portion. I wished, jokingly, that sana lamunin nalang ako ng lupa (I wish the ground could swallow me), but happily, I answered the question."

This statement highlights the impact of facing and overcoming challenges, ultimately resulting in a sense of confidence. As another oral presenter at the regional level proudly wrote,

"I stepped down that stage with a sense of accomplishment for accepting challenges and conquering fears."

This category aligns with Vecardo et al.'s (2019) findings on the impact of conferences on personal and academic development, where the authors observed a similar transformation in faculty researchers' confidence and competence.

Learning through Observation and Adaptation

Student nurses acquired valuable skills by actively observing effective presenters and adapting techniques. They adjusted their approach to meet the audience's and panelists' expectations, enhancing their presentation abilities through this process. As one poster presenter at the international level noted,

"As I look at them presenting their studies, I envy their confidence; every word they speak is convincing, which can convince you to listen more."

Another poster at the national level shared,

"Upon arrival at the venue, unexpected challenges arose. The presentation format differed from what I had anticipated, with limited time for poster viewing and no opportunity for further explanation. This disappointment, however, transformed into surprise and joy as people showed genuine interest in our research poster."

This category is consistent with the study by Campbell et al. (2021), who examined graduate student learning at academic and professional conferences. The authors found that conferences enhance students' communication and presentation skills through observation and adaptation. Similarly, Little's (2020) study supports the notion that conferences provide valuable opportunities for learning through observation and adaptation.

Interactive Presentation Experiences

Engaging in the dynamic nature of research presentations, student nurses actively interacted with the audience, skillfully handled questions, and received feedback. This interactive experience allowed them to refine their skills and embrace the challenges of presenting at academic conferences. An oral presenter at the national level recounted,

"A moment that remains etched in my memory is when, after concluding our research presentation, an older adult approached me and sincerely remarked, 'Ang ganda ng study niyo (Your study is beautiful). Congratulations!'"

Another oral presenter at the regional level shared,

"During the Q&A session, I addressed a panelist's query about the potential impact of my research on families and communities, drawing from our recommendations."

A poster presenter at the international level added,

"It was nice that the other panel asked questions about our research study and suggested how to enhance it so we could join conferences like this in the future and different countries."

Buckley and Lee's (2021) study, which explored the impact of extracurricular activities on the student experience, supports the dynamic nature of research presentations and interactive experiences of the student nurses in the current study. The authors found that conferences enhance college students' skills, including communication and research competencies.

Nurturing Growth through Research

Presenting research had a profound impact on student nurses. They gained a better understanding of research methodologies by delivering research presentations. Sharing their findings at conferences fostered a sense of accomplishment and pride. A poster presenter at the national level expressed,

"It is not about the outfits or the use of vocabulary words when presenting; it is about your knowledge and desire to share and contribute your output to the congress. A key takeaway from the conference experience is that the essence of presenting research lies in the depth of knowledge and the passion to disseminate findings rather than superficial aspects like appearance or vocabulary."

Another poster presenter at the national level expressed,

"Presenting our study allowed me to refine my communication skills and acquire the ability to express the contents of our research effectively and concisely."

Additionally, they recognized the significance of networking and establishing meaningful connections within the research community, paving the way for future collaborations and projects. A poster presenter at the national level narrated,

"The most memorable phrase that he told me, though, was, Kung mag master ka, pwede mong ituloy 'tong research na ito. Palawakin natin yung population 'tsaka location, para hindi lang Baguio. ('If you pursue a master's degree, you can continue

this research. Let's expand the population and location, not just in Baguio.'). When he said that, I was taken aback because I did not expect him to see our research as promising to the point that he wanted us to continue it. He continued, 'Kung balak niyong ituloy, iapproach niyo ako sa, Tutulungan ko kayo.' ('If you plan to continue, approach me, and I will help you.')

The transformative journey of student nurses' future academic and career paths, highlighting the long-term impact of experiential learning in nursing, supports Campbell et al.'s (2021) study on the growth of graduate students through conferences.

4.0 Conclusion

Research presentations at academic conferences could lead to growth for student nurses as they overcome challenges, gain confidence, and refine their presentation skills through practice, observation, and adaptation. The supportive networks and interactive experiences encountered during these conferences also contribute to developing their passion for research and potential collaborations. Academic institutions can provide psychological and logistical support services and foster a supportive educational environment. Nursing research mentors can implement structured mentorship programs and promote practice and feedback sessions. Student nurses themselves can engage in deliberate practice, leverage learning opportunities, and network and collaborate with peers and professionals. Conference organizers and research offices can create platforms for student presenters, offer workshops and seminars, and facilitate networking opportunities. Future researchers should consider expanding the geographical scope, recruiting more student nurses, and diversifying data sources. Broadening these aspects will not only address the limitations of this study but also provide a more comprehensive understanding of the phenomenon under study.

5.0 Contributions of Authors

Jayson M. Bimuyag, the first author, is primarily responsible for publishing this research manuscript. He conceptualized the study, wrote the manuscript with input from the coauthor, and handled submission correspondence and archival data. Christopher Ian N. Gaerlan, the coauthor, wrote the significance of the study and sought external expert advice during the conceptualization of the paper, which contributed to the study's aim, provided input for data analysis and interpretation, and reviewed each draft of the manuscript. Both authors collected the learning journals from the RDEO and converted each document to soft copies, which they analyzed in this study.

6.0 Funding

This work did not receive a particular grant from any funding organization.

7.0 Conflict of Interests

Both authors confirm that they do not have any conflicts of interest.

8.0 Acknowledgment

The authors sincerely acknowledge Dr. Cleofe P. Kollin, the College President, for approving this research. They also express their appreciation to Mr. John Michael P. Jarata, Dean of the Department of Nursing, and Ms. Jessica W. Balag-ey, RDEO, whose endorsement and support significantly contributed to the completion of this research. Special thanks to Mr. Brando B. Badecao, Level 3 Coordinator of the Department of Nursing, for his unwavering support and guidance as a research mentor.

9.0 References

- Buckley, P., & Lee, P. (2021). The impact of extracurricular activity on the student experience. *Active Learning in Higher Education*, 22(1), 37-48. <https://doi.org/10.1177/1469787418808988>
- Campbell, A., Wick, D., Marcus, A., Doll, J., & Hammack, Y. A. (2021). "I felt like I was not just a student:" Examining graduate student learning at academic and professional conferences", *Studies in Graduate and Postdoctoral Education*, Vol. 12 No. 3, pp. 321-337. <https://doi.org/10.1108/SGPE-08-2020-0061>
- Commission on Higher Education [CHED]. (2017). Guidelines for Off-Campus Extracurricular Activities for Higher Education Institutions (Memorandum Order No. 63, Series of 2017). Retrieved from <https://ched.gov.ph/wp-content/uploads/2017/10/CMO-63-s-2017.pdf>.
- Erlingsson, C., & Brysiewicz, P. (2017). A hands-on guide to doing content analysis. *African Journal of Emergency Medicine*, 7(3), 93-99. <https://doi.org/10.1016/j.afjem.2017.08.001>
- Grønning, K., Karlsholm, G., & André, B. (2022). Undergraduate nursing students' experiences of conducting clinical research projects in their bachelor theses – A qualitative study. *SAGE Open Nursing*, 8. <https://doi.org/10.1177/23779608221094537>
- Little, C. (2020). Undergraduate research as a student engagement springboard: Exploring the longer-term reported benefits of participation in a research conference. *Educational Research*, 62(2), 229-245. <https://doi.org/10.1080/00131881.2020.1747360>
- Polit, D. F., & Beck, C. T. (2017). *Essentials of nursing research* (11th ed.). Lippincott Williams and Wilkins.
- Riastini, N. P., Sukraandini, N. K., & Candrawati, S.A.K. (2020). Nursing student lived experience in conducting research paper at STIKes Wira Medika Bali. *International Journal of Nursing and Health Services (IJNHS)*, 3(2), 267-274. <https://doi.org/10.35654/ijnhs.v3i2.232>
- Rushton, E. A., Charters, L., & Reiss, M. J. (2019). The experiences of active participation in academic conferences for high school science students. *Research in Science & Technological Education*, 39(1), 90-108. <https://doi.org/10.1080/02635143.2019.1657395>
- Tuppall, C. P., Nonog Jr., A.C., Tuppall, S.M.P., Reñosa, M.D.C., Ninobla, M.M.G., Roa, M.N.T., & Tu, C.S. (2022). "A life without a supervisor is like a seed that never grows": Students' experiences of undergraduate nursing research supervision. *Nurse Media Journal of Nursing*, 12(3), 300-315. <https://doi.org/10.14710/nmjn.v12i3.48952>
- Tracy, S.J. (2013). *Qualitative research: Collecting evidence, crafting analysis, communicating impact*. Wiley-Blackwell.
- Vecaldo, R., Asuncion, J. E., & Ulla, M. (2019). From writing to presenting and publishing research articles: Experiences of Philippine education faculty-researchers. *Eurasian Journal of Educational Research*, 19(81), 147-164.

"I deserve this": A Phenomenological Study Toward Online Impulse Buying Behavior of Service Contractors

Kristine N. Somera

Polytechnic University of the Philippines, Sta. Mesa, Manila, Philippines

Author Email: krisome22@gmail.com

Date received: June 3, 2024

Date revised: June 20, 2024

Date accepted: June 28, 2024

Originality: 97%

Grammarly Score: 99%

Similarity: 3%

Recommended citation:

Somera, K. (2024). "I deserve this": A phenomenological study toward online impulse buying behavior of service contractors. *Journal of Interdisciplinary Perspectives*, 2(8), 239-254. <https://doi.org/10.69569/jip.2024.0257>

Abstract. With the rising popularity of digital marketplaces, the phenomenon of "impulse buying" online has become increasingly common. This study examined the lived experiences of Filipino service contractors regarding this phenomenon, utilizing the Hedonic Motivation Theory and the Stimulus-Organism-Response framework to explore the driving forces behind their inclination for online impulse buying and their perception of "I deserve this." The researcher used the Impulse Buying Scale developed by Rook and Fisher in 1995 to identify ten service contractors from the province of Aurora who scored high and met the specific criteria. These ten participants were interviewed individually online. The data analysis revealed six categories summarizing the lived experiences of service contractors regarding online impulse buying behavior: a) The emergence of online impulse buying behavior among service contractors, b) The motivations behind service contractors' online impulse buying, c) The positive or therapeutic effects of online impulse buying, d) The negative impacts of online impulse buying, e) The extent to which service contractors engage in online impulse buying, and f) The coping strategies employed by service contractors in response to online impulse buying. This study provides valuable insights for researchers, particularly those in the Philippines, who wish to explore various dimensions of online impulse buying.

Keywords: Online shopping; Impulse buying; Service contractor.

1.0 Introduction

Nowadays people live in a world where almost everyone relied in digital technology. With internet access, one can order food with a click, be picked up in a minute, reserve a house instantly, and of course, purchase things online right away. Indeed, today's market had become fast-paced, and consumer driven. Overtime, e-commerce gained popularity, allowing consumers to shop online and have their ordered things delivered to their door a few days later (Legaspi et. al, 2016). As a result, this increased the frequency of buyers buying online, drawing the researchers' attention on the phenomenon of impulse buying.

Impulse buying is the term used to describe the unplanned, sudden, and strong desire a consumer has to buy goods or services (Anas et al., 2022). Aside from a sudden drive to act, it is also defined by an imbalanced emotional state, a diminished capacity for cognitive evaluation, the occurrence of psychological conflict, and consuming without considering the implications (Aquino et al., 2020). Previous studies revealed that a person's emotional state could trigger impulsivity (Borromeo et al., 2022) and impulse buying could be triggered by negative or down-low moods. Moreover, Lee and Bottger (2017) stated that feelings of consummatory indulgence or the apparent freedom to purchase anything could release those seeking retail therapy from the psychological burden of their negative emotions, particularly in the case of unplanned purchases.

Foreign research studies made on impulse buying have focused more on studying different generations such as generations X, Y, and Z while existing local studies were conducted among college students, millennials, and elementary teachers. Even though impulse buying behavior had previously been the subject of much research, the researcher believed that there was so much to learn about this phenomenon in the context of service contractors as there are no studies focusing on this sector yet. According to Chow and Saskatchewan (2020), the phrase "*I deserve this*" embodied the notion that impulse buying behavior is usually justified by a person's sense of entitlement or reward. This is a topic worth considering psychologically in the context of service contractors in the Philippines. Hence, this phenomenological study delved into the underlying meanings and motivation behind the service contractors' tendency for online impulse buying, considering the setbacks of their employment type, and comprehended their perception of "*I deserve this*" following each impulsive purchase of products on the various online shopping stores. The study provided valuable insights for academic and practical usage.

2.0 Methodology

2.1 Research Design

The present study examined the lived experiences of the service contractors on their online impulse buying behavior using a qualitative research design to give comprehensive information and deep insights. The researcher utilized the Interpretative Phenomenological Analysis (IPA) to describe and interpret the meaning of their lived experiences in order to reveal the meaning that exists within experience and to convey felt understanding in words (Smith & Osborn, 2015). In a 'participant-oriented' research, interpretative phenomenological analysis gives interview subjects or study participants the freedom to tell their own stories about their lived experiences without fear of retaliation or legal repercussions. Since IPA is a qualitative research technique, it gives researchers the best understanding of the most intimate decisions made by research participants during their lived experiences (Alase, 2017).

2.2 Research Locale

The study was carried out in the province of Aurora, Philippines. The researcher distributed the survey online among the service contractors in the eight (8) municipalities of Aurora namely Dipaculao, Baler, Maria Aurora, San Luis, Dinalungan, Dingalan, Casiguran, and Dilasag, to identify the key participants of the study. Aurora province has predominantly rural population and is situated in the Central Luzon region. Its capital is the municipality of Baler. The province area occupies 3, 133.40 square kilometers (1 209.81 square miles).

2.3 Research Participants

This study selected participants who were representatives of the population of people who engaged in impulsive buying behavior using a purposive sample strategy and competent judgment. Ten (10) key participants were selected from among the one hundred (100) service contractors in the province of Aurora who completed the Impulse Buying Scale formulated by Rook and Fisher in 1995 to determine the level of their tendency for impulsive purchases. The selected participants scored high in the Impulsive Buying Scale, getting at least 31 points. In addition to this criteria, the selected participants were also at the age range of 20 to 30 who have online shopping stores such as Shopee or Lazada installed in their cellular phones and were service contractors for at least one year.

2.4 Research Instrument

The researcher carried out two (2) procedures to capture the research's objectives. The first one was the survey for potential participants using the Impulse Buying Scale instrument, proposed by Rook and Fisher in 1995 to identify individuals with high tendency of impulse buying. It has been demonstrated by researchers like Akalain and Godelek (2018) that this scale, which measures impulsive buying, is valid and reliable.

Another research instrument used was the semi-structured interview guide which allowed the researcher and the participant to engage in an open dialogue. The participants were first asked about their demographic data using the Personal Data Sheet guide, asking about their feelings at the particular moment, and was followed up by the general question, "How has been your living situation as a contract of service worker?" followed by the interview guide questions. The researcher had this interview guide questions validated by psychologists to ensure that the guide questions will capture the lived experiences of the service contractors toward online impulse buying. The

script was also written in Filipino to make it easier to understand as the interview guide covers questions relating to their personal experiences.

2.5 Data Gathering Procedure

The researcher ensured that the study was carried out within the specified parameters and conditions. Initially, to purposely select the key participants for the study, a survey questionnaire – Impulse Buying Scale – was sent online through Google Form among one hundred (100) service contractors in the province of Aurora. The researcher sent the informed consent forms to the selected ten (10) key participants and shared them a file that discusses the nature and ethics of the interview. The researcher requested the participant's consent to record the entire interview, which was conducted electronically through the use of the Google Meet program. A list of guide questions that the researcher had developed was used as a framework for the interview. Follow-up questions were also asked based on the participant's responses.

Following the one-on-one interview sessions, the next step followed Alase's (2017) list of steps for data coding, analysis, and interpretation. These steps include reading through the interview responses to find common themes, going back and reviewing each transcript or listening to any recording devices for clarity, and capturing and representing the "core essence" of the research participants' "lived experiences". Thematic analysis, as employed in this phenomenological study of service contractors' online impulse buying behavior, proves to be a valuable tool for extracting recurring patterns and themes from their rich narratives and experiences in the digital marketplace (Carter et al., 2014). To establish rigor in the present study, the researcher employed reflexivity. The researcher conducted member-checking (Mc-Kim, 2023) to establish validity of the description of the lived experiences of the service contractors towards online impulse buying behavior.

2.6 Ethical Considerations

Ethical principles are of paramount importance to the researcher and the following were implemented throughout the research period.

Informed consent. To facilitate the research study, it is crucial to consider that the key participants must freely and voluntarily give their informed consent with their affixed signature, signifying their agreement to participate in the study to the researcher after the discussion of the purpose of the study.

Autonomy, confidentiality, and anonymity. The researcher conducted the interview in a one-on-one (researcher-participant) setting to make sure that the respondents were not influenced by other participants. Furthermore, the researcher assured confidentiality of the participants' personal information, responses, audio and video recordings, and transcriptions of the interview sessions conducted. Moreover, the researcher employed code names to the key participants to protect their real identity (Arifin, 2018).

Non-maleficence. An ethical guideline on the participant's world emphasizes that the researcher must include methods that ensure that participants are not coerced and that their treatment is not influenced by their decision to participate or not participate. The researcher puts the participant before the research without feeling pressured to finish the study in a way that prevented them from doing so and from taking the participant's effects into account (Arifin, 2018).

Debriefing. In case study participants experience excessive emotional stress, the researcher has devised protocols for providing them with follow-up care.

Incentives. The researcher gave the participants token of appreciation for their time and participation for the completion of the present study.

3.0 Results and Discussion

The analysis of data revealed six (6) categories that summarized the lived experiences of service contractors toward online impulse buying behavior. The categories generated consist of the following: (1) the emergence of online impulse buying behavior of service contractors, (2) the motivations of the service contractors toward online impulse buying, (3) the positive or the therapeutic effects of online impulse buying, (4) the negative impacts of online impulse buying, (5) the extent to which the service contractors will seek online impulse buying and (6) the coping strategies of the service contractors toward online impulse buying. The categories and themes are illustrated below in Table 1.

Table 1. Themes and sub-themes on the lived experiences of service contractors toward online impulse buying behavior

Themes	Sub-themes
The emergence of online impulse buying behavior of service contractors	• Coping mechanism • Self-concept and identity
The motivations of the service contractors toward online impulse buying behavior	• desire to escape from negative feelings and emotions • desire for immediate gratification
The positive impacts or the therapeutic effects of online impulse buying	• sense of achievement • stress alleviation • mood regulation
The negative impacts of online impulse buying	• financial stress • feelings of guilt and regret
The extent to which service contractors would seek online impulse buying	• desire for rewards • desire to heal the 'inner child'
The coping strategies of the service contractors toward online impulse buying	• mindful spending • self-control

Theme 1: The Emergence of Online Impulse Buying Behavior of Service Contractors

Participants have shared that they have already been engaging in online impulse buying behavior even before the COVID-19 pandemic. However, the restrictions that were imposed during this time, especially with the social distancing, and the fear that they will be infected with the COVID-19 virus, their impulse buying behavior online have intensified.

Coping Mechanism

Most of the participants revealed that engaging in online impulse buying behavior has become a coping mechanism, especially during the pandemic. Interestingly, seven (7) out of ten (10) participants thought that they have been engaging in impulse buying prior the pandemic but the restrictions of not being able to go outside during the pandemic has intensified their impulse buying online, hence, making them engage in online impulse buying for at least five (5) years already. For instance, Joward, whom according to him has been engaging in impulse buying for five years already, shared how he was isolated and got quarantined for twenty-eight (28) days and how impulse buying has helped him cope with the loneliness he was feeling at the time. He said,

"...when I was quarantined for twenty-eight days, we had our own room. So every after day of work, when I feel sad, I will search the orange app and browse so when I see something and I want it, I buy it."

In addition, Krisel, have shared that when Shopee and Lazada trended as online shopping stores, she has been buying online already, however, pandemic has increased her impulse buying behavior online. When asked about her perceived length of impulse buying, her answer was

"...maybe it's been five (5) years since Shopee and Lazada became trendy, but at that time, it wasn't much. It was just so recent when I became like this...impulsive...especially when...stressed."

On the other hand, Joy shared that her intense impulse buying started during the pandemic although she has been engaging in impulse buying when she buys things in physical stores. As she shared,

"...I always buy my cravings...especially when I am feeling stressed in my work...or when I feel being alone."

When asked if she was satisfied with the outcome of her behavior, she replied,

"Yes, I am very satisfied. I can sleep well. I feel like my problems disappear but come the next day, the cycle repeats...60% food, 40% stuff."

Similar to Joward's, Krisel's, and Joy's narratives, are the same stories of coping experienced by Anjannette, Jayvie, and Issa. They have been engaging in buying online when the online shopping stores such as Shopee and Lazada became popular but their impulse buying behavior online escalated during the pandemic. When they experience negative feelings and emotions such as being stressed, sad, or uneasiness, they will browse on the online shopping stores, add to their cart, and eventually checkout the products.

Many research on impulse buying behavior during the COVID-19 pandemic have showed that people used online impulse buying to deal with the stress of the coronavirus pandemic, as people make impulse purchases to recover control in the face of uncertainty. Indeed, the majority of research investigations indicate that online impulsive buying has increased significantly during the COVID-19 pandemic outbreak (Thakur et al., 2020). Individuals are experiencing higher levels of stress, despair, and anxiety as a result of the pandemic. Wang et al. (2021) stated that impulse buying can provide customers with psychological and physiological comfort, purposefully diverting their focus away from unfavorable emotions.

Self-concept and Identity

Several participants have shared that another reason why their impulse buying tendency is high is because the things that they buy add up to their value as a person and thus forming their self-concept and identity. The products that they buy out of online impulse buying help them feel better about themselves.

Three (3) participants shared how they are encouraged to buy impulsively because of the popular influencers they watch and follow online. When they see these influencers using certain items or wearing a particular brand, they tend to buy the same product impulsively because they believe it will raise their self-value and thus form a positive self-concept. Reymart shared,

"...through the influence of other people that you see on the internet, through their reviews, and then through the image that you see. It's really affecting because you'll compare like, oh, I'll choose this one because I think it suits me because you've seen the photos and then the information is complete..."

He added,

"It's good because you feel like you have something you can flex... that you have that thing... I feel like a star...that I can buy something that they do not have."

Similarly, Seffy claimed,

"Maybe what Sir Joshua said is also one of the factors, like for instance, you invest in yourself...like I buy things for myself to look good, to be presentable. You know, it's actually for myself so I think I deserve it. I want to be presentable in the eyes of other people because I am a teacher and most of the time, as teachers we face a lot of students and workmates so maybe that is another benefit. In return of engaging in impulsive buying, it doesn't just go to nothing, it helps us with something, as for me with those clothes...material things that I buy, it can add value to me personally and all the stuff."

In addition, some participants also shared how buying expensive items impulsively online makes them feel high value as well. They incorporate this behavior into their self-concept and identity.

As mentioned above, impulsive buying is used as a coping method to avoid the negative emotions associated with low self-esteem and to enhance one's status through products related to one's identity (Minor et al., 2017). When people notice a discrepancy between their projected self-images and their aspirations, they may get tempted to compensatory objects and spend impulsively to acquire them for self-presentational goals. Qualitative research has shown that people can make impulsive purchases based on perceived self-discrepancies, motivating them to acquire self-related things (Minor et al., 2017). In addition, in the literature study of Marisa Toth (2014) on consumer behavior, it was suggested the consumer purchase products to maintain status, boost self-esteem, and to enhance self-concept.

Theme 2: The Motivations of Service Contractors Toward Online Impulse Buying Behavior

The majority of the service contractors expressed their living situations as challenging. They mentioned that scrolling through various online shopping stores after a long tiring day of work helps them escape their reality. In addition, they find the experience of purchasing products online, even if they plan not to buy in the first place, is rewarding and satisfying.

Desire to Escape From Negative Feelings and Emotions

Online impulse buying can temporarily escape and/ or distract from the stress and challenges associated with the participants' financial situation. All of the participants have shared that being a service contractor is not easy. Dave, a contract-of-service (COS) instructor for five (5) years, provides a share of his income to his family bills monthly. He has repeatedly mentioned the word mahirap to describe his current job position. He stated:

"As a COS worker, it's a bit difficult because the salary is meager and considering that there are so many expenses and things are expensive to buy, it's quite difficult to be a COS especially in today's high inflation era..."

However, mentioning that although even the basic needs are already very pricy, being able to buy online gives him a sense of happiness thus makes him temporarily forget about the tiring day he has spent doing his job. He shared,

"when you're tired all day and then you look online, it's like a good feeling because then you see something, you'll be able to say 'oh, that's beautiful' and then I'll be able to say 'ah I need it, I'll go ahead and purchase it'...that fast."

Dave's narrative is the same as Marc, a service contractor for three (3) years, who also describes his experience as COS worker as 'quite difficult' because he needs to budget his money in order to save while buying the things he wants. Since the phenomenon of online buying is more convenient than buying in the physical stores, Marc mentioned that his tendency to impulsively buy increases. Whenever he sees something that he likes, he does not think twice but checkout the product right away, especially when he is feeling sad. He said,

"It's a satisfying feeling when you get what you want. You know, the happiness you get when checking out seems to be different. But what I noticed about myself is that, most often when I checkout suddenly or randomly, those are the times when I feel sad. You know, it's like you're looking for something to get entertained, so I ended up being engaged in impulse buying."

Hence, he resorts to online shopping to fill up the void that he is feeling:

"Checking shopping markets every night becomes a habit for me", said Marc.

Another participant, Anjannette, also shared that whenever she is feeling negative emotions, what she does is to shop online, add to cart, and then checkout to ease the burden she is feeling. As she explained,

"...when I check out, I feel better when I do that. Sometimes my problems or thoughts disappear for a while when I turn my attention to online shopping..."

She added,

"when you're bored sometimes, you browse through online shops so you can also checkout the ones that have been added to your cart."

Another participant, Joward, who has experienced being isolated during the pandemic, also shared how engaging in impulse buying has helped him in the situation. Since it made him anxious and stressed, he used this as an escape. Later on, whenever he feels stressed, he turns to online shopping. He stated,

"When I feel more stressed, I buy more impulsively; it is a way to escape my responsibilities".

An earlier study by Pacheco et al. (2021) proposed that those who react strongly to stress engage in impulsive buying to lessen the intensity or frequency of their unpleasant emotional experiences. Consequently, these people's pleasant emotions and moods are temporarily elevated by the satisfaction they get from impulsive purchases. Supported by other studies, Febrilia and Warokka (2021) revealed in their study on online impulse buying among women that they access the internet and specific e-commerce platforms just for fun and then accidentally decide to buy a product. According to Chan, Cheung, and Lee (2016), customers engage in online impulse buying when they feel pleasurable and aroused, among other positive affective reactions. Arousal is thought to trigger the process of impulsive purchase, while pleasure drives the behavior.

Desire for Immediate Gratification

Another significant finding in the study is that the desire for immediate gratification or the belief that buying certain items will alleviate stress can also drive impulsive purchases. Eight (8) out of ten (10) participants revealed that after the long day of work, they scroll in social media and go to online shopping applications such as Shopee and Lazada for retail therapy. The convenience and accessibility given by digital marketplaces also encourage impulse buying. For instance, Dave shared

"nowadays, it is very accessible. Everything is instant. For example, I have seen something of my interest in social media... I know that I want to have it so I proceed with checking it out. There is an instant gratification you get in online stores that there is in physical stores."

Marc also said that whenever he sees something beautiful in the online markets, he is most likely to buy it impulsively. He shared that even though he does not need the item right away such as clothes or shoes, the mere fact of imagining wearing it is already satisfying for him. He said,

"When I feel sad, I do not care if I will spend the money budgeted for other things, as long as buying the item even though out of an impulse, will ease the burden I am feeling."

Krisel, Joy, and Jayvie also shared that they achieve immediate gratification upon checking out even without considering the price of the item. They shared:

"Even if the purchased items are expensive or cheap, they really bring something that fulfills the feeling. It's very fulfilling so you're happy." (Krisel)

"I'm always at food panda or grab food. I always buy my cravings. I feel like the reason is the stress from work. The feeling of being alone. That you are not with your family. You don't know how to cook. So, it's like my stress reliever when I buy the things I want." (Joy)

"I'm also lazy so I prefer to receive the products directly and it's also good because what you see is what you get...it's hard to resist because it's hard to fall asleep because you want to buy. You will always think of the product you want to buy. It's like someone is whispering that I deserve it, so I'll buy it." (Jayvie)

Interestingly, Issa and Reymart shared that having extra money or upon receiving their salary prompts them to engage in online shopping to checkout products. As he described it,

"...when I feel like it, like I super like it, as long as I have money".

The same is true for Joward, whenever sees a product of his liking in an online shop, checks out the product right away even though it is not on his list. He said,

"... as an individual, there comes a point where we need to gratify ourselves on the things that we didn't have before, like shoes and clothes. So every day after work, when I feel sad, I will search on the orange app and when I see something that I think I can buy and that I want, I really buy it."

Generally, impulse buying behavior gives the participants an instant or immediate gratification. The convenience and accessibility of online shops drive impulse buying from the service contractors that give them an immediate sense of satisfaction upon checking out products without deep thinking. According to Rani (2023), tech-savvy millennials are constantly on the lookout for the best deals whenever possible. They desire rapid gratification in all aspects of life, including knowledge, shopping, eating, and entertainment.

Theme 3: The Positive Impacts of Online Impulse Buying

The study revealed that service contractors believe that online shops have more benefits than the traditional physical stores, one of which is the therapeutic effects that the participants experienced. This category highlights

the different aspects of how online shopping serves as a means of coping with emotions and achieving therapeutic effects.

Sense of Achievement

Participants' narratives resonate with the sense of achievement as they express the joy and satisfaction of receiving a purchased item, emphasizing the positive emotional impact of online impulse buying. Most participants describe the sense of enjoyment they get from impulse buying in terms of processing the ordered item, from the waiting game up to receiving the item. Seffy shared,

"When you buy the parcel, it is fun, it's a good feeling when you have that thing that you bought... that you have paid for... that came from your pocket... that came from your salary. That's the idea."

Furthermore, several participants refer to impulse buying online as a fruit of their hardwork. When asked to describe

"I deserve this" in their own definition of the phrase, majority of the participants have the same meaning when they say the common phrase upon checking out items. The following are the descriptions of the majority:

"...this is the fruit of my hardwork so this means I am giving myself that time or that source to enjoy because we have so many bills to pay that is why we are putting or setting aside money or some denomination for us to use for entertainment purposes and I am entertained by buying online...even at times out of an impulse" (Dave)

"...when I know that I have done or what I am doing is beyond what is required or what I have worked for the month... or what I have done is not just the required output to be done." (Joward)

"...because that is where you poured your hard work. So it is like when you say I deserve it, you think of the hard work that you have done so you can say you deserve it." (Seffy)

"...I deserve this because it will be my reward for myself...because I have accomplished something, and I am satisfied with my work. So when I feel a little tired, that is when I think I need to reward myself..." (Anjannette)

Overall, for the participants, they feel a sense of achievement as they feel a satisfying experience whenever they buy impulsively online because they deserve to buy things out of their hardwork at their respective jobs. The narratives of the participants are consistent with the previous researches that studied the relationship between impulse buying and customer satisfaction. The study of Widagdo and Roz (2021) stated that impulse buying has a positive and significant effect on customer satisfaction. Maqsood and Javed (2019 as cited in Widagdo & Roz, 2021) further claimed that unplanned purchases indeed provide satisfaction for buyers. Moreover, perceived enjoyment from digital markets also affects customer's impulsive buying behavior. More impulsive purchases are made when the individual further enjoy surfing in online shopping sites (Moreno, Fabre, & Pasco, 2022).

Stress Alleviation

It was revealed in this study that the majority of the service contractors resort to online impulse buying to lessen the stress they get from work. Six (6) of the participants used the term "therapeutic" to describe the feeling they experience when doing online shopping wherein impulse buying increases when they are stressed. For Anjannette, she browses online shopping stores whenever she is stressed and sad as this phenomenon serves as her coping mechanism. In addition, Joward shared that his everyday experience at work is unhealthy such that his workmates are toxic and the load given to him is too much for him, online impulse buying helps him to lessen the stress, which was at its peak during the pandemic. Moreover, for Krisel, her impulse buying behavior is higher when she is stressed.

"...my stress seems to be lessened because as COS, my mental health is so bad that we can't go home and even if it's a pandemic, your working environment isn't that healthy, it's toxic... in a way, the stress, sadness that I get from work, seems to lessen when I do online shopping and I do not mind if I buy something impulsively." (Joward)

Joy is also among the other participants who mentioned how impulse buying has helped her cope with the stress in her work.

"...especially when I'm alone. I'm always at food panda/ grab food. I always buy my cravings whenever I'm feeling stressed at work."

Further, Seffy shared,

"...of course you're stressed, you've had problems, so you're suffering...you're tired... so that's what I'm going to tell myself, that yes, I deserve this."

For Marc and Issa, they described the phenomenon as:

"...I can say that its impact is good on my emotional and psychological health. I use it to cope when I'm stressed or sad."

"...it is my coping mechanism when I'm stressed, or sad or feeling something, that's what I do, I shop online, add to cart, and then checkout...it makes me feel better when I do it."

Previous studies also revealed link between stress and impulse buying. For example, the majority of people purchase things on impulse in an attempt to temporarily relieve the bad emotional states brought on by stress (Sullivan, 2023). A study found out that persons who feel stress at work tend to lose control and end up engaging in impulsive buying behavior as a coping technique (Shams et al., 2021). According to predictions made by clinical and applied psychology, stress makes people more hyperaroused and impulsive (Balducci et al., 2011; Dell'Osso et al., 2006; Weiss et al., 2012 as cited in Shams et al., 2021). People with higher emotional intelligence experience less of this loss of control than those with lower emotional intelligence.

Mood Regulation

Several studies reveal how engaging in online impulse buying plays a role in regulating the participants' emotions. A participant described how receiving and using new purchases brings her happiness, fulfilling her emotional needs and even influencing her mood positively. She associates this act of buying with anticipation and excitement, which contributes to her emotional well-being.

"It's what makes me happy. It's like it fulfills my happiness. For example, when the parcel arrives I am very happy and then I always wear it until it is soft. It really changes the mood. And I am always excited because I am looking forward to something." (Joy)

On the other hand, Joward's account highlights how online impulse buying became a coping mechanism during quarantine-induced isolation. When feeling sad or lonely, he turns to shopping apps as a means of seeking emotional relief.

"During the pandemic, especially when I was quarantined, it was 28 days, 28 days isolated in each room. So every after day of work (work from home), when I feel sad, I will search the orange app and when I see something I can buy and I want it, I buy it." (Joward)

Two (2) other participants use the phrase "we get high" to describe the feelings of happiness they get when engaging in online impulse buying. Since the act makes them happy, it in turn lessens the stress they are feeling at the moment. Krisel and Joy, on the other hand, resort to online impulse buying to seek comfort, especially from foods. On explaining the phrase "I deserve this", Jayvie includes mood regulation in her description

"...don't hesitate to checkout or buy no matter how expensive it is because you are working hard so you need to treat yourself a reward. It helps to boost your mood... your thoughts to calm you down. No matter how expensive it is..."

The service contractors' narratives underscore the role of online impulse buying as a strategy for managing emotions and providing a sense of comfort and happiness, especially in times of emotional distress and isolation. Literature reveals that the consumer's mood, whether positive or negative, is linked to impulse buying. That is,

the state of mind of the consumers influences consumers to buy impulsively (Sun & Wu, 2011 as cited in Pinto, 2021).

Theme 4: The Negative Impacts of Online Impulse Buying

The current study revealed the same results to prior studies that online impulse buying has also negative impacts on the individual, particularly on their financial well-being and emotional state. There are two (2) participants who have shared that initially, they see online impulse buying as a self-reward system but eventually become a source of financial stress. Several participants share the same sentiment with these two participants saying that due to mounting bills and expenses, their financial troubles exacerbated. In addition, the service contractors reveal a complex emotional burden, involving feelings of guilt associated with increased financial obligations from impulsive purchases and the internal conflict between justifying indulgence and experiencing regret.

Financial Stress

This category explains how participants like Joward and Reymart initially feel that impulsive online shopping may have a positive impact, serving as a self-reward system; however, over time, it evolves into a source of financial stress, particularly as the bills accumulate and contribute to mounting stress. The ability to resist impulsive buying is tied to their financial well-being. Joward highlights how impulsive buying can be helpful when there is a genuine need, like acquiring a mini PC or a monitor when no nearby physical stores are available. On the other hand, Reymart stresses that the lack of savings and limited budget due to impulsive purchases adds to the multitude of problems, intensifying financial stress. Financial stress underscores the intricate relationship between impulsive online shopping and the emotional burden it imposes on the financial well-being of the service contractors.

"Maybe at first, the impact was positive because it's like a reward system for yourself, but as time goes on, it becomes a case of problems, especially as the bill grows, it adds to my stress, especially with Shoppepay. So as long as I can control myself from buying, I don't do it, but to be fair, online markets helped me, for example when I needed a mini PC with a monitor, I guess it's the convenience that you've experienced, especially when we don't have anything nearby to buy from." (Joward)

"As mentioned, there is always nothing left, no savings. It seems like you have a lot of problems and you don't know how to handle expenses because the budget is limited so it will really cause stress." (Reymart)

Few of the participants also mentioned that they experience financial stress upon the delivery process of the item checked out from the online shopping store. For instance, for Anjannette,

"...you're clearly excited at the same time stressed because of the budget... you're not sure if the budget or the money is enough, especially when your parcel is about to arrive."

This indicates that even though the product is not on the list of the to-buys of the participant, they engage in impulse buying even without having the budget at the time the product was purchased online out of an impulse. This later leads to a problem in their financial well-being. Likewise, Jayvie shared the same experience with Anjannette's. She shared that the delay of salary causes her to worry if she can pay the parcel that is coming,

"...sometimes the salary is delayed among COS so there are times when I have checked out and then it turns out that the salary will not be paid that time so I am worried...so I have no choice but to borrow from my friends so there are many times like that."

Another problem that causes financial stress to the service contractors mentioned is the experience of having to use the other budget allocated for other things. Issa said,

"...I get to the point of overdoing online shopping to the point that I use the money budgeted for other expenses. So the money reserved for others goes to shopping when checking out."

This finding can be compared to previous studies (Lugay et al., 2023) which states that unnecessary purchases can lead to debt, as a response to mandatory payments being delayed. The stress caused by accumulating debts from

impulsive purchase behavior would significantly weaken a person's cognitive aspect. This increases anxiety levels and present bias, which leads to psychological and decision-making impairments.

Feelings of Guilt and Regret

Guilt and regret reflect a complex emotional experience among the majority of the participants like how they describe feelings of guilt arising from the anticipation of increased financial obligations when they make impulsive purchases during sales events or opt for installment payments. Six (6) out of ten (10) participants shared their experience in feeling guilty and regret after engaging in online impulse buying. Joy's narrative highlights the internal conflict between justifying such purchases as a well-deserved indulgence and the subsequent guilt that arises, emphasizing the dynamic nature of her emotions.

"I deserve it because I don't do it every day. I just tell myself that the money I will be spending is really not that much. But then the next day, I will feel guilty as thoughts of saving the money instead pops out in my mind." (Joy)

"Maybe the feeling of guilt is when I know when I didn't buy it on sale day... because of it will be installment, I know that in the next months, what I have to pay will increase." (Joward)

Furthermore, Krisel's account reveals the post-purchase disappointment and regret stemming from the realization that her impulsive acquisitions may not have fulfilled her initial desires, leading to a sense of wasted resources and frustration.

"But when the parcel came, I was very sad because it was already broken. It's really sad because I already spent money on it. It really is disappointing." (Krisel)

Dave feels guilty after engaging in online impulse buying because of the mismanagement of his money. He admits that there were times that he tends to buy things even if he does not need it at the moment. He said that it makes him happy emotionally but eventually feels guilty because of the occurring mismanagement of money. In addition, buying online impulsively makes him discontented on the things he possesses that he tends to increase the behavior of buying impulsively.

In addition, Marc, Anjannette, and Jayvie expressed that they feel guilt and regret because they have to limit their expenses after checking out online out of an impulse. Marc said,

"The challenges that I encounter is that I feel guilty when I checkout the product and I know that I have to save to have enough money left so that I can survive until the next salary. That's my coping, I need to sacrifice my other expenses in exchange for what I spent on being an impulsive buyer."

Previous studies, such as that conducted by Saleh (2012 as cited in Handayani et al., 2018), which found that impulsive purchases can cause regret in addition to happiness by bringing comfort, satisfaction, and pleasure, also support the finding that such purchases may cause guilt and regret, especially if the root cause of the impulse buying is negative emotions just like what the majority of the service contractors interviewed have shared. Likewise, in a study in the Philippines (Gallagher et al., 2017), they discovered that students experience guilt, anxiety, and shame, also referred to as post-purchase remorse that could lead to depression, after engaging in excessive internet shopping.

Theme 5: The Extent to Which the Service Contractors Will Seek Online Impulse Buying

This category discusses how the phenomenon of impulse buying reinforces the reward system of the service contractors as a form of self-indulgence, self-care, self-enhancement, and most importantly, healing their 'inner child'.

Reward System

Interestingly, all the participants mentioned online impulse buying as a very rewarding behavior aside from getting instant gratification from it. Seven (7) out of ten (10) service contractors stated that it is their reward for their hardwork in their respective jobs, for accomplishing the list of things he/ she should have done for the day, or even doing something that is expected beyond from him/ her. As Seffy puts it,

"My impulse buying doesn't go to nothing, it helps me. I reward myself for my efforts, hardwork, stress, and tiredness all throughout the day."

In addition, a few also mentioned purchasing the things they want immediately regardless of the price because that is from their hard-earned money. Reymart said,

"I deserve it because I worked hard for that thing. I went through a lot before I could attain it, so when I say I deserve it, I really mean it because I put a lot of effort into it."

Surprisingly, he also mentioned flexing the things he wants. For him, it is a satisfying feeling that he can flex something that others do not possess. And for him, he gains friends when he can flex something. He sees this as a rewarding experience for him. His narrative is supported by a recent study by Pacheco et al. (2021), who noted that product innovation influences consumers' lives and leads to impulsive purchases. They found that many buyers would rather purchase unique products that no one else has ever used, which leads to impulsive purchases made online.

In addition, for Joy, she believes that her value rises when she buys something expensive, which is most of the time out of an impulse. She said,

"...I was happy when I had one. I feel my value has increased. I was able to say that I can buy it."

Likewise, the COS workers like Krisel mentioned about how self-care leads her to buy impulsively. As she termed it, buying online becomes her comfort. She buys her favorite food and products she can use for her face and body as long as the advertisements are visually pleasing and the reviews are good, she would check them out without hesitation.

Half of the participants (5 out of 10) also shared the rewarding experience they get from opening the parcels they checked out on an impulse. Some of them described in detail how they achieve happiness from keeping an eye on the delivery process up to receiving the product. Their experience includes tracking the products every other hour, and getting excited when the rider calls their name when the product finally arrives. The excitement they experienced started upon checking out the product.

"... although it took a while for the parcel to arrive, the happiness is different when a parcel arrives, right? You thought someone gave you a gift but in fact, you just bought it. Even though you already know the item, you're still excited", Joy shared.

Few of the service contractors also became defensive on explaining how they see impulse buying as a rewarding behavior. Seffy said,

"...maybe motivation or mindset...why would I deprive myself of the things I want that is one way to reward myself?"

She added,

"...that's okay since you worked hard for it, right?... that's what I'm thinking."

Several participants have the same mindset as Seffy in explaining the phrase "I deserve it". For instance, when asked to explain his meaning of "I deserve this", Marc said,

"I deserve it because I want it (laughs)...I don't want to blame myself because I worked hard for what I bought. So I deserve to give myself what I want."

The experience of the service contractors of experiencing happiness and rewarding feeling were consistent with the study of Li (2011 as cited in Campus Writing Program, 2015) where they found out that many impulse buyers

seek pleasure in their unplanned purchases. Although they feel guilty of losing control when they engage in impulse buying, the pleasure they experience was rewarding for them. They may get enjoyment and an elated mood when they purchase the products of their interests.

Healing the Inner Child

The study revealed that when participants could not afford things in the past, they might buy them impulsively trying to make up for those feelings of not having enough when they were a kid. Joy shared,

"...motivations, it's like you heal your inner child. Im used to not being able to buy everything when I was a kid. I feel that is the source of people who are impulsive buyers. Because there were times when they couldn't buy things they want before... when they didn't have the capacity or the money to buy it, so now that they could buy what they wanted then they would just buy it... they don't think about it anymore."

Moreover, Dave said,

"...it's good when you feel like you're waiting for something to come...you're surprised...it's a different feeling to open it, it's like the kid inside you is happy. Maybe there are certain things we have there... that we were not given gifts when we were children, it's like when you buy and then you are trying to open it, 'hey, it's like there's an inner child being satisfied' that's how I feel."

There are six (6) participants who mentioned the healing effect of buying impulsively online, especially upon receiving the parcels. Further, they shared that the healing effect comes from the thought that they are now able to pay for the things that they wish to possess. Seffy described the feeling as

"I feel very happy. The feeling is good."

Likewise, participants added adjectives such as fulfilling, fun, satisfying, and rewarding to describe the healing effect for them. Several of them shared that most of the time, they buy impulsively of things they could not afford to buy as a kid like clothing items. One of them also mentioned about getting the attention of other people, especially gaining friends when he has something new that he believes other people do not possess. For him, it is healing because he loves getting attention he used not to have when he was younger.

The aforementioned results are in line with other research findings. Lo et al. (2016), for example, found that when studying the motivation factors behind online impulse buying, this behavior produces utilitarian or hedonic benefits that raise consumers' feelings of enjoyment and encourage more impulse buying.

Theme 6: The Coping Strategies of the Service Contractors Toward Online Impulse Buying

This category explains the experiences shared by participants about the interplay of cognitive and emotion-focused coping strategies as they gauge the cognitive awareness of financial priorities and the emotional responses tied to their spending choices by mindful spending and self-control.

Mindful Spending

The study reveals that upon being aware of their tendency to impulse buying, the participants came to a point where they have to do something on their behavior. Majority of the service contractors' coping strategies include mindful spending. Krisel's account underscores a cognitive approach, focusing on the alignment of needs before wants. Likewise, Dave's narrative on the negative impact of buying impulsively made him realize the need to remind himself to buy only the important things.

"Well, because we know that when compared to those in regular there are benefits compared to COS and then expenses seem to be difficult to budget if you don't budget properly so you need to align or think about it first. You have to ask yourself first what are your needs before your wants." (Krisel)

"I remind myself that I have to buy only the important things and I have learned it the hard way because there are times when I buy just because it is on sale and I say I will need it soon too. But honestly, the ones I bought online, I also sold them because I didn't need them either." (Dave)

Meanwhile, Joward has formed a tactic in buying online. He will checkout every after the salary is received to ensure that he has money when the parcel arrives.

"I am mindful of the date for example, at my work we were paid 5 and 25, so if I order, it should be after the salary so I know I have money. Mindful when the parcel will arrive."

Three (3) out of the ten (10) service contractors shared that they also control themselves from spending their money. For instance, instead of having more than three (3) meals a day, they have to control themselves from impulsively ordering food or meals.

The mindful spending of the service contractors on their impulse buying behavior can be found similar to previous research findings. Studies have shown that emotions and impulses, when managed and directed in the proper ways, can help prevent binge internet use and impulsive actions (Mascia et al., 2020) just like other research findings that indicate the practice of mindfulness will help alter consumption patterns (Hua, 2022).

Self-control

Half of the participants (5 out of 10) shared that they experience a sense of conscience and the need to restrain themselves during the checkout process. For instance, Joy talked about considering her budget for shopping out of her salary. Like other participants, although she claimed that it is tough for a service contractor to budget and save money, it is indeed needed. She claimed that with the salary she has, the amount of things she can purchase is limited but she has to remind herself that not all her salary should be put on her luxuries or on her impulsive purchases.

"It's hard to save when you're an impulse buyer and your salary is not enough." (Joy)

Meanwhile, Seffy became more aware of her expenses thus making her more capable of controlling herself when scrolling through the digital marketplaces. As she said,

"Now I know that if the money is short, that is the time that I will limit myself in buying the products. I would say to myself, 'oh okay, I will just buy it next month'."

There are also participants who revealed that their way to cope on impulse buying behavior is to address the root cause of the phenomenon which is by having the applications installed in their cellphones deleted. Therefore, to refrain from checking out impulsively, some participants, like Jayvie, have uninstalled and deleted the application for online markets. She describes feeling dissatisfied and unfulfilled when spending excessive time scrolling through shopping apps, suggesting that her avoidance of other activities and the emotional consequences of her actions led her to reconsider her behavior. Jayvie shared

"The time came when I have to uninstall apps... my time was running out and I was not satisfied. So the idea that I'm too lazy to scroll through other things. I feel that it is not good anymore."

Interestingly, there have been studies that reveal the link between self-control and impulse buying behavior. Lack of self-control is a characteristic that is found common among impulsive buyers along with the desire for pleasure, and the need to impress others. The self-control is negatively correlated with impulse buying, hence, as self-control increased, impulse buying decreased (Campus Writing Program, 2015). According to the study by Wang et al. (2023), self-control was the only factor that significantly reduced the likelihood of impulsive buying behavior. This suggests that those who struggle with self-control are more likely to make impulsive purchases online. Stated differently, customers with strong self-control are more likely to withstand temptation when they encounter different merchant marketing tactics. Therefore, customers are better able to regulate their impulsive purchase behavior when they have more self-control.

4.0 Conclusion

For service contractors, the phrase 'I deserve this' is an experience of rewarding oneself with the product of their interests, regardless of the price, after doing their duties and responsibilities of their respective job. Their impulse

buying behavior increases when they feel tired, sad, and stressed. In return, they experience happiness and excitement with the anticipation of receiving the item. Moreover, they engage in impulse buying behavior as a way to heal their inner child and experience therapeutic effects. However, these behavior leads to financial stress and feelings of guilt and regret.

Clinical psychologists, or the consumers with high tendency of impulse buying, could use the findings of the present study to create interventions such as behavior modification programs that address impulse buying behavior. The lived experiences of the service contractors could be used as a reference for future studies who wish to deepen the understanding of the phenomenon of online impulse buying among Filipino employees. Future researchers may also conduct a study that considers psychological variables such as personality traits, emotional states, and cognitive factors in understanding the online impulse buying of employees.

5.0 Contributions of Authors

The author solely contributed to the writing, encoding, analysis, and editing of the data.

6.0 Funding

This work received no specific grant from any funding agency.

7.0 Conflict of Interests

The author declare no conflicts of interest about the publication of this paper.

8.0 Acknowledgment

To the following people who have been crucial in helping me complete this thesis, I would like to offer my sincere gratitude. First and foremost, I want to acknowledge the Lord for His unwavering guidance and blessings throughout this academic journey. Without His grace, this achievement would not have been possible. I would also like to express my gratitude to the panel members Dr. Mallari, Sir Abat, Dr. Bien, Dr. Distor and my adviser, Dr. Christopher, for their invaluable guidance throughout my thesis journey. The expertise, mentorship, and commitment have been instrumental in shaping the successful completion of this thesis. I extend my deepest appreciation to my parents, papshy Edwin and momshy Perlita, whose unwavering support, sacrifices and love have been the driving force behind my success. My love for you guys has been my greatest motivation. I would also like to thank my siblings, Kuya Christian and bunso Christopher, for their constant support and encouragement. And to my Rens, for being my person, your belief in me have been a source of strength for me.

9.0 References

- Akalin, F. and Godelek, E. (2018). A Pre Study for Developing and Exploring an 'Impulsive Buying Scale' For Turkish Population. *European Scientific Journal*, 14 (32), 72. DOI: <https://doi.org/10.19044/esj.2018.v14n32p72>
- Alase, A. (2017). The Interpretative Phenomenological Analysis (IPA): A guide to a good qualitative research approach. *International Journal of Education & Literacy Studies*, 5(2). doi: 10.7575/aic.ijels.v5n2.p.9
- Anas, M., Khan, M.N., Rahman, O. and Uddin, S.M.F. (2022). Why Consumers Behaved Impulsively During COVID-19 Pandemic? *South Asian Journal of Marketing*, 03 (01), 7-20. <https://doi.org/10.1108/SAJM-03-2021-0040>
- Arifin, S. (2018). Ethical Considerations in Qualitative Study. *International Journal of Care Scholars*. DOI: 10.31436/ijcs. v1i2.82
- Aquino, S., Natividade, J., and Lins, S. (2020). Validity Evidences of the Buying Impulsiveness Scale in The Brazilian Context. *Psico-USF, Braganca Paulista*, 25(1), 15-25. DOI:10.1590/1413-82712020250102
- Borromeo, E., Cai, G., and Etrata, A. (2022). Factors Affecting Impulse Purchasing of Filipino Consumers in Convenience Stores. *International Journal of Social and Management Studies (IJOSMAS)*, 3(2). DOI: <https://doi.org/10.5555/ijosmas.v3i2.121>
- Carter, N., Lukosious, D., Dicenso, A., Blythe, J. and Nashville, A. (2014.) The Use of Triangulation in Qualitative Research. *Oncol Nurs Forum*. 41(5), 545-7. doi: 10.1188/14.ONF.545-547.
- Chan, T., Cheung, C., and Lee, Z. (2016). The State of Online Impulse Buying Research: A Literature Analysis. *Information & Management*. https://ourspace.uregina.ca/bitstream/handle/10294/9321/Chow_Angel_MA_SOST_FALL2020a.pdf
- Chow, A. and Saskatchewan, R. (2020). Retail Therapy or an Urge to Splurge: A Study of Impulse Buying Among University Students. https://ourspace.uregina.ca/bitstream/handle/10294/9321/Chow_Angel_MA_SOST_FALL2020a.pdf
- Febrilia, I. and Warroka, A. (2021). Consumer Traits and Situational Factors: Exploring The Consumer's Online Impulse Buying in the Pandemic Time. *Social Sciences & Humanities Open*. Vol. 04(01)
- Gallagher, C. E., Watt, M. C. Weaver, A. D. and Murphy, K. A. (2017). I Fear, Therefore, I Shop! Exploring Anxiety Sensitivity in Relation to Compulsive Buying. *Pers. Individual Dif*. 104, 37-42. Doi: 10.1016/j.paid.2016.07.023.
- Handayani, W., Anshori, M., Usman, I., and Mudjanarko, S. (2018). Why Are You Happy with Impulse Buying? Evidence from Indonesia. *Management Science Letters*. 8. 283-292. doi: 10.5267/j.msl.2018.4.019.
- Hua, C. (2022). The Correlation Between Mindfulness and Impulse Buying Behavior. *Highlights in Business, Economics, and Management*, vol (1)
- Lee, L. and Bottger, T. (2017). The Therapeutic Utility of Shopping: Retail Therapy, Emotion Regulation, And Well-Being. *The Routledge Companion to Consumer Behavior*
- Legaspi, J., Leoncio, I., Galgana, I., and Hormachuelos, C. (2016). Impulsive Buying Behavior of Millennials On Online Shopping. 4th National Business and Management Conference. Ateneo de Davao University
- Lo, L., Lin, S., and Hsu, L. (2016). Motivation for Online Impulse Buying: A Two-Factor Theory Perspective. *International Journal of Information Management*. 36, 759-772
- Lugay, C., Angeles, K., Espina, K., Lipata, B., and Sta. Cruz, J. (2023). A Predictive Model on a Consumer's Impulsive Buying Intention Towards Facebook Live Online Selling Using Binary Logistic Regression. *Proceedings of the International Conference on Industrial Engineering and Operations*. Management Manila, Philippines.
- Mascia M. L., Agus M., and Penna M. P. (2020). Emotional Intelligence, Self-Regulation, Smartphone Addiction: Which Relationship with Student Well-Being and Quality of Life? *Front. Psychol*. 11:375. doi: 10.3389/fpsyg.2020.00375
- McKim, C. (2023). Meaningful Member-Checking: A Structured Approach to Member Checking. *American Journal of Qualitative Research*. 07(02), 41-52 AJQR.<http://www.Ajqr.org>
- Minor, M., Hossain, T., and Vackar, R. (2017). The Impulse Buying and Perceptions Of The Physical Self. *College of Business and Entrepreneurship, University of Texas, Edinburg*. DOI: 10.4236/tel.2017.77129
- Moreno, D., Fabre, E., and Pasco, M. (2022). Atmospheric Cues Roles: Customer's Online Trust, Perceived Enjoyment and Impulse Buying Behavior. *Open Journal of Business and Management*. 10 (01) doi: 10.4236/ojbm.2022.101014
- Pacheco, D., Moniz, A., Caldeira, S. and Silva, O. (2021). Online Impulse Buying – Integrative Review of Psychological Factors. 10.1007/978-981-16-5063-5_44.
- Pinto, C. (2021). Understanding online impulsive buying. https://comum.rcaap.pt/bitstream/10400.26/38592/1/catarina_pinto.pdf
- Rani, M. (2023). A Study On Impulsive Buying Behavior in Online Shopping. *International Journal of Professional Business Review*. Miami, 08(03), 1-17
- Shams, H., Hussain, S., Feroze, T., Saki, A., Shams, M., Abbasi, K., and Munir, S. (2021). Stressors, Stress and Impulsive Buying Behavior: Moderating Role of Emotional Intelligence. 6, 164-174.
- Smith, J. and Osborn, M. (2015). Interpretative Phenomenological Analysis as A Useful Methodology for Research On the Lived Experience of Pain. *Br J Pain*, 9(1), 41-42. doi: 10.1177/2049463714541642
- Sullivan, G. (2023). Stress, Emotion Regulation, And Impulse Buying. *Researchgate*. 6(3):164-174

- The Phenomenon of Impulse Buying (2015). Campus Writing Program. University of Missouri. <https://cwp.missouri.edu/2015/the-phenomenon-of-impulse-buying/>
- Thakur, C., Diwekar, A., Reddy, B. and Gajjala, N. (2020). A Study of the Online Impulse Buying Behaviour during COVID-19 Pandemic. *International Journal of Research in Engineering, Science and Management*. 3, 86-90. 10.47607/ijresm.2020.294.
- Toth, M. (2014). The Role of Self-Concept in Consumer Behavior. UNLV Theses, Dissertations, Professional Papers, and Capstones. 2161. <http://dx.doi.org/10.34917/6407916>
- Wang, S., Liu Y., Du., and Wang, X. (2021). Effect of The COVID-19 Pandemic On Consumers' Impulse Buying: The Moderating Role of Moderate Thinking. *Int J Environ Res Public Health*. 18(21):11116. doi: 10.3390/ijerph182111116. PMID: 34769636; PMCID: PMC8583521.
- Widagdo, B. and Roz, K. (2021). Hedonic Shopping Motivation and Impulse Buying: The Effect of Website Quality on Customer Satisfaction. *Journal of Asian Finance, Economics and Business*, 08(01), 395-405. doi: 10.13106/jafeb.2021.vol8.no1.395

Adoption of Climate-Smart Rice Production Practices and Technologies: A Tool Towards Rice Production Efficiency and Agricultural Sustainability

Ma. Rosa P. Allera*, Leonard V. Flores

Mindanao State University, General Santos City, Philippines

*Corresponding Author Email: mrallera14@gmail.com

Date received: June 6, 2024

Date revised: June 26, 2024

Date accepted: June 29, 2024

Originality: 91%

Grammarly Score: 99%

Similarity: 9%

Recommended citation:

Allera, M.R., Flores, L. (2024). Adoption of climate-smart rice production practices and technologies: a tool towards rice production efficiency and agricultural sustainability. *Journal of Interdisciplinary Perspectives*, 2(8), 255-265. <https://doi.org/10.69569/jip.2024.0267>

Abstract. Climate change and high rice imports pose significant threats to local rice production, food security, and the livelihoods of rice farmers. This study examines the potential of climate-smart rice practices and technologies to enhance domestic production and adapt to environmental changes in major rice-producing municipalities within South Cotabato, Region 12, focusing on the clusters of Norala, Santo Niño, and Banga. Using surveys from 189 farmers and interviews with technical personnel, the study identified synchronous planting, alternate wetting and drying (AWD), and direct seeding as the most commonly adopted practices. Conversely, rainwater catchment facilities and Rice Crop Manager (RCM) technology had lower adoption rates. Cost and return analyses demonstrated increased yields and net income for farmers employing the most adopted practices. The findings suggest that higher adoption rates for climate-smart practices can be achieved through training programs, financial assistance, and community demonstrations. The study recommends collaboration between the Department of Agriculture and other stakeholders to enhance farmer awareness, develop agricultural education programs, and provide vocational training on sustainable practices to attract young farmers. Financial and technical support for farmers is also essential. Replicating the study in other regions and with different farmer groups will strengthen its findings. By empowering farmers to achieve higher yields, secure income, and environmental protection, climate-smart rice production offers a sustainable path toward national rice security.

Keywords: Climate Change; Rice production; Smart technologies; Agricultural sustainability.

1.0 Introduction

Climate change disrupts traditional rice production, threatening food security for billions who rely on this vital crop. While climate-smart rice production practices and technologies offer a glimmer of hope, its adoption by farmers remains a hurdle. Since 1800, human activities had been the main driver of climate change, primarily due to burning fossil fuels like coal, oil, and gas. These activities generate greenhouse gas emissions like a blanket wrapped around the Earth, trapping the sun's heat and raising temperatures (UN, 2020). According to Lipper et al. (2014), many current farming practices damage the environment and source (19–29%) of anthropogenic greenhouse gas (GHG) emissions.

The specter of climate change hangs heavy over agriculture, casting a long shadow on the future of food security. Intensifying human activities that contribute to greenhouse gas emissions disrupt weather patterns and temperature cycles in unprecedented ways. These disruptions are creating a domino effect, threatening agricultural production on a global scale. Farmers, the backbone of our food systems, are particularly vulnerable. Climate change disrupts food markets, putting food supply in danger for the entire population. Threats can be

mitigated by boosting farmers' adaptive capacity, resilience, and resource usage efficiency in agricultural production systems (Thornton et al. 2014).

The Philippines has 4,815,813 hectares devoted to rice. SOCCSKSARGEN Region has 338,689 hectares of rice areas, which can produce 1 256,406 metric tons of paddy or 6 % of the total production of the country in 2023 (PSA, 2023). Favorable weather conditions are one of the main factors affecting rice production in order to attain optimum yield and to be able to feed the millions of Filipinos in the country, particularly in Region 12. Farmers' awareness of and resilience to climate change will be crucial in achieving one of the Sustainable Goals: ending world hunger.

In addition, the study of Raj and Garlapati (2020) claimed that there is a high need to prevent the agriculture sector from being prey to climate change as it intensifies threats like hunger, malnutrition, diseases, and poverty, thus affecting the world's progress. They added that Agriculture is the most vulnerable sector affected by climate change as it is highly dependent on local climatic parameters, such as rainfall, temperature, and soil health, yet the primary cause of climate change. They also emphasized that it is time for agriculture to be "climate-smart" to sustainably achieve productivity and incomes, reduce greenhouse emissions wherever possible, and be resilient to climate change. Climate-smart agriculture (CSA) is an integrated approach that can address several challenges interlinked with climate change.

Another challenge in the agriculture sector, particularly in the rice industry, is Rice Importation. The Philippines was the world's top rice importer in 2023, with an anticipated more than 3 million metric tons of imports (MMT) to augment its 13.43 MMT tons of domestic production. In 2023, the Philippines' import volume more than doubled that of Indonesia, the second-biggest importer in ASEAN (Congressional Policy and Budget Research Department, 2024). The Bureau of Plant Industry (BPI) reported that 3,607,038.495 metric tons of rice entered the nation in 2023. (BPI- NPQSD, 2024). On the other hand, the Economic Research of the United States Department of Agriculture (USDA) outlined an estimated 3.8 million metric tons of rice imports for the Philippines in 2024.

Hence, this study explored how climate-smart rice production and technologies can address the challenges of Climate Change and Rice Importation in Philippine Agriculture and how these practices and technologies could help increase rice production to suffice the nation's need to feed its population while adapting to the changing environment.

2.0 Methodology

2.1 Research Design

The study utilized the Sequential Research Method which is characterized by an initial qualitative phase of data collection and analysis, followed by a phase of quantitative data collection and analysis, with a final phase of integration or linking of data from the two separate strands of data (Berman 2017)

2.2 Research Participants

The total population is 2,628. Using Slovin's Formula, with 7% margin of error and 93% confidence interval, the recommended minimum number of samples is 189 farmer-respondents. The research study's population includes rice farmers from the lead cluster of the top 3 major rice-producing municipalities of South Cotabato. Key Informant Interviews (KII) with other stakeholders were conducted with the Local Farmer Technicians (LFTs), Agricultural Technicians, and the Municipal Agriculturists of each concerned municipality to gather data and information on the implementation and the factors impeding the adoption of climate-smart rice production practices and technologies

2.3 Research Instrument

This study used a validated questionnaire to collect primary data. Paper-based survey questionnaires were deployed to determine the level of adoption of climate-smart rice production practices and technologies among the farmer respondents. It also determined the factors that impede and encourage the respondents' adoption.

For the qualitative method, a validated interview guide was utilized to determine the challenges in the adoption, the potential solutions, and the recommendations for promoting climate-smart rice production practices and technologies.

2.4 Data Gathering Procedure

This study used specific steps to ensure the efficient conduct of the research. The researcher requested permission for ethical approval from the Ethics Committee of Mindanao State University, General Santos City Campus. After the ethical clearance was released, the researcher sent a letter request to the concerned municipalities through the Office of Municipal Agriculturists and asked permission to allow the researcher to visit the area, to conduct the survey and the interview.

2.5 Ethical Considerations

This research followed ethical guidelines provided by Mindanao State University to ensure ethical research practices. Preserving the privacy, dignity, and overall well-being of the participating farmers was given first importance in this study. Informed consent procedures were followed to guarantee that every respondent gave their consent voluntarily. This involved clearly explaining the research objectives, data collection methods, potential risks and benefits, and the right to withdraw from the study at any time.

Measures were taken to ensure that every bit of information collected remained private. As part of this process, any personal information that might be used to identify particular respondents was disclosed. No information was shared without the participants' prior consent. Steps were taken to minimize any potential harm. The research employed appropriate methodological approaches to address the specific research questions and contribute meaningfully to the existing body of scientific knowledge. Transparency was maintained throughout the research process, ensuring the accuracy and reliability of the data collected.

3.0 Results and Discussion

3.1 Adoption of Climate-smart Rice Production Practices and Technologies

Table 1. Frequency distribution of adoption of climate-smart rice production practices and technologies

Variable	Never	Rarely	Sometimes	Often	Always
Cultivation of high-yielding varieties	151	3	29	0	6
Minimum Tillage/Direct Seeding	2	4	5	17	161
Crop Rotation	161	4	19	1	4
Rainwater Catchment Facility	189	0	0	0	0
AWD	65	1	17	5	101
IPM/Synchronous Planting	47	1	0	0	141
Nutrient Management/Soil Analysis	189	0	0	0	0
RCM	189	0	0	0	0

As shown in Table 1, eighty-five percent (85%) or 161 respondents said that they always practice direct seeding, 1% admitted that they never use the practice on their farm, and the remaining 14% practiced direct seeding infrequently. The high adoption of direct seeding is linked to the use of inbred rice varieties. Inbred rice variety seeds are typically cheaper than hybrid rice. On the other hand, there was a slight difference between the level of adoption and non-adoption of AWD among the respondents. The data shown in Table 1 shows that 53% of the respondents have adopted the AWD technique while 34% have never used it on their farms. However, there were some who sometimes and rarely used the said technology. AWD was commonly practiced by the respondents because they belonged to a major cluster of each municipality. The release of the water to irrigate their fields was scheduled, which enabled them to practice AWD technology.

Synchronous planting was another farm practice widely adopted by the respondents. 74% of the respondents said that they adopted synchronous planting. NIA's scheduled release of irrigation water to farming communities contributed to the adoption of this IPM technique. Table 1 also depicts that a mere 3% of the participants utilized high-yielding rice varieties, whilst the remaining 80% did not adopt this method. However, 17% have used the aforementioned method on occasion. It is more likely that the respondents did not use this kind of technology. Unlike direct seeding, synchronous planting, and AWD, which the respondents generally accepted, it was also observed that Crop Rotation, Rainwater Catchment Facility and RCM were not likely adopted. The reason for not adopting rainwater catchment facilities was that the respondents were from each municipality's lead cluster and relied on NIA for irrigation water for their crops. NIA, however, used a diversion dam rather than a small water impounding project.

Overall, Table 2 shows that only 3 of climate-smart rice production practices and technologies were adopted by the respondents. Among these practices and technologies were Direct Seeding, Alternate Wetting and Drying and Synchronous Planting. Generally, the adoption of climate-smart production practices and technologies has a grand mean of 2.24, which is described as "Rarely." This implies that the respondents did not fully adopt climate-smart production practices and technologies; only a few practices and technologies were adopted by the respondents.

Table 2. Descriptive statistics of the extent of the adoption of climate-smart rice production practices and technologies

Indicators	Mean	Interpretation
Cultivation of high-yielding rice varieties	1.5	Never
Minimum tillage and direct seeding	4.8	Always
Crop Rotation	1.3	Never
Use of Rainwater Catchment Facility	1.0	Never
Alternate Wetting and Drying	3.4	Sometimes
IPM/Synchronous Planting	4.0	Often
Nutrient Management	1.0	Never
Precision Farming (Rice Crop Manager)	1.0	Never
Grand Mean	2.24	Rarely

3.2 Profitability of Adopting Climate-Smart Rice Production and Technologies

Table 3. comparative cost and return analysis figure for 1-hectare rice field

Particular	Farmer's Practice	With Technology
Seeds	7,200.00	10,000.00
Fertilizers	16,000.00	24,000.00
Pesticides	5,000.00	4,000.00
Transplanting		12,000.00
Land Preparation	5,800.00	5,800.00
Harvesting	8,000.00	8,000.00
Postharvest (drying and hauling)	3,000.00	4,700.00
Total Cost of Production	45,000.00	68,500.00
Gross Income	90,620.00	149,500.00
Net Income	45,620.00	81,000.00
Return on Investment (%)	101.38	118.25
Cost to Produce 1 kg (PhP/Kg)	11.42	10.54
Break-even yield	1,956.52	2,978.26
Break-even price	11.42	10.54

As presented in Table 3, using hybrid rice varieties is more costly for farmers. Its variety costs 52% more than the inbred varieties. Also, respondents tend to apply higher fertilizer rates when using high-yielding varieties than inbred. With crop rotation and synchronous planting, pesticide application is due to reduced pest incidence. Crop rotation breaking the rice cycle with other crops effectively reduces insect pests, especially those with extended life cycles, a limited host range, and a limited ability to disperse. Removing the pests' food source and reversing their population increase are achieved by rotating rice with a crop other than rice (Islam, 2001)

Hybrid rice varieties yield higher than inbred varieties. Climate-smart rice production practices increase gross income by 65% compared to non-adopting farms, indicating increased crop yield. Farmers' practices have a 34% advantage in lower production costs due to direct seeding and fewer fertilizers. Despite higher costs, adopting climate-smart rice technologies boosts net income by 78%. Overall, the adoption of climate-smart rice production practices, particularly hybrid varieties, led to higher gross and net incomes, compared to traditional farming methods. Factors like fertilizer rates and planting methods also affected production costs.

3.3 Sustainability of Adopting of Climate-Smart Rice Production Practices and Technologies

Environmental Sustainability

The respondents in their respective municipalities observed the detrimental effects of climate change on the environment, as shown in Figure 1. Of the 189 respondents, 151 cited crop damage due to climate change, and 141 thought climate change also caused drought or water shortage. Thirty-six (36) respondents, or 19%, observed the occurrence of pests, and 32 respondents observed flooding.

The climate and weather have a significant impact on agriculture. Due to the effects of climate change, particularly rising temperatures and longer dry spells (Singh et al., 2013). Further, the spread of pests and their potential for harm has grown due to climate change, improving durability and enabling insect pests to be more adaptable. Changes in the temperature, movement, and behavior of insect pests are being brought about by altered precipitation patterns, shifting gaseous composition of the atmosphere, and rising temperatures (Shrestha, 2019).

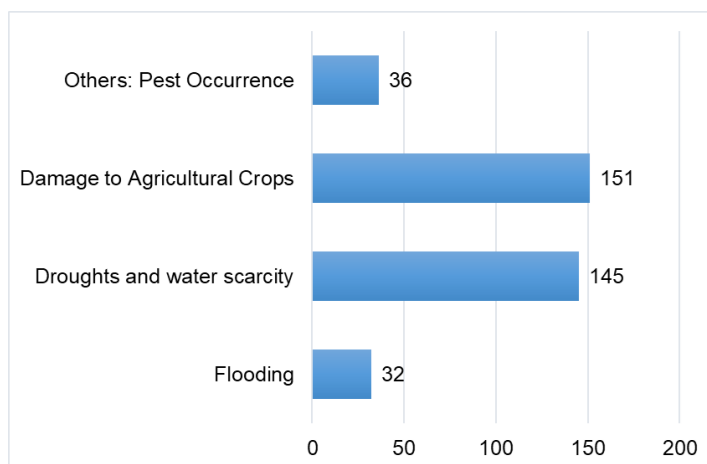


Figure 1. Observed negative impacts of climate change in respondents' respective municipalities

Figure 2 shows the important things that could be done to mitigate these negative impacts caused by climate change. The majority of the respondents cited that AWD could mitigate the negative impacts of climate change, followed by synchronous planting, crop rotation, and the use of high-yielding varieties.

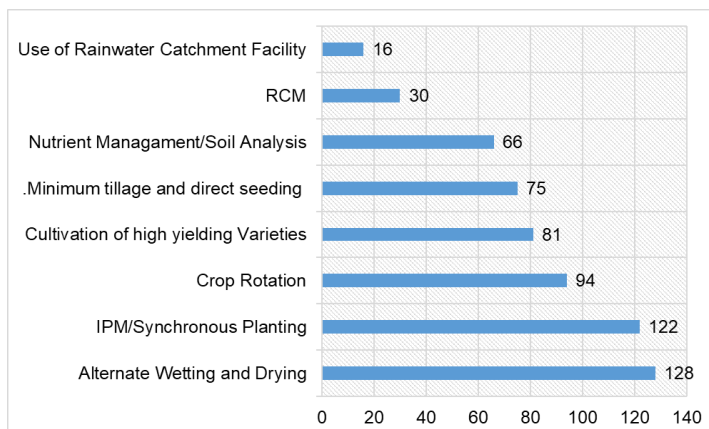


Figure 2. Climate-smart rice production practices and technologies that could mitigate the impact of climate change

The alternate wetting and drying (AWD) irrigation system is a potential substitute for the conventional continuous flooding system of rice production. It is more economical, water-efficient, and environmentally viable than continuous flooding, which requires a large amount of water input and poses a severe threat to the ecosystem due to the emission of greenhouse gases (GHGs) and the accumulation of heavy metals. It can lower the overall water inputs (25–70%) and CH₄ emissions (11–95%) and restrict the accumulation of As (13–90%) and Hg (5–90%) in rice grains (Ishfaq et al., 2020).

Synchronous planting, where planting times of neighboring fields are not staggered beyond an interval of 3 to 4 weeks, is one of the IPM approaches that prevent the high population levels of insect pests that cause great losses in farm communities. Staggered planting extends the progressive availability of the host plant; it increases the likelihood that rice pests will survive the entire year. (Islam, 2001). This method potentially results in efficient water distribution. Water allocation can be optimized when all fields require water at similar times, minimizing waste and ensuring all farmers have access during the vital growth stage of the crop. Synchronous planting after a fallow or rest period enables efficient use of irrigation water and avoids overlapping incidences of insect pest and disease populations, thus preventing yield loss (Philrice, 2022). If incidences of pests and diseases are low, excessive use of pesticides can be avoided. Thus, there will be no negative effects on the soil health. Crop Rotation is another way of preventing the spread of pests, weeds, and diseases where the inclusion of breaking phases decreases its population (Ouda et al., 2018).

Using some high-yielding varieties lowers water consumption and greenhouse gas emissions (Myrteza, 2012). Hybrid varieties have increased vigor that can compete with weeds and increased resistance to pests and diseases (IRRI, 2018). Inbred varieties, which are often used by farmers, also have promising yields. Though these varieties do not exceed the performance of hybrids in terms of yield, they can withstand extreme weather conditions. Farmers may grow NSIC Rc 194 (Submarino 1), a cultivar that can withstand up to 14 days of submersion in water while in the vegetative phase. PSB Rc 68 is water-resistant as well. Even though the rainy season is approaching, several provinces in the nation are still impacted by the prolonged El Niño. Farmers may select drought-tolerant varieties, such as PSB Rc 10, Rc 14, NSIC Rc 192, and Rc 222, in places where water is limited or irrigation is delayed (PhilRice, 2019).

Table 4 depicts that direct seeding has become the dominant practice in South Cotabato's rice production, favored for its lower labor cost. Direct seeding promotes reduced tillage, improves soil health, and boosts soil structure and organic matter content (Farooq et al., 2011). This leads to healthier soil and increased resilience to drought.

Table 4. Current practices and technologies used in the community to manage natural resources and environmental issues

Variable	Yes	No	Total	% Yes	% No
Minimum Tillage/ Direct Seeding	137	52	189	72.49	27.51
Alternate Wetting and Drying	126	63	189	66.67	33.33
Integrated Pest Management	120	69	189	63.49	36.51
Cultivation of high yielding Varieties	104	85	189	55.03	44.97
Crop Rotation	81	108	189	42.86	57.14
Rice Crop Manager	21	168	189	11.11	88.89
Nutrient Management/Soil Analysis	19	170	189	10.05	89.95

Initiatives that promote climate-smart rice production practices within farming communities influenced farmers to use the techniques. The adoption of climate-smart rice production technologies promotes more sustainable rice production. These practices and technologies lessen the environmental footprint of rice cultivation while ensuring continued production to meet food demands

Social Sustainability

This section presents the level of social sustainability of climate-smart rice production practices and technologies and how these practices and technologies meet the needs of the community, change the behavior of respondents to achieve bio-physical environmental goals, and the acceptance of these practices and technologies by the community (Vallance et. al, 2011).

Figure 3 shows that the respondents are highly aware of climate-smart rice production. 137 respondents, or 72%, acknowledged that they were familiar with the concept, and the majority learned this from the extension services. As shown in Figure 4, a total of 96 respondents, or 50% of them, were motivated to adopt climate-smart rice production practices and technology because such practices boosted yield; 39% of respondents, or 73 of them, have done so to increase income. A significant number of respondents (88) were urged to adopt it since it is the community's practice.

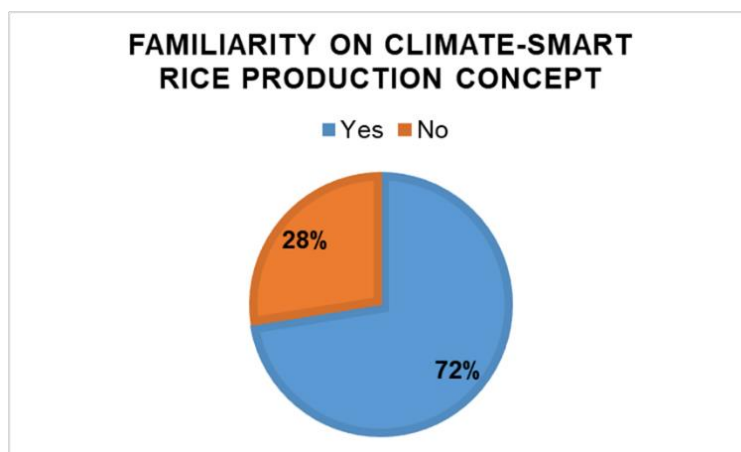


Figure 3. Comparative Figure on the familiarity of respondents with the concept of climate-smart rice production

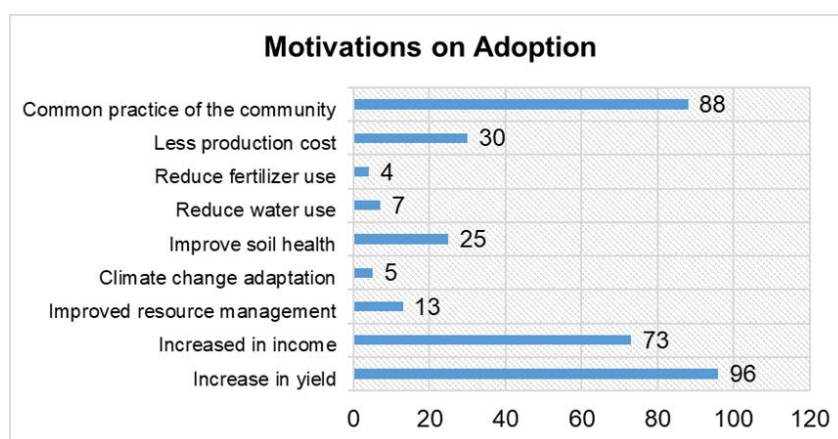


Figure 4. Motivations of respondents in adopting climate-smart rice production practices and technologies

While farmers see potential benefits from climate-smart rice practices, like increased yield and income, there are significant hurdles to widespread adoption. Figure 5 depicts that a key challenge is the lack of knowledge among farmers, particularly smallholders, regarding the advantages and implementation details of these practices. Limited access to information due to language barriers, poor internet, or weak extension services further complicates this issue. Even interested farmers may struggle to find the specifics needed to put these methods into action. Additionally, financial constraints due to high initial costs, concerns about the effectiveness of the practices, and limited access to financing all act as barriers to adoption. Finally, a lack of support from institutions or extension services can further discourage farmers from implementing climate-smart rice production methods.

Climate-smart rice production practices and technologies like hybrid seeds, inorganic fertilizers, and even establishing a Small Water Impounding Project (SWIP) often require higher upfront costs than traditional methods (see Table 2). Farmers also cited that these practices, especially the use of hybrid varieties, require labor for transplanting. This method incurs additional labor costs, unlike the direct seeding method. Higher production costs can be a significant financial burden for small and medium-sized rice farmers with limited financial capacity. Farmers were also reluctant to adopt new practices and technologies because many farmers prioritize immediate production and income security. Farmers rely on dependable results to make a living from farming. Their primary concern is increasing or even maintaining their yield, if new practices or technology are introduced, farmers are likely to be cautious; they cannot afford to sacrifice their harvest for an uncertain future benefit.

Since the adoption of climate-smart rice production practices and technologies requires higher costs, and most farmers, especially small-medium rice producers, have limited financial resources, they need access to financing

to help them acquire start-up capital to adopt the technologies. Government support such as incentives, subsidies, and financial assistance programs can also help to offset the costs that may be incurred in the adoption of these practices and technologies.

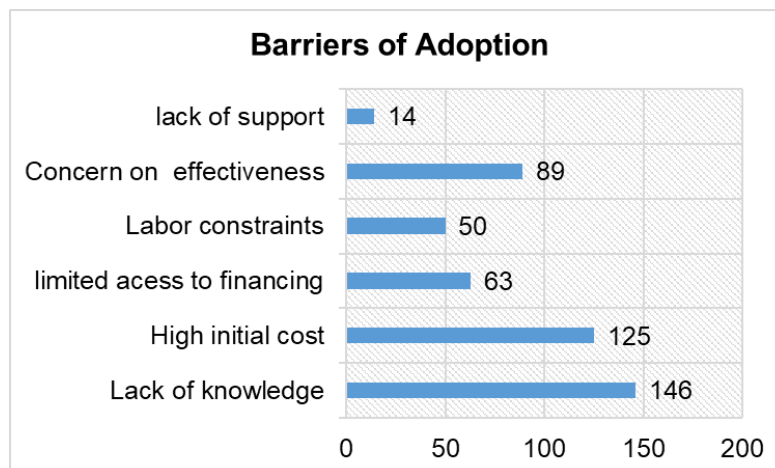


Figure 5. Barriers to the adoption of climate-smart rice production practices and technologies

Figure 6 depicts the perceived support or assistance needed by the respondents/community to be encouraged to adopt climate-smart rice production practices and technologies. One hundred fifty-one (151), or most respondents, said that "More Training and Education Programs" enable farmers to adopt climate-smart production practices and technologies. This implies that through intensive information dissemination and training on the advantages of these practices and technologies, farmers will be encouraged to adopt them. One hundred seven (107) respondents thought that "Financial Incentives" would be helpful for farmers and make them adopt the said practices and technologies. On the other hand, 94 and 80 respondents believed that "Improved Access to technology and inputs" and the establishment of "Community-based demonstration projects" would enable them to adopt the said practices and technologies. "Strengthening farmer associations and cooperatives" and "Providing marketing opportunities" were also listed by 63 and 42 respondents, respectively. These data show that farmers' acceptance and willingness to adopt climate-smart rice production practices and technologies is evident. Increased government and organizational support for rice farmers, through initiatives like education, financial assistance, and access to new technologies, can encourage wider adoption of these improved practices.

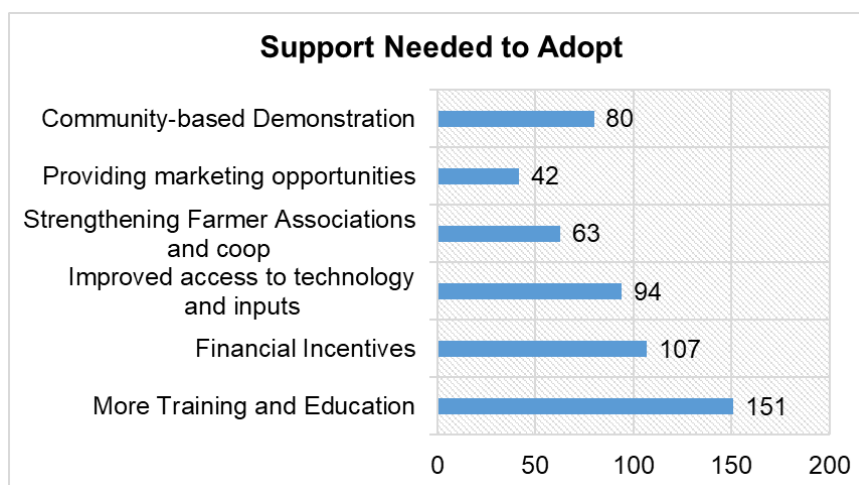


Figure 6. Support needed by the respondents to adopt climate-smart rice production practices and technologies

The adoption of climate-smart rice production practices and technologies has empowered and promoted the development of the farming communities of Norala, Sto. Nino, and Banga, South Cotabato. Rather than posing threats, these innovative practices and technologies have motivated farmers to enhance their yields and significantly increase their income levels.

Economic Sustainability

Table 5. Respondents' perspective on the result of adopting climate-smart rice production practices

Variable	Yes	No	Uncertain	% Yes	% No	% Uncertain
Increase in yield	153	7	29	80.95	3.70	15.34
Increase production Cost	50	102	37	26.46	53.97	19.58
Increased Profit margin	101	31	57	53.44	16.40	30.16
Increased market access	40	85	64	21.16	44.97	33.86

The core requirement of sustainability is that current economic activities should not result in an excessive burden on future generations (Foy, 1990). Table 5 shows that 153 (81%) respondents believed that adopting climate-smart rice production practices and technology had improved their yield. However, 7 (4%) respondents thought there had been no significant change in yield from the practices, and 29 (15%) respondents were uncertain. Among the respondents, 50, or 26%, believed that the said practices and technologies had increased their production costs, 102 respondents, or 54%, observed that their production costs had not increased, and 37 respondents, or 20%, were unsure. In terms of the profit margin, 101 (53%) respondents thought it had increased through the adoption of climate-smart rice production practices and technologies, 31 (16%) respondents disagreed, and 57 (30%) respondents were uncertain. Likewise, 40 (21%) respondents believed that the use of climate-smart rice production practices and technologies had increased market access, while 85 (45%) respondents disagreed, and 64 (34%) respondents were uncertain.

Compared to their prior farm practices, most respondents believed that their yield had increased with the introduction of climate-smart rice production practices and technologies. The majority of respondents claimed that the said practices and technologies had not increased their production costs, even though few would agree that it had. The said increase in production costs may have been caused by the cultivation of hybrid varieties, which require a higher fertilization rate and higher labor costs for transplanting. Most of the respondents have also concurred that the adoption of climate-smart production practices and technologies has increased their profit margin. The cultivation of high-yielding varieties ultimately caused higher yields and thus incurred higher income.

3.4 Presentation and Analysis of Qualitative Data

Figure 7 illustrates how the abovementioned themes are interconnected. Each theme played a crucial role in implementing climate-smart production practices and technologies that address challenges in rice production and gear toward rice production efficiency and agricultural sustainability.

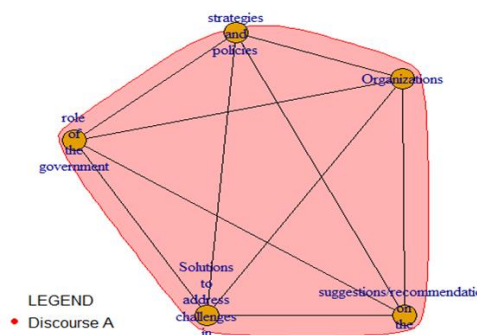


Figure 7. Plotting of thematic codes

The “Role of the Government” refers to the initiatives and programs that the government is expected by the key informants to carry out for the efficient implementation and adoption of climate-smart production practices and technologies. “Organizations” are local organizations or Non-government Organizations (NGOs) that facilitate and support the community and enable them to adopt climate-smart rice production practices and technologies. These organizations support and encourage the rice farmers in the community to adopt such practices and technologies. “Suggestions and Recommendations” are the initiatives and programs the key informants perceive to be effective for rice farmers in the community to adopt climate-smart production practices and technologies. “Strategies and Policies” are policies and strategies the key informants thought would lead to adopting climate-smart rice practices and technologies. “Solutions to Address Challenges in Rice Production” are the actions to address the issues and challenges in rice production.

Based on the qualitative data gathered private and public partnerships in promoting climate-smart production practices and technologies are crucial in the adoption and implementation, especially the role of the government in promoting these practices and technologies. To encourage rice farmers to adopt these practices and technologies, the respondents suggested and recommended Intensive Information Dissemination, Reward and Incentive system, Conduct of Needs Assessment, Subsidy and Financial Assistance, and Establishment of community-based demonstration projects during the key informant interview.

To address the factors that impeded the adoption and implementation, policy on imposing the adoption of climate-smart production practices and technologies, especially synchronous planting should be formulated. Imposing of fines and sanctions on farmers who will not follow the climate-smart rice production practices and technologies and the policy on "RED FLAGGING" which means no planting when the red flag is on to promote synchronous planting were among the various strategies and policies recommended by the respondents.

According to the study conducted by Sanogo et. al (2023) the key barriers to effective adoption of Climate-smart Agricultural (CSA) practices included limited input availability, lack of control over technologies, insufficient labor availability, insufficient availability and high cost of seedlings, lack of information on developed technologies, and limited land access for women and youth. In another study by Zakaria et. al in 2020, revealed that the intensity of farmers’ adoption of climate-smart agricultural technologies is positively influenced by farmers’ experience in rice cultivation, access to mass media, training, and perceived decrease in the amount of rainfall.

4.0 Conclusion

The influence of the farmers’ association and initiatives of various stakeholders on promoting climate-smart rice production practices and technologies are crucial in the adoption of a single farmer. Community practice is one reason for the adoption of the farmers, aside from the increase in yield and income as well as lower production costs. Though results revealed that farmer-respondents are familiar with climate-smart rice production practices, they still need a deeper knowledge of its importance and advantage in agriculture. Activities and programs that promote awareness of these technologies will still be helpful to rice farmers. Also, according to their demographic profile, most respondents are over 60 years old. Older farmers often have more experience and knowledge about their land and local conditions. This experience can be valuable in adapting climate-smart practices to their specific needs. However, many farmers – especially the older ones – may have deep ties to customs handed down through the ages. Even if the new techniques provide long-term advantages, they might be less open to altering their well-established habits.

While farmers reported increased yields and income with the adoption of climate-smart rice production practices and technologies, a lack of baseline data makes it difficult to definitively assess their profitability. Despite this, the positive impact on the livelihoods of farmers who adopted these practices and technologies hold promise for the community. Increased government support, including training programs, financial assistance, and community demonstration projects, can address farmer resistance to climate-smart rice production practices and technologies. By providing farmers with the knowledge, resources, and ability to witness the effectiveness firsthand, these initiatives can encourage wider adoption. Farmers themselves have indicated a willingness to embrace these practices when more when equipped with the necessary support. Climate-smart rice production offers a

sustainable solution for rice farmers. It empowers them to achieve higher yields and income while safeguarding the environment for future generations.

5.0 Contributions of Authors

Ma, Rosa Prada Allera. – encoding, data analysis and interpretation, writing.
Leonard Villanueva Flores. – editing, supervising, recommendation

6.0 Funding

This work received no specific grant from any funding agency.

7.0 Conflict of Interests

All authors declare that they have no conflicts of interest.

8.0 Acknowledgment

The researcher would like to express her sincere gratitude to her thesis adviser Leonard V. Flores, MPA, DiSDS, for his invaluable guidance, support, and encouragement throughout this research journey. His expertise in Sustainable Development has helped her focus in her study. The researcher is also grateful to the members of her thesis committee, Alfie Maria Custodio, Ph. D and Allan Marcilla, MiSDS for their time and constructive criticism during the development of this paper. Their suggestions and insights helped to refine this research. Her deepest appreciation also goes to the rice farmers, Local farmer technicians, Agricultural Technicians, Municipal Rice Program Coordinators and Municipal Agriculturists of Norala, Sto. Niño, South Cotabato, who generously participated in this research. Their willingness to share their experiences and knowledge about climate-smart practices was essential to this project. Particularly, the researcher is thankful to Rice Bowl Irrigators Association, ROVICPA Irrigator's Association and Liriz Irrigator's Association for their invaluable contributions in this study. The researcher expresses her sincere gratitude to Department of Agriculture- RFO 12, co-workers and supervisors for their support, understanding and for allowing her to pursue her academic journey. Finally, she is grateful to her family and friends for their unwavering support and encouragement throughout her academic journey. She appreciated how they never fail to encourage and inspire her to keep going.

9.0 References

- Andati, P., Majiwa, E., Ngigi, M., Mbeche, R., & Ateka, J. (2023). Effect of climate smart agriculture technologies on crop yields: Evidence from potato production in Kenya. *Climate Risk Management*, 41, 100539. <https://doi.org/10.1016/j.crm.2023.100539>
- Ariani, M., Hervani, A., & Setyanto, P. (2018, November). Climate smart agriculture to increase productivity and reduce greenhouse gas emission—a preliminary study. In *IOP Conference Series: Earth and Environmental Science* (Vol. 200, No. 1, p. 012024). IOP Publishing. <https://doi.org/10.1088/1755-1315/200/1/012024>
- Aung, T., & Prot, J. C. (1990). Effects of crop rotations on *Pratylenchus zeae* and on yield of rice cultivar UPL Ri-5. *Revue de nématologie*, 13(4), 445-447.
- Bureau of Plant Industry - National Plant Quarantine Services Division. (2024). 2019-2024 Rice Arrival per Company (as of May 16, 2024). <https://npqsd.bpi-npqsd.com.ph/2020/10/28/2019-2020-rice-arrival-per-company-for-september/>
- Baweja, P., Kumar, S., & Kumar, G. (2020). Fertilizers and pesticides: Their impact on soil health and environment. In M. Kumar, P. Baweja, S. Kumar, & G. Kumar (Eds.), *Soil health* (pp. 265-285). Springer. https://doi.org/10.1007/978-3-030-44364-1_15
- Berman, E. A. (2017). An exploratory sequential mixed methods approach to understanding researchers' data management practices at UVM: Integrated findings to develop research data services. *Journal of eScience Librarianship*, 6(1), e1104. <https://doi.org/10.7191/jeslib.2017.1104>
- Congressional Policy and Budget Research Department. (2024). FF2024-16: Tariff revenues from rice imports, 2021 to 2023. <https://cpbrd.congress.gov.ph/2012-06-30-13-06-51/2012-06-30-13-36-50/1730-f2024-16-tariff-revenues-from-rice-imports-2021-to-2023>
- Etim, N. A., & Ndaeyo, N. (2020). Adoption of climate smart agricultural practices by rice farmers in Akwa Ibom State, Nigeria. *Journal La Lifesci*, 1(4), 20-30. <https://doi.org/10.37899/journalallifesci.v1i4.203>
- Farooq, M., Siddique, K. H. M., Rehman, H., Aziz, T., Lee, D. J., & Wahid, A. (2011). Rice direct seeding: Experiences, challenges and opportunities. *Soil and Tillage Research*, 111(2), 87-98. <https://doi.org/10.1016/j.still.2010.10.008>
- Ho, T. T., & Shimada, K. (2019). The effects of climate smart agriculture and climate change adaptation on the technical efficiency of rice farming—an empirical study in the Mekong Delta of Vietnam. *Agriculture*, 9(5), 99. <https://doi.org/10.3390/agriculture9050099>
- Ishfaq, M., Farooq, M., Zulfikar, U., Hussain, S., Akbar, N., Nawaz, A., & Anjum, S. A. (2020). Alternate wetting and drying: A water-saving and eco-friendly rice production system. *Agricultural Water Management*, 241, 106363. <https://doi.org/10.1016/j.agwat.2020.106363>
- Liang, Z., Zhang, L., Li, W., Zhang, J., & Frewer, L. J. (2021). Adoption of combinations of adaptive and mitigatory climate-smart agricultural practices and its impacts on rice yield and income: Empirical evidence from Hubei, China. *Climate Risk Management*, 32, 100314. <https://doi.org/10.1016/j.crm.2021.100314>
- Naval, R. C. (2016). Socioeconomic impact of small water impounding projects in Quirino Province, Philippines. *Journal of Geoscience and Environment Protection*, 4(6), 101-106. <https://doi.org/10.4236/gep.2016.46009>
- Onyeke, R. U., Amadi, M. U., Njoku, C. L., & Osuji, E. E. (2021). Climate change perception and uptake of climate-smart agriculture in rice production in Ebonyi State, Nigeria. *Atmosphere*, 12(11), 1503. <https://doi.org/10.3390/atmos12111503>
- Raj, S., & Garlapati, S. (2020). Extension and advisory services for climate-smart agriculture. In *Global climate change: Resilient and smart agriculture* (pp. 273-299). Springer. https://doi.org/10.1007/978-981-32-9856-9_13
- Sanogo, K., Touré, I., Arinloye, D. D. A., Dossou-Yovo, E. R., & Bayala, J. (2023). Factors affecting the adoption of climate-smart agriculture technologies in rice farming systems in Mali, West Africa. *Smart Agricultural Technology*, 5, 100283. <https://doi.org/10.1016/j.atech.2023.100283>
- Santosh, D. T., Debnath, S., Maitra, S., Sairam, M., Sagar, L. L., Hossain, A., & Moulick, D. (2024). Alleviation of climate catastrophe in agriculture through adoption of climate-smart technologies. In *Climate Crisis: Adaptive Approaches and Sustainability* (pp. 307-332). Springer. https://doi.org/10.1007/978-3-031-44397-8_17
- Stagnari, F., Maggio, A., Galieni, A., & Pisante, M. (2017). Multiple benefits of legumes for agriculture sustainability: An overview. *Chemical and Biological Technologies in Agriculture*, 4(2). <https://doi.org/10.1186/s40538-016-0085-1>
- Thornton, P. K., & Lipper, L. (2014). How does climate change alter agricultural strategies to support food security? International Food Policy Research Institute. <https://doi.org/10.2139/ssrn.2423763>
- Zakaria, A., Alhassan, S. I., Kuwornu, J. K., Azumah, S. B., & Derkyi, M. A. (2020). Factors influencing the adoption of climate-smart agricultural technologies among rice farmers in northern Ghana. *Earth Systems and Environment*, 4, 257-271. <https://doi.org/10.1007/s41748-020-00146-w>

Money Savvy: Development of an Instructional Module Integrating Financial Literacy in Teaching and Learning Business Mathematics

Dude Ryan O. Obamos

West Visayas State University - Main Campus, Iloilo City, Philippines
Sapian National High School, Sapian, Capiz, Philippines

Author Email: duderyan1998@gmail.com

Date received: June 12, 2024

Date revised: June 24, 2024

Date accepted: June 29, 2024

Originality: 93%

Grammarly Score: 99%

Similarity: 7%

Recommended citation:

Obamos, D.R. (2024). Money savvy: development of an instructional module integrating financial literacy in teaching and learning Business Mathematics. *Journal of Interdisciplinary Perspectives*, 2(8), 266-270.
<https://doi.org/10.69569/jip.2024.0279>

Abstract. Financial literacy encompasses the awareness, knowledge, skills, attitude, and behavior necessary for making informed financial decisions and achieving financial well-being. This study utilized the ADDIE model, which includes the stages of Analysis, Design, Development, Implementation, and Evaluation. Data were gathered from learners, licensed financial advisors, and experts using validated and reliable instruments such as questionnaires, evaluation checklists, journals, and written interviews. Analysis methods included mean, standard deviation, rank, and thematic analysis. The findings revealed that learners exhibited a moderate level of financial literacy. Licensed financial advisors identified five specific Business Mathematics lessons where financial literacy could be effectively integrated. The resulting instructional module was evaluated based on its learning objectives, content, organization, presentation, format, design, activities, assessments, and integration of financial literacy. Experts rated the module as "Highly Acceptable," while learners found it "Acceptable." The module was praised for its uniqueness, interest, clarity, effectiveness, flexibility, and ability to enhance the understanding and application of mathematical concepts while promoting financial literacy. Consequently, it is deemed suitable for integrating financial literacy into Business Mathematics lessons. Further research is recommended to evaluate the module's impact on academic achievement and to develop similar instructional materials for other relevant subjects.

Keywords: Financial literacy; Business Mathematics; Instructional module; Educational design, ADDIE model.

1.0 Introduction

Financial literacy is crucial for making informed financial decisions and contributing to personal and national financial stability (OECD, 2020). It is essential within educational frameworks like Ambisyon Natin 2040 and the Sustainable Development Goals (SDGs) (DepEd Order No. 022, 2021).

The Organization for Economic Cooperation and Development (OECD) Programme for International Student Assessment (PISA), which was conducted in 2020, revealed findings regarding low levels of financial literacy among 15-year-olds across 20 countries and economies (OECD, 2020). The assessment, which included 117,000 learners, indicated that approximately one in four students could not make basic decisions related to everyday spending, highlighting a pervasive issue in financial literacy education (OECD, 2020). The study emphasizes the critical need for comprehensive interventions and improved financial education programs to equip young individuals with essential money management skills and address the challenges of low financial literacy levels (OECD, 2020).

The COVID-19 pandemic has highlighted the need for financial literacy, especially with adopting digital financial services (Saini & Rosli, 2021). However, challenges persist, such as investment fraud and low financial literacy among Filipinos. A Bangko Sentral ng Pilipinas survey revealed that only 41% of Filipino adults could correctly answer 1 of 3 financial literacy questions, highlighting the need for comprehensive interventions (Bernardo & Fernando-Resurreccion, 2018). In response, there is a growing recognition of the necessity to integrate financial literacy into educational curricula, particularly in mathematics education. (Said et al., 2022).

Integrating financial elements into mathematics education is crucial for enhancing students' financial literacy (Saini, 2021). This can be achieved through various methods, including inquiry-based mathematics, technological simulations, interactive modules, simulation games, workshops, and school camps (Saini, 2021). However, there is a significant gap in the availability of specialized modules for teaching financial education to secondary school mathematics teachers. These educators require specific training modules to equip them with the necessary skills to implement effective teaching strategies (Said et al., 2022). Conducting a study to develop and implement these specialized training modules is urgent to ensure that teachers can deliver quality financial education, ultimately fostering a financially literate generation.

In line with this, the urgency of conducting a study to develop and implement instructional modules integrating financial literacy into teaching and learning mathematics is paramount. This study explores the importance of incorporating financial literacy into the mathematics curriculum, shedding light on its implications for learners, educators, and society. The module is named "Money Savvy" because a financially savvy person is well-versed in dealing with expenditures, credit, and other money matters. This instructional module will teach the learners about budgeting, saving and investing, spending, borrowing, and protecting money.

2.0 Methodology

2.1 Research Design

The study utilized the Analysis, Design, Development, Implementation, and Evaluation (ADDIE) model to develop and evaluate an instructional module integrating financial literacy into business mathematics.

2.2 Research Participants

Licensed Financial Advisors. Ten licensed financial advisors, each with at least one year of experience, participated in the document analysis of the Business Mathematics Curriculum Guide. Their diverse backgrounds included certified public accountants, mathematics teachers, and businessmen engaged in part-time financial advising. Their collective expertise was crucial for identifying specific lessons in the business mathematics curriculum where financial literacy could be integrated.

Learners. The study involved 35 Grade 11 ABM (Accountancy, Business, and Management) students from Sapián National High School in assessing their financial literacy levels. Additionally, ten Grade 11 STEM learners participated in the financial literacy questionnaire's pilot testing. The same 35 Grade 11 ABM learners were also the respondents for implementing and evaluating the instructional module.

Experts. Five purposefully chosen experts evaluated the acceptability of the developed instructional module. Their expertise spanned licensed financial advising, curriculum development, instructional material development, English, and teaching business mathematics in senior high school.

2.3 Research Instrument

Document Analysis Questionnaire. Identified integration opportunities for financial literacy.

Financial Literacy Survey Questionnaire. Adapted from the OECD/INFE Toolkit for Measuring Financial Literacy and Financial Inclusion 2022 to assess learners' financial literacy levels.

Evaluation Questionnaire for Acceptability. Adapted from the evaluation tool of Nabayra (2019) for learners and experts.

Written Interview Questionnaire. Assessed learners' experiences with the instructional module.

2.4 Data Gathering Procedure

Analysis. The Document Analysis Questionnaire was administered to ten licensed financial advisors to identify lessons suitable for integrating financial literacy. The Financial Literacy Survey Questionnaire was administered to Grade 11 ABM students to assess their financial literacy levels. Statistical tools, including frequency counts, rank, mean, and standard deviation, were used to analyze the responses.

Design. Based on data from the analysis stage and the business mathematics course syllabus, an outline and format for the instructional module were created. The format was modeled after DepEd Enclosure 1: Elements and Technical Specifications of the LR Module from Regional Memo No. 91 S. 2020, with modifications aligned to the study's objective.

Development. The instructional module was developed using Microsoft Word and Microsoft Publisher, incorporating feedback from four experts in business mathematics, financial advising, module writing, and language. Answer keys were written in reverse layout to prevent cheating.

Implementation. The instructional module was tested with 35 Grade 11 ABM learners for five weeks. The teacher of Grade 11 ABM and the researcher facilitated the tryout, with additional observations from the head teacher of the Mathematics Department. Based on feedback, answer keys were provided only to the teacher to prevent cheating.

Evaluation. Learners and experts used the evaluation questionnaire to evaluate the acceptability of the instructional module. Learners' experiences were also assessed through journals and written interview questionnaires.

2.5 Ethical Considerations

The study adhered to ethical guidelines based on the American Psychological Association's (APA) 7th Generation standards. Participants' privacy and confidentiality were maintained, and they were assured of no harm from participation. In addition, the study included measures to ensure that students' regular school activities were not affected by the module's implementation. Directly impacted by this module was the students' performance, which was monitored and assessed every week through formative assessments. This continuous monitoring and assessment were essential to ensuring that students' performance was not harmed and that any necessary adjustments could be made promptly to optimize learning outcomes while maintaining the integrity of the regular school curriculum.

3.0 Results and Discussion

3.1 Learners' Level of Financial Literacy

Table 1. Summary of the overall learners' level of financial literacy

Category	SD	Mean	Interpretation
Basic Financial Concepts	0.60	3.86	High
Income and Budgeting	0.70	3.54	High
Banking and Saving	0.50	2.36	Low
Credit and Debt	0.80	3.01	Moderate
Investing	0.60	2.78	Moderate
Long-Term Planning	0.50	3.25	Moderate
Over-all Rating	0.54	3.13	Moderate

Table 1 summarises the overall learners' level of financial literacy. The study results indicated that ABM learners have a moderate level of financial literacy, with a mean score of 3.13 and SD of 0.54. They excel in basic financial concepts and income management but have limitations in banking, saving, investing, and long-term planning. This trend is consistent with previous research indicating global gaps in practical financial skills among young adults and high school learners (Mitchell & Lusardi, 2011; Mandell & Klein, 2009; Erner et al., 2016).

3.2 Lessons in Business Mathematics that Financial Literacy can be Integrated.

Table 2 shows the top five (5) specific lessons in business mathematics for integrating financial literacy. These lessons include 'Understanding Mark-on, Mark-down, and Mark-up,' 'Defining salary, wage, income, and benefits,' 'Problem-Solving with Interests and Commissions,' 'Applying Fractions, Decimals, and Percentages in Real-Life Scenarios,' and 'Problem-Solving with Proportions.' This was supported by the study of Sagita et al. (2023), who said that the relationship between mathematical and financial literacy is a key focus in education, with the potential for financial understanding to be constructed through mathematics education.

Table 2. Top 5 specific lessons in Business Mathematics for integrating financial literacy

Lessons	SD	Mean	Rank
1. Understanding Mark-on, Mark-down, and Mark-up	0.63	4.8	1.5
2. Defining salary, wage, income, and benefits	0.42	4.8	1.5
3. Problem Solving with Interests and Commissions	0.67	4.7	3
4. Applying Fractions, Decimals, and Percentages in Real-Life Scenarios	1.26	4.4	4
5. Problem-Solving with Proportions	1.49	4.3	5

3.3 Development of an Instructional Module in Business Mathematics Integrating Financial Literacy

The instructional module's development was guided by the outcomes of the Analysis Stage, which involved evaluating the financial literacy levels of Grade 11 ABM learners and conducting a thorough document analysis of the Business Mathematics Curriculum Guide by Licensed Financial Advisors. The results indicated a moderate level of financial literacy among the learners. The identified top five specific lessons where key financial literacy concepts could be effectively integrated included Understanding Mark-On, Mark-Down, and Mark-Up; Defining Salary, Wage, Income, and Benefits; Problem-Solving with Interests and Commission; Applying Fractions, Decimals, and Percentages in Real-Life Scenarios; and Problem-Solving with Proportions. After identifying the top five specific lessons in business mathematics suitable for integrating key financial literacy concepts, the researcher, with the assistance of other experts, identified the key concepts of financial literacy to be integrated into each lesson.

Learners' and Experts' Acceptability Evaluation of the Instructional Module

Table 3. Overall acceptability of the instructional module

	Learners			Experts			SD	Mean	Description
	M	SD	D	M	SD	D			
Learning Objectives	4.60	0.17	HA	4.76	0.09	HA	0.11	4.68	Highly Acceptable
Content	4.43	0.19	A	4.80	0.00	HA	0.26	4.62	Highly Acceptable
Organization & Presentation	4.30	0.11	A	4.72	0.11	HA	0.29	4.51	Highly Acceptable
Format & Design	4.27	0.20	A	4.80	0.00	HA	0.37	4.54	Highly Acceptable
Learning Activities	4.30	0.12	A	4.72	0.11	HA	0.30	4.51	Highly Acceptable
Assessment	4.35	0.11	A	4.76	0.09	HA	0.29	4.55	Highly Acceptable
Financial Literacy Integration	4.29	0.18	A	4.80	0.00	HA	0.36	4.55	Highly Acceptable
Overall Rating	4.36	0.12	A	4.77	0.04	HA	0.06	4.56	Highly Acceptable

Table 3 summarizes the overall acceptability of the instructional module. The instructional module has been rated "highly acceptable" ($M = 4.55$, $SD = 0.06$), indicating that it has met all standards and requires no revision. Based on the results, the participants agreed that the instructional module is highly acceptable in terms of learning objectives, content, organization and presentation, format and design, learning activities, assessment, financial literacy integration, and overall rating. This aligns with Lumabit's (2018) findings that instructional modules can enhance learners' critical thinking and mathematics performance.

Learners' Experiences in Using the Instructional Module

Upon questioning the learners about their experiences with the developed instructional module in delivering lessons, their responses highlighted several key points. They found the instructional module to be unique and interesting, easy to understand, effective and flexible, enhance understanding and application of mathematical concepts, and promote financial literacy.

4.0 Conclusion

The study contributes significantly to the field of education by addressing critical gaps in financial literacy education and emphasizing targeted interventions to bridge these gaps among learners. Integrating financial concepts into core subjects, such as business mathematics, is crucial in enhancing students' mathematical skills and equipping them with essential financial decision-making abilities, thereby promoting their overall financial well-being. The research highlights the linkages between business mathematics and financial literacy, underscoring the foundational role of mathematical proficiency in navigating real-world financial scenarios. This insight is pivotal in shaping educational approaches that prepare students for practical challenges beyond academic settings, aligning theoretical knowledge with practical application, and fostering a deeper understanding of financial concepts.

Moreover, the development of user-friendly instructional modules, exemplified by the "Money Savvy" module discussed in the study, represents a significant advancement in providing accessible and engaging financial education. These modules offer structured platforms for learners to explore financial topics independently, regardless of geographical or socioeconomic constraints, thus promoting inclusivity in financial literacy education. Future studies could explore the long-term impact of integrated financial literacy education on students' financial behaviors and decision-making skills through longitudinal research. Expanding research to encompass diverse demographics and educational settings would provide a comprehensive understanding of module effectiveness across different contexts. Exploring technological integration for enhanced accessibility and engagement, developing teacher training programs focused on financial literacy, and aligning curricula with current educational goals and standards in financial literacy education are also promising avenues for future investigation. By addressing these areas, researchers can build upon the foundation laid by this study, further advancing financial literacy education and empowering learners to make informed financial decisions in an increasingly complex financial landscape.

5.0 Contributions of Authors

The author is the sole contributor to this study.

6.0 Funding

Thesis Grant from Gokongwei Brothers Foundation under TeachSTEM Graduate Scholarship Program

7.0 Conflict of Interests

The author declares that upon the completion of this paper, there was no conflicting party or interest

8.0 Acknowledgment

The author expresses gratitude to those who played a pivotal role in the research study's success, from its inception through data collection to the analysis of findings.

9.0 References

- Bernardo, A., & Fernando Resurreccion, K. (2018). Financial stress and well-being of Filipino students: The moderating role of external locus-of-hope. *Philippine Journal of Psychology*, 51(1). <https://doi.org/10.31710/pjp/0051.01.03>
- Erner, C., Goedde-Menke, M., & Oberste, M. (2016). Financial literacy of high school students: Evidence from Germany. *The Journal of Economic Education*, 47(2), 95-105. <https://doi.org/10.1080/00220485.2016.1146102>
- Lumabit, A. (2018). Development and evaluation of an inquiry-based learning module for general mathematics (Unpublished doctoral dissertation). West Visayas State University, Iloilo City, Philippines.
- Mitchell, O. S., & Lusardi, A. (2011). Financial literacy and retirement planning in the United States. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.1810550>
- Mandell, L., & Klein, L. S. (2009). The impact of financial literacy education on subsequent financial behavior. *Journal of Financial Counseling and Planning*. <https://www.researchgate.net/publication/254513592>
- OECD. (2020). OECD/INFE 2020 International Survey of Adult Financial Literacy. Retrieved February 4, 2024, from <https://www.oecd.org/financial/education/oecd-infe-2020-international-survey-of-adult-financial-literacy.pdf>
- Sagita, L., Putri, R. I. I., Zulkardi, & Prahmana, R. C. I. (2023). Promising research studies between mathematics literacy and financial literacy through project-based learning. *Journal on Mathematics Education*, 13(4), 753-772. <https://doi.org/10.22342/jme.v13i4.pp753-772>
- Said, N., Meng, C. C., Musa, M., & Yaakob, M. N. (2022). Development of financial education training module for secondary school mathematics teachers: Design and development research. *International Journal of Academic Research in Progressive Education and Development*, 11(1). <https://doi.org/10.6007/ijarped/v11-i1/12342>
- Saini, N. S. A., & Rosli, R. (2021). Financial elements in teaching and learning of mathematics: A systematic review. *International Research in Education*, 9(1), 1. <https://doi.org/10.5296/ire.v9i1.1803>

Impact Assessment of an Income-Generating Project

Noriegen I. Amacio^{1*}, Farhana U. Alauya², Queenie Lyn G. Almerez³

¹Damñas Elementary School, Digos, Davao Del Sur, Philippines

²Digos City Central Elementary School, Digos, Davao Del Sur, Philippines

³Davao del Sur State College, Digos, Davao Del Sur, Philippines

*Corresponding Author Email: amacio.noriegen@gmail.com

Date received: May 12, 2024

Date revised: June 24, 2024

Date accepted: June 29, 2024

Originality: 90%

Grammarly Score: 99%

Similarity: 10%

Recommended citation:

Amacio, N., Alauya, F., Almerez, Q.L. (2024). Impact assessment of an income-generating project. *Journal of Interdisciplinary Perspectives*, 2(8), 271-277. <https://doi.org/10.69569/jip.2024.0237>

Abstract. This study aims to evaluate the effectiveness and sustainability of income-generating projects designed to provide beneficiaries with essential needs as outlined in the project plan. The study focuses on key areas such as monitoring, evaluation, and financial management to assess project sustainability. A comprehensive data collection process involved semi-structured interviews with project proponents. The data was then meticulously analyzed using thematic analysis. The analysis identified several key themes: dissemination of information about the product's introduction, measurement and evaluation, monitoring, stakeholder engagement, sustainability and effectiveness, and unique experiences. These themes were used to develop recommendations and conclusions regarding the projects' overall impact and sustainability.

Keywords: Income-generating project; Impact assessment; Project monitoring; Project evaluation; Financial management.

1.0 Introduction

Income-generating programs (IGPs) are initiatives designed to provide long-term income for individuals, families, and communities, particularly in areas where poverty is widespread and access to essential needs like food, housing, and healthcare is limited. IGPs have positively impacted poverty alleviation, economic growth, and social development. They contribute to the long-term prosperity of individuals and communities by reducing reliance on external assistance and promoting self-sufficiency.

Low-income rural and urban populations often face significant challenges, including limited income opportunities, high levels of poverty and inequality, low educational attainment, and restricted access to socioeconomic services. To address these challenges, households frequently need to find additional sources of income. In such contexts, income-generating activities are crucial in restoring and enhancing livelihood systems. These activities help disadvantaged populations generate sustainable income to meet their basic needs despite potential obstacles like resource shortages, limited market access, and social and cultural barriers.

In the Philippines, schools encounter various challenges, such as limited financial resources, inadequate facilities, and unequal resource distribution, which hinder providing inclusive and high-quality education. IGPs offer a potential solution by supplementing limited financial resources, improving sustainability, and promoting innovative teaching approaches. Understanding the socioeconomic, cultural, and institutional factors shaping the educational landscape in the Philippines is essential to comprehend the impact of IGPs.

Assessing the impact of IGPs provides valuable insights into their success and effectiveness in achieving goals like financial sustainability, skill development, and community engagement. Impact assessment helps identify best practices, challenges, and areas for improvement, thereby informing evidence-based decision-making and

strategic planning. Moreover, it enhances accountability and transparency by demonstrating the benefits and added value IGPs provide to stakeholders, including students, educators, parents, and the broader community.

Many schools need more budget constraints and funding, which impede their ability to deliver essential services and high-quality education. IGPs can provide schools with a reliable income source to cover operational costs, invest in infrastructure improvements, and support educational programs. By diversifying their income sources, schools can reduce dependence on government subsidies and external funding, ensuring financial stability even in challenging economic conditions.

IGPs offer students experiential learning opportunities that complement academic curricula and classroom instruction. Whether through school gardens, cafeteria management, or handicraft production, students gain hands-on experience in entrepreneurship, marketing, financial management, and teamwork. These experiences prepare students for future careers and business ventures, enhancing academic achievement and essential life skills.

IGPs can also strengthen the connection between schools and their surrounding communities, fostering collaboration and mutual support. Involving local stakeholders in project planning, implementation, and decision-making builds trust, encourages civic participation, and meets community needs. Additionally, IGPs can serve as platforms for social impact activities, such as cultural preservation, poverty alleviation, and environmental conservation, empowering students to become agents of positive change in their communities.

Many IGPs in Philippine schools focus on promoting cultural heritage, traditional crafts, and indigenous practices, contributing to cultural preservation and heritage conservation efforts. By reviving traditional practices, schools celebrate local culture and instill pride and appreciation for cultural diversity among students. IGPs centered on cultural heritage can also facilitate intergenerational learning, where elders share their knowledge and wisdom with younger generations, ensuring the continuity of cultural practices.

School income-generating ventures aim to provide students with entrepreneurial skills by integrating technical knowledge with business techniques and management. These initiatives also generate funds to support the financial sustainability of schools (Kipkoech, 2018). Odundo and Rambo (2013) noted that funds from school-based IGAs were used for staff motivation, building maintenance, infrastructure development, and procuring instructional resources. However, these initiatives often need more financing, better record-keeping, and a lack of skilled staff.

According to Ugwu and Nebedum (2018), income-generating activities help schools increase revenue outside of statutory allocations, enhancing school finances without adding to parents' financial burdens. School-based IGPs can help schools absorb macroeconomic shocks and maintain financial stability. However, there are no policy standards for initiating, operating, evaluating, and reporting on IGPs, leading to varied performance across schools (Kiarie et al., 2019). Therefore, regular monitoring and evaluation, financial management training, technical assistance, and recognition for successful IGP implementation are essential for maximizing the benefits of these programs.

2.0 Methodology

2.1 Research Design

This study employed a qualitative research design using a phenomenological approach. Creswell and Poth (2016) state that a phenomenological study describes the meaning of lived experiences of a concept or phenomenon for several individuals. Similarly, Mortazavizadeh, Nili, Isfahani, and Hassani (2017) emphasize that phenomenology seeks to describe and interpret specific experiences from the perspectives of those who have lived them. Savage-Austin and Honeycutt (2011) add that phenomenology involves gathering and exploring live experiences. This study investigates the lived experiences of participants in implementing an income-generating project. It aims to determine their coping mechanisms in addressing the challenges encountered during the project's implementation and to identify insights that can be shared with the academic community about income-generating projects.

2.2 Research Participants

A purposeful sampling technique was used to select participants for this study. This approach identified and selected learners who benefited from the income-generating "Kakanin ng Kinabukasan" project at Buguis Elementary School. It also selected teachers who were involved in implementing the project. Four proponent teachers participated in the Focus Group Discussion (FGD). These teachers, who were willing to share their practices, were the program holders of the project. Triangulation enhanced the study's credibility by incorporating multiple data sources or methodologies for data analysis.

2.3 Data Collection Procedure

The researcher and participants convened virtually to discuss the study's purpose, potential benefits, logistical details, and schedules for interviews and FGDs. Participants in the FGD were provided with a consent letter. The researcher conducted the actual interviews and discussions at agreed-upon times. Video recordings of the sessions were reviewed and transcribed, ensuring robust and meaningful data collection while prioritizing participants' well-being.

2.4 Data Analysis

Data analysis involved three key steps: data reduction, data display, and conclusion drawing/verification. During data reduction, the participants' recorded responses were transcribed and interpreted, and decisions were made on coding and categorizing the data. For data display, the researchers presented the information thematically, drawing themes from participants' narrations. In conclusion, drawing/verification, initial patterns, and themes were identified. Transcripts were studied and re-read, and notes were taken as themes and ideas developed. The analysis identified common themes that addressed participants' experiences and the challenges encountered during the project's implementation.

2.5 Trustworthiness of the Study

Trustworthiness in qualitative research ensures that the findings accurately reflect the participants' lived experiences (Curtin & Fossey, 2007). Gunawan (2015) emphasizes the importance of triangulation in reducing investigator bias and ensuring reliability. This study employed member checking, triangulation, and systematic coding to maintain rigor and consistency.

Member Checking. Used to confirm the accuracy of participants' responses during the interviews. Anney (2014) states that confirmability involves showing that data and interpretations are derived from the data and not the inventions of the researcher. Experts reviewed the data to ensure accuracy and integrity.

Credibility. Evaluate whether the data representation fits the participants' views and whether the findings are true (Hannes, 2011). Techniques used include member checking, peer debriefing, attention to negative cases, independent data analysis, and verbatim quotes.

Dependability. Assesses whether the research process is logical, traceable, and clearly documented. Anney (2014) notes that dependability involves evaluating findings, interpretations, and recommendations to ensure they are supported by the data. The researcher documented the methods used to allow readers to assess the study's appropriateness.

2.6 Ethical Considerations

The researcher signed a confidentiality agreement with the informants via email, assuring them that their critical information would remain confidential and used solely for the research study. Informants were asked for permission to use their real names. The researcher formally approached the informants regarding appointments, personal information, and cooperation for the study's success.

3.0 Results and Discussion

The following themes emerged from the analysis:

Theme 1: Dissemination of Information Regarding the Product's Introduction

A significant challenge encountered during the project implementation was disseminating information about the product's introduction. It was essential for a broader audience to witness the demonstration, as increased visibility would likely motivate more participants to engage with and complete the project at home, potentially leading to

wider adoption of the product. Additionally, the program faced logistical hurdles during its execution. One such challenge involved obtaining a permit from the district nurse to reproduce and display the products at the school canteen. Although permission was eventually granted, it came with certain restrictions. Expressly, the display and sale of kakanin, such as banana cue, were limited to three times a week, a condition that all stakeholders agreed upon. Teacher 1 highlighted this issue in the following statement:

"We would have liked to sell in the canteen more frequently, but the district nurse-imposed restrictions. We are only allowed to sell maruya, hotcakes, or any sweet products three times a week."

Theme 2: Monitoring and Evaluation

Monitoring and evaluation are essential components of project management as they allow for assessing a project's effectiveness and determining whether it has met its objectives. According to Patangay et al. (2017), project measurement and evaluation involve the systematic collection and analysis of data to assess progress and identify areas for improvement. With your active participation, the school-based Management (SBM) committee will measure and evaluate the project's outcomes. The project will be deemed successful if evidence of school supplies purchases is produced and audited. The committee will monitor and continue the project to see if it is effective, sustainable, and beneficial.

Monitoring enables educational institutions to track the development and performance of their income-generating projects (IGPs) in real time. By gathering and analyzing data on various factors, including financial performance, production output, sales income, and customer satisfaction through methods such as surveys, financial reports, and sales records, educational institutions can identify strengths, weaknesses, and areas for improvement. Monitoring allows prompt interventions to address issues, optimize processes, and capitalize on opportunities, enhancing the project's efficiency and effectiveness. It also fosters a culture of learning and continuous development within educational institutions. Lessons learned from monitoring and evaluation processes inform future decision-making and curriculum adjustments. Over time, institutions can develop knowledge, capability, and resilience by reflecting on successes and failures, identifying best practices, and sharing experiences. The literature underscores the importance of monitoring and evaluation for project sustainability. According to Lui and Chan (2015), regular monitoring and evaluation help project managers identify areas for improvement and ensure long-term sustainability. Teacher 4 mentioned during the interview:

"We have a School-Based Management Team that monitors the project's progress every month."

In close collaboration with the SBM committee, the proponents ensured that the project was meticulously monitored. The product was distributed to the school canteen of Buguis Elementary School, and a product launch and demonstration were conducted for stakeholders and pupils to encourage them to generate income by making the product. A key element of beneficiary assessment is understanding the needs and priorities of project beneficiaries. Chambers (1997) emphasizes that understanding the perspectives and experiences of beneficiaries is crucial for developing effective and impactful projects. This involves engaging beneficiaries in the project's design and implementation.

After seven months of operation, the proponents audited their income and found they had earned a profit of one thousand five hundred pesos. This profit was used to purchase school supplies distributed to recipients in April 2024. The project, which is expected to run for a total of three years, is currently in the product-selling phase, with income being saved to procure school supplies for the upcoming school year. If these procedures are followed and continued until the end of the targeted implementation period in 2026, it can be concluded that the program effectively aided the beneficiaries. Teacher 3 shared the project's positive outcome after seven months of operation:

"After seven months of operation, we made a profit, which we used to buy school supplies for our ten beneficiaries."

Theme 3: Stakeholder Engagement

Stakeholder engagement is a critical element for ensuring the sustainability of a project. According to Bierbaum et al. (2013), involving stakeholders in the design and implementation phases aligns the project with their needs and priorities, building support and increasing the likelihood of long-term success. Effective stakeholder

engagement fosters a sense of ownership and commitment among all parties involved. When stakeholders actively engage in planning and decision-making, they are more likely to feel invested in the project's success and motivated to contribute their time, energy, and resources toward its sustainability.

Building partnerships and collaborations with stakeholders helps create a supportive ecosystem that extends beyond the school, ensuring the long-term viability and impact of the income-generating project. Stakeholder engagement provides valuable feedback loops, enabling schools to monitor progress, evaluate outcomes, and adapt strategies in response to changing circumstances. By soliciting input from stakeholders throughout the project's lifecycle, schools can identify emerging challenges, seize new opportunities, and make informed decisions to optimize the project's impact and sustainability.

Fostering an open communication and collaboration culture empowers stakeholders to co-create solutions, share best practices, and collectively address possible obstacles. Teacher 3 emphasized the importance of stakeholder engagement with the following statement:

"We need to engage our stakeholders so they will be more inclined to support our income-generating project. If they do not participate, the project is unlikely to succeed."

Theme 4: Sustainability and Effectiveness

School-Based Management (SBM) and Income-Generating Projects (IGPs) are two strategic approaches that can significantly enhance the sustainability and effectiveness of educational institutions. According to Dimmock and Walker (2005), SBM empowers school stakeholders to participate in decision-making processes and allocate resources more effectively, while IGPs generate income and profits to support school operations and improve facilities and programs. Combining SBM and IGPs can potentially increase a school's financial sustainability. Mukunya (2016) notes that IGPs can provide additional income for schools, funding activities such as teacher training, infrastructure development, and student programs.

By implementing SBM, schools can ensure that the income generated from IGPs is used effectively and efficiently, with all stakeholders having a say in its allocation. Efficient IGPs enable educational institutions to maximize revenue production by optimizing existing resources and assets. Schools can generate value from underutilized assets through sustainable IGPs, such as renting unused facilities, utilizing local resources for agricultural or artisanal ventures, or monetizing skills and expertise within the school community.

Sustainable IGPs can provide long-term benefits for communities, students, and schools beyond immediate financial gains. Investments in infrastructure improvements, capacity-building efforts, and skills development programs can create long-lasting assets and capacities that contribute to educational excellence and community development. Moreover, sustained IGPs can serve as examples of innovation and best practices, inspiring other schools to replicate successful projects and drive positive change throughout the education sector.

Teacher 2 emphasized the importance of the sustainability and effectiveness of the project with the following statement:

"It is crucial for the income-generating project to be sustained so that more needy students can be helped and supported."

Theme 5: One-of-a-Kind Experience

Projects like these must prioritize the needs of our most important clients: the students. As future school leaders, we need to recognize the value of Income-Generating Projects (IGPs) and similar initiatives that foster partnerships between the community and stakeholders. It's essential to think creatively to develop engaging projects and programs that generate income for the benefit of the school and its stakeholders. Involving teachers and parents in designing such programs is crucial since they are closely connected to the learners and can identify their needs and the types of programs that will address them.

Participating in the project allows students to engage in experiential learning opportunities beyond the traditional classroom setting. Through hands-on activities, students develop practical entrepreneurship, financial

management, marketing, and teamwork skills. This project encourages students to adopt an entrepreneurial mindset, leading to the identification of opportunities, the taking of measured risks, and the development of innovative solutions to real-world problems.

IGPs that promote creativity, resilience, and problem-solving skills enable students to think critically, adapt to changing situations, and seize growth opportunities. Successful project execution helps students realize their potential, develop a sense of agency and autonomy, and gain self-confidence. Overcoming challenges, achieving significant milestones, and seeing the tangible results of their efforts instill self-assurance, perseverance, and a belief in their ability to effect positive change in their lives and communities.

This was affirmed by one of the students who participated in the project:

"I really enjoy selling kakanin because I learned about business, even in small ways. The profit we make helps meet my needs."

4.0 Conclusion

The findings underscore the significance of IGPs in positively influencing the lives of beneficiaries, emphasizing the individualized impact. Understanding these impacts is crucial for school-based management (SBM) initiatives to address the diverse needs of schools and learners. While the research revealed positive and negative outcomes across all participants, it underscores the broad-reaching effects of IGPs beyond a select group of beneficiaries.

Implementing IGPs represents a promising avenue for providing financial assistance to students, equipping them with practical skills, and fostering entrepreneurial spirit. This research contributes to the broader understanding of IGPs' efficacy in addressing educational and financial challenges, highlighting their relevance in enhancing student well-being and academic success.

In conclusion, this study on impact assessment of income-generating projects advances the field of education by offering insights into effective financial strategies, fostering community engagement, promoting innovation, and influencing educational policies. This research is instrumental in the development of educational systems that are more sustainable, resilient, and impactful, thereby benefiting students, educators, and communities. It provides insights into how schools can generate additional income through various projects and how this income can be effectively managed and reinvested to improve educational outcomes. This knowledge is crucial as many educational institutions globally face financial constraints and need sustainable funding sources. Further studies are suggested to explore how to maintain the sustainability of income-generating projects in schools.

5.0 Contributions of Authors

Throughout the process, all authors are given equal credit for their contributions to this collaborative endeavor. The final product was a cohesive and well-rounded result, as each individual contributed to every aspect of the project. Additionally, all authors were actively engaged in the review process, meticulously analyzing the content and offering valuable feedback to enhance and fortify the manuscript. The final version of this work was unanimously endorsed by all contributing writers as a result of the comprehensive review process and combined effort.

6.0 Funding

This study received no specific grant from any agency.

7.0 Conflict of Interests

The author declares that there is no conflict of interest about the publication of this paper.

8.0 Acknowledgment

The acknowledgment could go to those persons who provided intellectual assistance, technical help (including with writing, data analyses, proofreading, etc.), or specific equipment or materials.

9.0 References

- Anney, V. N. (2014). Ensuring the quality of the findings of qualitative research: Looking at trustworthiness criteria. *Journal of emerging trends in educational research and policy studies*, 5(2), 272-281.
- Bierbaum, R., Smith, J. B., Lee, A., Blair, M., Carter, L., Chapin, F. S., Fleming, P., Ruffo, S., Stults, M., McNeeley, S., Wasley, E., & Verduzco, L. (2013). A comprehensive review of climate adaptation in the United States: More than before, but less than needed. *Mitigation and Adaptation Strategies for Global Change*, 18(3), 361-406. <https://doi.org/10.1007/s11027-012-9423-1>
- Creswell, J. W., & Poth, C. N. (2016). *Qualitative inquiry and research design: Choosing among five approaches*. Sage publications.
- Curtin, M., & Fossey, E. (2007). Appraising the trustworthiness of qualitative studies: Guidelines for occupational therapists. *Australian Occupational Therapy Journal*, 54(2), 88-94. <https://doi.org/10.1111/j.1440-1630.2007.00661.x>
- Gunawan, J. (2015). Ensuring trustworthiness in qualitative research. *Belitung Nursing Journal*, 1(1), 10-11. <https://doi.org/10.33546/brnj.4>

- Kiarie, B., Gesimba, P., & Mwaura, P. (2019). Examining the effects of income generating activities on physical infrastructural development among public high schools in Molo Sub-County of Nakuru County, Kenya. *East African Scholars Journal of Education, Humanities and Literature*, 2(8), 495-503.
- Kipkoech, C. (2018). Determinants of implementation of income generating projects in public secondary schools in Konoin district, Bomet County, Kenya. *Journal of Business and Management*, 20(3), 64-68.
- Odundo, P. A., & Rambo, C. M. (2013). Effect of school-based income generating activities on the financial performance of public secondary schools in Kenya.
- Patangay, S., Park, J. C., Ghahari, E., McAnany, J. J., Vajaranant, T. S., & Hetling, J.R. (2017). Pattern electroretinogram responses from the far-peripheral retina (ring and sector stimuli) in healthy eyes and in eyes with glaucoma. *Investigative Ophthalmology & Visual Science*, 58(8), 5875-5875.
- Ugwu, I., & Nnebedum, C. (2018). Analysis of income generating activities of Anambra State Secondary School Principals as Funding Strategies in a Depressed Economy. *UNIZIK Journal of Educational Management and Policy*, 2(1), 131-138.

Property Management Practices Implementation and Cost Measures Efficiency in the City Government of Calamba: Basis for Action Plan

Maria Lorena G. Dela Cruz

Laguna College of Business and Arts, Calamba City, Laguna, Philippines

Author email: lorenadelacruz630630@gmail.com

Date received: June 15, 2024

Date revised: June 24, 2024

Date accepted: July 1, 2024

Originality: 95%

Grammarly Score: 99%

Similarity: 5%

Recommended citation:

Dela Cruz, M.L. (2024). Property management practices implementation and cost measures efficiency in the City Government of Calamba: basis for action plan. *Journal of Interdisciplinary Perspectives*, 2(8), 278-290. <https://doi.org/10.69569/jip.2024.0280>

Abstract. The focus of this study was to assess the implementation of property management practices and efficiency of cost measures in the City Government of Calamba, aiming to provide insights into key areas of concern and potential strategies for improvement. The study employed a descriptive correlational approach, combining quantitative analysis of stakeholder perceptions. Data were collected using a researcher-made questionnaire through paper surveys and Google forms with 134 respondents, consisting of 20 heads and 114 employees from the office concerned with the implementation of property management practices in the City Government of Calamba. For the treatment of quantitative data, the mean and four-point likert scale, paired t-test, the pearson product moment correlation coefficient and multiple linear regression analysis were used. The analysis revealed that first, the level of implementation of property management practices varied across different areas, with planning, acquisition, and utilization demonstrating robust implementation, while maintenance and disposal of public assets exhibited areas for improvement. Second, the assessment of cost measures efficiency reflected generally high, particularly in funding allocation and technology although skilled personnel needs enhancements. Third, the absence of significant differences in assessment between heads and employees underscored organizational cohesion and alignment of perspectives. Fourth, a significant relationship between property management practices and cost measures highlighted their interconnectedness and the importance of a holistic approach to organizational management. Based on the findings, an action plan entitled, "Strengthening the Property Management Practices and Promoting Cost Efficiency in the City Government of Calamba" was proposed to address the areas of concern in the City Government of Calamba, improve its overall property management practices and enhance cost measures efficiency, ultimately leading to more effective and sustainable governance.

Keywords: Property management practices; Cost measures efficiency; City government; Action plan.

1.0 Introduction

Local governments played a crucial role in the economic development of their respective areas, and managing public assets is a necessary aspect of this responsibility. The efficient property management practices, including planning, acquisition, utilization, maintenance, and disposal, significantly impacted cost efficiency and ultimately benefited the local community. However, improper management of these assets resulted in wastage of resources, additional costs, and even legal liabilities. The effective management of public property was, therefore, central to the efficient and effective delivery of public services according to Organization for Economic Co-Operation and Development, OECD (2019).

The International City/County Management Association, ICMA (2021) underscored the escalating significance of proficient property management practices of local government units. Factors such as optimizing the value and utilization of public assets, tackling aging infrastructure, adapting to evolving community needs, and ensuring compliance with regulations were paramount, International City/County Management Association, ICMA (2020). The citation Echoing this sentiment, the United Nations Development Programme, UNDP (2021) emphasized the critical role of local governments in orchestrating sustainable urban development through judicious asset management. Furthermore, the growing trend of leveraging property assets for revenue generation and fostering economic development was highlighted by the National League of Cities, NLC (2020).

Despite the evident importance of effective property management practices and cost measures efficiency, local governments grapple with multifaceted challenges in these domains. Scarce resources often hinder the implementation of comprehensive management strategies, while competing priorities frequently relegate property management to a secondary role, resulting in missed opportunities and inefficiencies. Additionally, the burden of maintaining aging infrastructure strains already constrained budgets, exacerbating the challenge of delivering quality public services.

Regulatory compliance posed another formidable challenge, with local governments navigating a labyrinth of standards and regulations governing property management. Failure to meet these standards not only exposes governments to legal liabilities but also undermines public trust. Moreover, effective risk management is essential to mitigate potential losses arising from property-related liabilities and disasters.

On the other hand, Tuan and Nguyen (2019) said that cost measures efficiency was an important consideration in the management of local government units (LGUs), but it can also have potential drawbacks and limitations. One problem with a narrow focus on cost measures efficiency in LGUs was that it led to underinvestment in critical public services and infrastructure, which had negative impacts on long-term economic growth and social welfare. Additionally, cost-efficiency measures did not always consider the unique needs and circumstances of local communities, which resulted in one-size-fits-all solutions that failed to address local needs effectively. LGUs must consider factors such as community needs, citizen participation, and local government capacity when developing cost-efficiency measures. These provided insights into the potential problems with a narrow focus on cost efficiency in LGUs and highlighted the importance of adopting a balanced approach that considered both short-term and long-term needs, while also being responsible for local community needs and priorities. Meaningful community engagement was vital for aligning property management decisions with local needs and preferences. However, low levels of citizen participation often impeded effective governance, hindering the formulation of inclusive and responsive policies.

The City Government of Calamba is recently implementing the one-time cleansing of all Property, Plant and Equipment account balances, as mandated by the Commission on Audit. The local government unit created an inventory committee/team to lead the implementation of this program. During the actual counting, the committee noticed the lack in the management of government property. Section 2 of PD no. 1445 otherwise known as the State Auditing of the Philippines states that “all resources of the government shall be managed, expended or utilized by laws, rules, regulations, and safeguarded against loss or wastage.” Hence, government employees must understand the importance of proper management of government property.

In essence, addressing these challenges is paramount for local governments, particularly in Calamba City, to realize their potential as engines of sustainable development and providers of essential public services. By acknowledging and confronting these hurdles head-on, policymakers can pave the way for more efficient and equitable management of local government properties, ultimately benefiting the entire community.

2.0 Methodology

2.1 Research Design

The study utilized a descriptive correlational method employing a quantitative research design. Aya et al. (2022) emphasized that the descriptive correlational approach was appropriate when the goal of the research was to assess relationships. The approach enabled researchers to describe the nature and strength of relationships between variables, as well as identify the factors that influenced the relationships. The approach was particularly

useful when the focus was on exploring relationships between variables rather than establishing causality. In the context of the study, the use of a descriptive correlational approach allowed the researcher to identify and describe the relationship between property management practices and cost measures efficiency.

2.2 Research Participants

The respondents for this study included two groups: department heads and employees of the Calamba City government who were directly involved in the management of government properties and had sufficient knowledge and experience in the subject matter. The selection of respondents was based on their job titles and responsibilities in the management of government properties. The Heads group consisted of 20 individuals, representing approximately 15% of the total population of 29 heads in the City Government of Calamba. These heads, including Property Management Officers, were selected based on their leadership roles and direct involvement in overseeing the management of government properties. On the other hand, the Employees group comprised 114 individuals, accounting for around 85% of the total population of 161 employees in various offices of the City Government of Calamba.

2.3 Research Instrument

The survey instrument was researcher-made questionnaire to align closely with the study's objectives and research inquiries. Drawing from the specific context of Calamba, Laguna City Government, the questionnaire encompassed inquiries into various facets of local government property management practices implementation and cost measures efficiency.

2.4 Data Gathering Procedure

Personal administration of the survey questionnaire by the researcher was crucial to the process. Each respondent was approached respectfully, and the purpose and procedures of the study were explained clearly before obtaining their informed consent to participate. It was emphasized that participation in the survey was voluntary, and respondents were assured that their decision to participate or not would not affect their standing within the organization. The survey questionnaire was administered in various locations within the City Government of Calamba, strategically to reach the targeted respondents efficiently. These sites included government offices and facilities where employees involved in property management were typically stationed.

2.5 Data Analysis Procedure

Once the data were collected, they were carefully compiled and organized for analysis. The assistance of statisticians was sought to perform quantitative analysis using appropriate statistical methods, such as descriptive statistics, correlation analysis, and regression analysis, to answer the research questions effectively. Furthermore, the study analyzed the data using statistical tools such as descriptive statistics, inferential statistics, and correlation analysis. Descriptive statistic (the mean), were used to summarize and describe the data, while inferential statistics (paired t-test) were used to test hypotheses and draw conclusions about the population based on the sample data. Correlation analysis (the Pearson Product Moment Correlation Coefficient) was used to determine the relationship between property management practices and cost efficiency.

2.6 Ethical Considerations

In conducting this study, ethical considerations were paramount to ensure the integrity and credibility of the research. Adhering to the ethical guidelines outlined in the Research Manual of Laguna College of Business and Arts, the study prioritized the welfare and rights of all participants involved. To begin with, explicit consent was obtained from all participants through an "Informed Consent" letter, which provided comprehensive information about the study's purpose, procedures, potential risks and benefits, and participants' rights. This allowed participants, including those responding to the survey questionnaire, to make informed decisions regarding their involvement. Moreover, measures were implemented to safeguard the confidentiality and anonymity of participants' personal information, responses, and identities in compliance with the Data Privacy Act of 2012. This ensured that participants felt secure in sharing their perspectives without fear of disclosure. Participants were assured of the voluntary nature of their participation, with no coercion or pressure exerted upon them to participate in the study. They were explicitly informed of their right to withdraw from the study at any point without facing repercussions. Additionally, steps were taken to avoid potential harm to participants, including avoiding sensitive questions and ensuring that the study did not cause emotional distress or harm to individuals.

or the broader community. Finally, an Institutional Review Board (IRB) or Ethics Committee sought approval based on institutional policies. This oversight ensured that the research design and procedures adhered to ethical standards and complied with relevant regulations. Through meticulous attention to these ethical considerations, the study upheld the highest standards of research integrity, fostering a conducive environment for the welfare and rights of all participants involved.

3.0 Results and Discussion

3.1 Level of Implementation of Property Management Practices in the City Government of Calamba

In terms of Planning

Table 1. Descriptive statistics of the level of implementation of PMP in the city government of calamba in terms of planning

Indicators	Heads		Employees		Composite	
	Mean	Interp.	Mean	Interp.	Mean	Interp.
The local government unit ...						
1. Comprehensive and achievable.	3.50	FI	3.31	FI	3.41	FI
2. Consistent with City Development Plan	3.50	FI	3.24	I	3.37	FI
3. Ensures accountability pursuant to law.	3.58	FI	3.41	FI	3.50	FI
4. Addresses the current and future need of the city.	3.42	FI	3.27	FI	3.35	FI
5. Ensures stakeholders participation and accountability.	3.25	FI	3.23	I	3.24	I
6. Ensures the proper allocation of fund.	3.75	FI	3.29	FI	3.52	FI
General Assessment	3.50	FI	3.29	FI	3.40	FI

Legend: 3.25-4.00 Strongly Agree - Fully Implemented (FI) 2.50-3.24 Agree - Implemented (I)
1.75-2.49 Disagree - Slightly Implemented (SI) 1.00-1.74 Strongly Disagree - Not Implemented (NI)

Planning was Fully Implemented (3.40). The Property Management Plan of the local government unit “ensures the proper allocation of funds” yielded the highest composite mean score of 3.52 interpreted as Fully Implemented. On the other hand, the Property Management Plan of the local government unit “ensures stakeholders' participation and accountability” received the lowest composite mean score of responses with 3.24 and was interpreted as Implemented. These findings imply that the city government has effectively allocated funds in line with its property management plan, indicating a robust financial management system. They ensure that the right amount of funds is set aside to acquire, use, maintenance of property, and dispose of assets. And make sure that all budget is utilized to proper allocation.

It was like what Huang et al. (2019) mentioned when they emphasized the importance of efficient planning in local government property management. They argued that the use of a systematic planning approach can help local governments identify and prioritize the areas that require attention, such as maintenance and repairs, and allocate resources more effectively. The authors suggested that local government property management should be based on a comprehensive and strategic plan that considers the needs of stakeholders, the available resources, and the long-term objectives of the organization.

In terms of Acquisition

Table 2. Descriptive statistics of the level of implementation of PMP in the city government of calamba in terms of acquisition

Indicators	Heads		Employees		Composite	
	Mean	Interp.	Mean	Interp.	Mean	Interp.
The local government unit ...						
1. Practices life cycle costing in asset acquisition.	2.83	I	3.10	I	2.97	I
2. Carefully sets and selects specification of assets to be procured.	3.25	FI	3.20	I	3.23	I
3. Conducts thorough analysis of the value and sustainability of assets to be procured.	3.21	I	3.14	I	3.18	I
4. Ensures property acquisition process is transparent or open to public scrutiny.	3.50	FI	3.25	FI	3.38	FI
5. Ensures property acquisition process is compliant with rules and regulation.	3.58	FI	3.36	FI	3.47	FI
6. Acquires the properties with adequate resources such as budget, personnel, and tools.	3.46	FI	3.37	FI	3.42	FI
General Assessment	3.31	FI	3.24	FI	3.28	FI

Acquisition was Fully Implemented (3.28). Notably, among the indicators, “the property acquisition process's compliance with rules and regulations” achieved the highest composite mean score of 3.47, indicating Full

Implementation. Conversely, “the practice of life cycle costing in asset acquisition” garnered the lowest composite mean score of responses at 2.97, interpreted as Implemented.

This implies that the City Government of Calamba is committed to acting following legal standards and regulatory requirements in its property acquisition processes. Following the rules and regulations of the city government exhibits transparency and accountability in the process of acquiring property and also nurtures the public trust in the city government’s operations. The City Government of Calamba demonstrates commendable adherence to regulatory standards in property acquisition, there is a clear opportunity for improvement in integrating life cycle costing practices.

The above findings support what Reiner et al. (2019) mentioned that another important factor affecting the acquisition process was the legal framework. The authors emphasized the importance of legal and regulatory frameworks in local government property acquisition. They argued that clear and transparent regulations were necessary to ensure that the acquisition process was fair and equitable. Moreover, they suggested that local governments should engage with their communities to ensure that the acquisition process was inclusive and considered the needs and interests of all stakeholders.

In terms of Utilization

Table 3. Descriptive statistics of the level of implementation of PMP in the city government of calamba in terms of utilization

Indicators	Heads		Employees		Composite	
	Mean	Interp.	Mean	Interp.	Mean	Interp.
The local government unit ...						
1. Utilizes the properties procured for their intended purposes and identifies the unused and underutilized properties.	3.38	FI	3.20	I	3.29	FI
2. Provides a clear process for the utilization of government properties.	3.25	FI	3.24	I	3.25	FI
3. Conducts regular monitoring of assets utilization and implements corrective action when necessary.	3.25	FI	3.18	I	3.22	I
4. Ensures that properties are located in proper places.	3.13	I	3.20	I	3.17	I
5. Utilizes properties with adequate resources such as budget, personnel, and tools.	3.46	FI	3.35	FI	3.41	FI
6. Promotes cost efficiency in the use of local government properties.	3.29	FI	3.11	I	3.20	I
General Assessment	3.29	FI	3.21	I	3.25	FI

Utilization was Fully Implemented (3.25). Among the indicators, “utilizing properties with adequate resources” received the highest composite mean score of 3.41, indicating Full Implementation. Conversely, “ensuring that properties are located in proper places” received the lowest composite mean of 3.17, interpreted as Implemented. This connotes that the city government effectively utilizes properties procured for their intended purposes, but there are challenges in ensuring that properties are situated in suitable locations. The City Government of Calamba demonstrates commendable effectiveness in utilizing properties and ensuring resource availability, however, there is lacking proper placement of the property.

According to Aryee et al. (2019), optimal utilization of local government property required the establishment of clear policies and guidelines for the use of the assets. The study recommended the development of a comprehensive asset management plan to guide the utilization of local government property and promote accountability Furthermore, Yudiarto (2020) claimed that one of the challenges encountered by the Pandeglang Regency Government in managing asset management was the disarray in handling asset data during their use and utilization. This situation created difficulties for regional authorities in accurately assessing their asset inventory, leading to suboptimal utilization. Yudiarto's study investigated the impact of asset inventory, legal audits, asset valuation, asset supervision, and asset control on maximizing the use of fixed assets in the Pandeglang Regency. The research revealed a partial influence of 13.15% from asset inventory, 15.75% from legal audits, 21.84% from asset valuation, and 20.59% from asset supervision and control on optimizing fixed asset utilization. Additionally, a significant combined influence of 71.3% was observed. Yudiarto recommended that local governments implement an asset management information system for fixed asset utilization and conduct inventories every five years to ensure accurate accounting of regional property data during both use and utilization.

In terms of Maintenance

Table 4. Descriptive statistics of the level of implementation of PMP in the city government of calamba in terms of maintenance

Indicators	Heads		Employees		Composite	
	Mean	Interp.	Mean	Interp.	Mean	Interp.
The local government unit ...						
1. Identifies properties that require maintenance or repair in an organized manner.	3.04	I	3.16	I	3.10	FI
2. Schedules the maintenance and repair of properties reasonably and realistically.	3.13	I	3.16	I	3.15	FI
3. Ensures an adequate budget, personnel and tools for property maintenance and repair.	3.29	FI	3.24	I	3.27	FI
4. Reviews and updates regularly the conduct of maintenance or repair of all properties.	3.13	I	3.08	I	3.11	I
5. Ensures a clear policy for conducting regular inspections or preventive maintenance to prolong the life of properties.	3.17	I	3.14	I	3.16	I
6. Minimizes the need for major repairs or replacements to properties.	3.00	I	3.07	I	3.04	I
General Assessment	3.13	I	3.14	I	3.14	I

Maintenance was Implemented (3.14). Among the indicators, “ensuring an adequate budget, personnel, and tools for property maintenance and repair” attained the highest composite mean score of 3.27, indicating Full Implementation. Conversely, “the minimization of the need for major repairs or replacements to properties” received the lowest composite mean score of 3.04, interpreted as Implemented. This implies that ensuring an adequate budget, personnel, and tools for property maintenance and repair underscores the city government's commitment to allocating resources effectively to maintain its properties. This allocation not only facilitates timely maintenance and repairs but also enhances the longevity and functionality of the city's assets. The City Government of Calamba demonstrates commendable efforts in allocating resources for property maintenance and repair, however lacks in the minimization for major repairs or replacements to properties.

On the contrary, Khairi et al. (2019) stressed the need for local governments to implement a comprehensive maintenance strategy that considered the type of assets, age, condition, and usage. They argued that an effective maintenance strategy should involve regular inspection and assessment of assets, prioritization of maintenance activities based on criticality, and the use of appropriate maintenance techniques and tools. Similarly, Panganiban et al. (2019) also emphasized the importance of preventive maintenance in local government property management. The authors noted that preventive maintenance not only reduced downtime and repair costs but also improved safety and extended the asset's life. The study recommended the use of computerized maintenance management systems (CMMS) to facilitate the implementation of preventive maintenance activities and improve maintenance planning and scheduling. Henceforth, effective maintenance was an essential component of local government property management, and its implementation can lead to significant cost savings and improved asset performance.

In terms of Disposal of Public Assets

Table 5. Descriptive statistics of the level of implementation of PMP in the city government of calamba in terms of disposal of public assets

Indicators	Heads		Employees		Composite	
	Mean	Interp.	Mean	Interp.	Mean	Interp.
The local government unit ...						
1. Sets an acceptable clear policy for the disposal of public assets that are no longer needed.	3.08	I	3.20	I	3.14	I
2. Implements and transparently processes the disposal of public assets.	3.25	FI	3.19	I	3.22	I
3. Identifies the assets that can be disposed in well manner.	3.17	I	3.26	FI	3.22	I
4. Implements the disposal of public assets in accordance with applicable laws or regulations.	3.46	FI	3.31	FI	3.39	FI
5. Practices recycling, repurposing and sale in the disposal of public assets.	3.00	I	3.03	I	3.02	I
6. Provides adequate resources such as budget, personnel and tools in disposing public asset.	3.29	FI	3.21	I	3.25	FI
General Assessment	3.21	I	3.20	I	3.21	I

Disposal of Public Assets was Implemented (3.21). Among the indicators, “implementing the disposal of public assets in accordance with applicable laws or regulations” obtained the highest composite mean score of 3.39,

indicating Full Implementation. Conversely, “practicing recycling, repurposing, and sale in the disposal of public assets” received the lowest composite mean score of 3.02, interpreted as Implemented.

This means that the high score in implementing the disposal of public assets under applicable laws or regulations underscores the city government's commitment to adhering to legal requirements and regulatory frameworks in asset disposal processes. This adherence promotes transparency, accountability, and compliance with established procedures, mitigating the risk of legal issues or irregularities in asset disposal activities. The City Government of Calamba demonstrates diligence in ensuring legal compliance in asset disposal.

The above findings were similar to the study by Ochieng et al. (2020) which emphasized the need for local governments to adopt environmentally sustainable disposal practices in line with global sustainability goals. The study recommended the adoption of green disposal practices such as recycling and reusing assets as a way of reducing waste and minimizing environmental impact.

In support of the above claims, Obicci et al. (2021) emphasized the significance of asset disposal as a critical phase in the procurement cycle within public organizations. They noted that while asset disposal was often viewed as the final stage in the lifecycle of assets, it held substantial potential for embedding reusable value into assets at the end of their use. Despite being commonly associated with failures in the public procurement process, asset disposal presented ample opportunities for advancing sustainable procurement practices. The study highlighted the critical role of strategic assets management, planning for asset disposal, and the selection of disposal mechanisms as key enablers for the successful disposal of public assets and underscored their significance in promoting sustainable procurement practices.

3.2 Level of Efficiency of Cost Measures in the City Government of Calamba In terms of Funding

Table 6. Descriptive statistics of the level of efficiency of cost measures in the City Government of Calamba in terms of funding

Indicators	Heads		Employees		Composite	
	Mean	Interp.	Mean	Interp.	Mean	Interp.
The local government unit ...						
1. Provides enough funds to support the city financial needs.	3.67	HE	3.49	HE	3.58	HE
2. Secures cost efficiency through proper allocation of funds for specific purposes especially in procuring government properties.	3.50	HE	3.20	E	3.35	HE
3. Ensures enough funds for the implementation of property management practices.	3.33	HE	3.31	HE	3.32	HE
4. Addresses funding gaps in property management practices through availability of alternative funding sources: e.g. grants, partnerships, loans.	3.21	E	3.27	HE	3.24	E
5. Makes effort to increase funding.	3.13	E	3.28	HE	3.21	E
6. Establishes credible identity to secure funds from stakeholders and investors.	3.08	E	3.21	E	3.15	E
General Assessment	3.32	HE	3.30	HE	3.31	HE

Funding was Highly Efficient (3.31). Among the indicators “providing enough funds to support the city's financial needs” obtained the highest composite mean score of 3.58, indicating Highly Efficient. Conversely, “establishing a credible identity to secure funds from stakeholders and investors” received the lowest composite mean score of 3.15, interpreted as Efficient.

The city government's success in ensuring adequate financial resources to address various operational requirements and initiatives. This financial stability enhances the city's capacity to implement essential programs and services effectively, contributing to overall organizational efficiency. The results reflect the city government's success in ensuring adequate financial resources to address various operational requirements and initiatives. This financial stability enhances the city's capacity to implement essential programs and services effectively, contributing to overall organizational efficiency. The City Government of Calamba demonstrates efficiency in providing financial support for its operations.

This was similar to what Rahman and Khan (2020), cost efficiency was essential in local government operations because it enabled local governments to allocate resources effectively and efficiently. The authors distinguished that effective allocation of resources was crucial in ensuring that local governments meet their financial obligations

while providing quality services to citizens. On the contrary, De Silva et al. (2019) mentioned that local governments face several challenges in managing their finances and delivering services to their constituents. One of the key challenges was to achieve cost efficiency in their operations while ensuring adequate funding to meet the needs of the community.

In terms of Technology

Table 7. Descriptive statistics of the level of efficiency of cost measures in the City Government of Calamba in terms of technology

Indicators	Heads		Employees		Composite	
	Mean	Interp.	Mean	Interp.	Mean	Interp.
The local government unit ...						
1. Uses technology in managing the properties; e.g. property management software, mobile applications.	3.46	HE	3.20	E	3.33	HE
2. Ensures enough and latest technology for the implementation of property management practices.	3.42	HE	3.11	E	3.27	HE
3. Provides technology training to its employees to help improve the implementation of property management practices.	3.29	HE	3.16	E	3.23	E
4. Ensures proper communication and coordination among departments through the use of modern technology in property management practices.	3.33	HE	3.13	E	3.23	E
5. Help improve the cost efficiency of property management practices by upgrading and modernizing technology.	3.42	HE	3.17	E	3.30	HE
6. Ensures the level of investment in technology for property management practices is sufficient to meet the needs of the local community.	3.38	HE	3.15	E	3.27	HE
General Assessment	3.38	HE	3.15	E	3.27	HE

Technology was Highly Efficient (3.27). Among the indicators, “use of technology in managing properties, such as property management software and mobile applications”, had the highest composite mean score of 3.33, interpreted as Highly Efficient. However, “ensuring enough and latest technology for the implementation of property management practices and providing technology training to employees” both received the lowest composite mean scores of 3.27, interpreted as Efficient.

The disparity in scores indicates a mixed level of efficiency in technology utilization for property management practices within the City Government of Calamba. While the city government excels in using technology for property management tasks. The city government demonstrates a commendable level of efficiency in certain aspects of technology utilization, particularly in managing properties using advanced tools.

This was parallel to what Alhassan and Adzawla (2019) mentioned that technology played a significant role in achieving cost efficiency in local government operations. The study emphasized the need for local governments to adopt modern technology in their operations to improve service delivery, reduce operational costs, and promote transparency. Nkansah and Osei-Akoto (2019) also highlighted the importance of technology in improving the efficiency and effectiveness of local government operations. They contended that the adoption of technology can lead to a reduction in transaction costs, increase revenue collection, and improve service delivery.

In terms of Skilled Personnel

Table 8. Descriptive statistics of the level of efficiency of cost measures in the City Government of Calamba in terms of skilled personnel

Indicators	Heads		Employees		Composite	
	Mean	Interp.	Mean	Interp.	Mean	Interp.
The local government unit ...						
1. Ensures availability of skilled personnel in property management.	3.46	HE	3.19	E	3.36	HE
2. Ensures enough number of skilled personnel to implement the property management practices.	3.42	HE	3.14	E	3.28	HE
3. Regularly updates the size and capacity of available skilled personnel involved in property management.	3.25	HE	3.07	E	3.16	E
4. Regularly provides capacity building for property management personnel based on Civil Service Commission and office needed.	3.25	HE	3.11	E	3.18	E
5. Helps improve and updates the skills of personnel in property management practices with the availability of training and development programs.	3.21	E	3.14	E	3.18	E
6. Provides incentives to performing and outstanding personnel in property management of the city.	3.17	E	3.05	E	3.11	E
General Assessment	3.29	HE	3.12	E	3.21	E

The results imply that the City Government of Calamba has generally performed well in ensuring the availability and capacity of skilled personnel for property management practices. This means that the city government excels in ensuring the availability and capacity of skilled personnel for property management. This supported the study of Rambe and Rambe (2019), that skilled personnel were crucial for the effective and efficient delivery of public services by local governments. They disputed that investing in the recruitment, training, and development of skilled personnel can result in cost savings in the long run. Skilled personnel can perform their duties more efficiently, reducing the need for additional staff, and enhancing service delivery. In addition, Adeyemo et al. (2020) highlighted the importance of skilled personnel in promoting cost efficiency in local government operations. They claimed that the use of skilled personnel led to the optimization of available resources, improved decision-making, and the adoption of best practices, resulting in significant cost savings.

3.3 Difference in the Assessments Between the Heads and Employees Regarding the Level of Implementation of Property Management Practices and the Level of Efficiency of Controlling the Cost in the City Government of Calamba

Table 9. Analysis for the difference between the assessment of the heads and employees regarding the level of implementation of property management practices and the level of efficiency of controlling the cost in the City Government of Calamba

Variables	t test	P value	Remarks	Decision
Planning	1.685	0.094	Not Significant	Accept Ho
Acquisition	0.740	0.463	Not Significant	Accept Ho
Utilization	0.841	0.404	Not Significant	Accept Ho
Maintenance	0.189	0.851	Not Significant	Accept Ho
Disposal	0.069	0.959	Not Significant	Accept Ho
Funding	0.301	0.764	Not Significant	Accept Ho
Technology	2.033	0.098	Not Significant	Accept Ho
Skilled Personnel	1.429	0.216	Not Significant	Accept Ho

There was no significant difference in the assessment between heads and employees regarding both the level of implementation of property management practices and the efficiency of controlling costs in the City Government of Calamba. The variables examined include Planning, Acquisition, Utilization, Maintenance, Disposal, Funding, Technology, and Skilled Personnel. The t-test results yielded p-values from 0.094-0.959 which were greater than 0.05, indicating that the differences in assessment between heads and employees were not statistically significant. As a result, the null hypothesis (H_0) was accepted for all variables.

This implies that both groups are closely working with each other. The heads and employees of the City Government of Calamba are well-versed in the existing policies, rules, and regulations for the implementation of property management practices in the city government. They generally perceived the implementation and efficiency similarly. This suggests a level of consensus or alignment in their perceptions, indicating a harmonious understanding of property management practices and cost control measures within the organization. Such alignment can facilitate smoother implementation processes and more effective decision-making, contributing to overall organizational efficiency and effectiveness in property management and cost control.

In contrast, Bañez and Jandugan (2019) discovered that in the Philippines property management had a significant impact on the cost efficiency of LGUs. The study found that property management practices such as asset inventory, monitoring and maintenance, and regular property assessment contributed to cost savings and higher efficiency in LGUs. The authors recommended that LGUs should prioritize property management in their planning and budgeting process to achieve higher cost efficiency.

In the same light, Akinwale et al. (2021) also agreed that effective property management significantly reduced operating costs and increased revenue for local government units. The authors revealed that the impact of city government property management on cost efficiency was significant.

3.4 Relationship Between the Level of Implementation of Property Management Practices and the Efficiency of Cost Measures in the City Government of Calamba

There was a significant relationship between the level of implementation of Property Management Practices and level of efficiency of cost measures in the City Government of Calamba. In terms of Planning, a significant relationship was found with Funding ($r = .765$, $p = .000$), Technology ($r = .734$, $p = .000$), and Skilled Personnel ($r = .765$, $p = .000$).

= .776, $p = .000$). In terms of Acquisition, a significant relationship was found with Funding ($r = .776$, $p = .000$), Technology ($r = .744$, $p = .000$), and Skilled Personnel ($r = .742$, $p = .000$). In terms of Utilization, a significant relationship was found with Funding ($r = .808$, $p = .000$), Technology ($r = .795$, $p = .000$), and Skilled Personnel ($r = .774$, $p = .000$). In terms of Maintenance, a significant relationship was found with Funding ($r = .770$, $p = .000$), Technology ($r = .721$, $p = .000$), and Skilled Personnel ($r = .708$, $p = .000$). In terms of Disposal of Public Asset, a significant relationship was found with Funding ($r = .602$, $p = .000$), Technology ($r = .711$, $p = .000$), and Skilled Personnel ($r = .686$, $p = .000$). All results lead to the rejection of the null hypothesis.

Table 10. Analysis for the relationship between the level of implementation of property management practices and the level of efficiency of cost measures in the City Government of Calamba

Management Practices	Efficiency of Cost Measures	r value	p value	Remarks	Decision
Planning	Funding	.765**	.000	Significant	Reject Ho
	Technology	.734**	.000	Significant	Reject Ho
	Skilled Personnel	.776**	.000	Significant	Reject Ho
Acquisition	Funding	.744**	.000	Significant	Reject Ho
	Technology	.742**	.000	Significant	Reject Ho
	Skilled Personnel	.786**	.000	Significant	Reject Ho
Utilization	Funding	.808**	.000	Significant	Reject Ho
	Technology	.795**	.000	Significant	Reject Ho
	Skilled Personnel	.774**	.000	Significant	Reject Ho
Maintenance	Funding	.770**	.000	Significant	Reject Ho
	Technology	.721**	.000	Significant	Reject Ho
	Skilled Personnel	.708**	.000	Significant	Reject Ho
Disposal of Public Assets	Funding	.602**	.000	Significant	Reject Ho
	Technology	.711**	.000	Significant	Reject Ho
	Skilled Personnel	.686**	.000	Significant	Reject Ho

There was a strong relationship between the level of implementation of property management practices and the level of efficiency of cost measures in the City Government of Calamba as evidenced by their 4-values ranging from 0.602 to 0.808. This means that the higher the level of implementation of property management practices, the higher the cost measures efficiency, and the lower the level; of implementation of property management practices, the lower the cost measure efficiency in the City Government of Calamba. This underscores the importance of strategic resource allocation, technological advancement, and human resource management in achieving cost efficiency and effective property management within the organization.

This was similar to what Chen and Goh (2019) revealed that property management practices had a significant relationship with the cost efficiency of the government. The study revealed that LGUs with better property management practices had higher cost efficiency, and this can be attributed to the optimization of resources and reduction of wastage. The authors emphasized the importance of property management in public sector efficiency and urged LGUs to invest in improving their property management practices. Hence, the efficient management of government property can have a significant impact on the cost measures efficiency of local government units.

3.5 Proposed Action

Based on the findings of the study, several areas for improvement have been identified within the property management practices implementation and cost measures efficiency in the City Government of Calamba. Notably, the maintenance of properties emerged as an area that requires attention. The findings suggest that while certain aspects of property management practices and cost measures efficiency are functioning adequately, there are opportunities for enhancement in the areas of maintenance and asset disposal. Specifically, measures should be implemented to streamline maintenance processes, ensuring that properties are adequately cared for and that any necessary repairs or upkeep are conducted promptly. Similarly, strategies should be devised to optimize the disposal of public assets, ensuring that resources are utilized efficiently and that assets are properly managed throughout their lifecycle.

The proposed action plan was entitled: "Strengthening the Property Management Practices and Promoting Cost Efficiency in the City Government of Calamba". The general objectives of the program are to address these areas of concern in the City Government of Calamba, improve its overall property management practices and enhance cost measures efficiency, ultimately leading to more effective and sustainable governance.

Table 11. Proposed action plan for enhancing property management practices in the city government of calamba

Key Result Areas/ Areas of Concern	Indicator with Lowest Scores	Goals/ Objectives	Plans and Programs	Time Frame	Persons Involved	Success Indicators
Maintenance	Minimizes the need for major repairs or replacements to properties.	Improve the maintenance processes for government properties to ensure their optimal condition and longevity.	1. Conduct a comprehensive assessment of properties to identify maintenance needs and prioritize tasks. 2. Develop a maintenance schedule and protocols for regular upkeep and preventive measures. 3. Allocate resources for maintenance activities, including budget, personnel, and tools.	Within 6-12 months	Property Management Department, Facilities Management Team	- Decrease in the number of maintenance-related issues reported. - Increase in property lifespan and functionality.
	Practice recycling, repurposing and sale in the disposal of public asset.	Enhance the efficiency and transparency of the disposal process for public assets that are no longer needed or in use.	1. Review and update the existing policy and procedures for the disposal of public assets. 2. Implement transparent and standardized processes for asset disposal, including documentation and approval mechanisms. 3. Explore opportunities for recycling, repurposing, or sale of assets to maximize value and minimize waste.	Within 6-12 months	Property Management Department, Legal Department, Finance Department	- Reduction in unused or underutilized assets. - Increased revenue generation from asset disposal activities.
Skilled Personnel	Provides incentives to performing and outstanding personnel in property management of the city.	Enhance the skills and capabilities of personnel involved in property management to improve overall efficiency and effectiveness.	1. Conduct a skills assessment of personnel to identify training needs and areas for development. 2. Develop and implement a training program tailored to address identified skill gaps, covering areas such as asset management, regulatory compliance, and technological proficiency. 3. Provide incentives and recognition programs to motivate personnel and encourage continuous improvement.	Within 6-12 months	Human Resources Department, Training and Development Team, Property Management Department	Increase in the level of expertise and proficiency among property management personnel. - Improved employee satisfaction and engagement levels.

4.0 Conclusion

Based on the study's results, a range of conclusions have been drawn. These conclusions provide crucial insights and implications obtained from a meticulous examination of the data, providing a comprehensive grasp of the research subject.

1. That the implementation of property management practices within the City Government of Calamba demonstrates high level of implementation. The City Government of Calamba allocated enough funds to support the property management plan, ensuring compliance with laws and regulatory requirement in acquiring property, effectively utilizes properties procured for its intended purposes, secures adequate budget, personnel and tools for the maintenance and repair of properties and implements transparently the process of disposal of public assets. The offices involved in the implementation of Property Management Practices may undertake targeted interventions to address the identified disparities. There is a need to enhance stakeholder engagements and accountability mechanisms, improve and consider the full life cycle costs of assets during the acquisition process, address challenges related to property location to optimize property utilization, strengthen regular preventive maintenance to help mitigate the occurrence of major repairs and adopting more sustainable disposal method such as recycling and repurposing.

2. That the assessment of efficiency of cost measures in the City Government of Calamba shows a high level of efficiency. The City Government of Calamba ensures adequate financial resources are available to supports operational activities, available technology is utilized and ensures the availability and capacity of skilled personnel for property management practices. These findings underscore the importance to sustained efficiency and effectiveness in governance and service provision. The City Government of Calamba may strengthen the communication and engagement efforts with the stakeholders and investors to enhance the city government

efforts in securing funds, ensuring that they have access to the latest technology, providing comprehensive latest technology training to employees, and addressing the need for more robust incentive mechanism to further boost employee morale and performance. By instituting these recommendations enhances the overall efficiency and effective property management practices, ultimately contributing to better service delivery, communication satisfaction, and benefiting the community.

3. That the heads and employees of the City Government of Calamba generally perceived the implementation and efficiency similarly, indicates a positive organizational culture and harmonious understanding of property management practices and cost control measures within the organization. By maintaining open channels of communication and encouraging collaboration between heads and employees, the organization can leverage diverse perspectives and insights to address challenges and identify opportunities for improvement more effectively.

4. That the good implementation of property management practices had a positive influence to the efficiency of cost measures in the City Government of Calamba. This underscores the importance of strategic resource allocation, technological advancement and human resource management in achieving cost efficiency and effective property management within the organization. The City Government of Calamba may adopt an integrated approach to organizational management. This involves aligning property management strategies with cost measures efficiency to ensure that resources are utilized optimally and in line with organizational objectives. Key stakeholders, including department heads, employees, and property management officers, should collaborate closely to develop and implement integrated management plans that prioritize both effective property management and cost-effectiveness.

5. That the proposed action plan offers a structured framework to tackle significant concerns and attain objectives concerning property management practices and cost measures within the City Government of Calamba is paramount. By delineating specific actions and strategies, this plan aims to address identified challenges effectively and enhance overall performance in property management practices and cost measures efficiency. Systematically implementing this action plan can lead to tangible improvements in organizational operations and outcomes, fostering greater sustainability and success for the City Government of Calamba.

6. Future research in the domain of property management practices implementation and cost measures efficiency within local government contexts should prioritize several key avenues. Longitudinal studies tracking the implementation of property management practices and cost measures efficiency over time could provide valuable insights into their sustainability and effectiveness. Comparative analyses between different local government units can help identify best practices and transferable lessons.

5.0 Contributions of Authors

This paper has a single author and confirms that the author reviewed this study.

6.0 Funding

This paper received no specific grant from any funding agency.

7.0 Conflict of Interests

The author declare no conflicts of interest about the publication of this paper.

8.0 Acknowledgment

The researcher would like to express gratitude to those who contributed to the research such as:

To the Dean of the School of Graduates Studies, Mr. Alfredo G. Perez Jr. for his guidance, encouragement, and words of enlightenment to the researchers during the semester;

To the researcher's panelist, Dr. Ramir Larino, Dr. Ma. Lorena M. Tagala, and Dean Alfredo G. Perez Jr., for their constructive criticism and sharing their expertise for the improvements of the research paper. The researcher would like to express her heartfelt appreciation and recognition to them;

To the experts, Dr. Leonardo F. Oplencia, Sr., Dr. Ramir Larino and Dr. Ma. Lorena M. Tagala for generously gave time to review, validate, and suggest ideas for the improvement of the survey questionnaire;

To research adviser Dr. Marilyn L. Baysa, for all of her wise comments, valuable suggestions, and creative ideas that have helped her improve the quality of her research. She is filled with gratitude for the support and efforts in guiding her from the starting point until the completion of this research;

To the researcher's data analyst, Dr. Eulalia M. Javier for sharing her skills and expertise to validate the reliability of the survey instrument and also for the validation of the data collected;

To the City Government of Calamba management and head of agency, for allowing her to conduct the study. To the department heads and employees of the offices involved in the study, who voluntarily participate to be the respondents of the study, especially to Ms. Editha Malabanan and Marissa Habaña for their guidance and spiritual support.

To the researcher friends and colleagues, Eloisa Masicat, Aubrey Valencia, Grace Macatangay, Ruth Bautista and Accounting Staff for who always advise and reminding the researcher to do the best of her ability.

To the researcher family, especially her parents, Renato Dela Cruz and Lodenia Dela Cruz, her siblings Rostum, Ma, Theresa, and Cliff, her nephews Vergel and Ruscel and nieces Lily, Rosefer, and Kyst for their unwavering love, support and understanding to finish the research study; and

Lastly, and above all, to the Almighty God, for guiding her all through the academic journey and giving her strength to complete this program and finalize this research study.

9.0 References

- Adeyemo, D., Olufemi, A., & Adeniji, A. (2020). Human resource management practices and cost efficiency of local governments in Lagos State, Nigeria. *Heliyon*, 6(5), e03998. Doi: 10.1016/j.heliyon.2020.e03998
- Aigbokhan, B. E., & Ohiare, S. A. (2019). Cost Efficiency in Local Government Administration in Nigeria. *International Journal of Innovative Technology and Exploring Engineering*, 8(8S), 766-770.
- Akinwale, Y. O., Agbebi, F. O., & Awolusi, O. D. (2021). Effect of property management on the financial performance of selected local governments in Oyo State, Nigeria. *Journal of Property Investment & Finance*, 39(1), 68-84.
- Alhassan, R., & Adzawla, W. (2019). Local government financing and budgetary allocation in Ghana. *Public Administration and Policy Research*, 1(1), 1-11.
- Alhassan, I., & Adzawla, W. (2019). The role of technology in promoting efficiency and effectiveness in local government administration. *Journal of Public Affairs*, e2129.
- Aminu, H. A., & Ahmed, A. U. (2019). Property Management and the Cost Efficiency of Local Government Administration in Nigeria. *Journal of Construction Project Management and Innovation*, 9(1), 2314-2329.
- Araral, E., Fritzen, S. A., & Howlett, M. (2019). The politics of cost efficiency in local government: A review of international experiences. *Public Administration Review*, 79(2), 176-189. <https://doi.org/10.1111/puar.12987>
- Aryee, B., Ameyaw, E. E., & Adu-Boahene, C. (2019). Local government property management and its impact on cost efficiency: A case study of Sunyani Municipal Assembly, Ghana. *Journal of Public Administration and Governance*, 9(3), 58-76.
- Aya, M., Buenvinida, L., & Tan, C. (2022). Leadership Practices, Adversity Quotient, And School-Based Management Practices In The New Normal: A Descriptive-Correlational Approach. *International Journal of Theory and Application in Elementary and Secondary School Education*. Vol. 4 No. 2.
- Bañez, J. E. F., & Jandugan, J. P. (2019). Property management practices and cost efficiency of local government units in the Philippines. *Property Management*, 37(5), 681-697.
- Census of Population and Housing (2020). Philippine Statistics Authority.
- Chen, C., & Goh, B. K. (2019). The impact of property management on cost efficiency: Evidence from Singapore. *Journal of Real Estate Portfolio Management*, 25(2), 167-180.
- Costa, R. D., Gonçalves, R. C., & Carvalho, R. L. (2019). The importance of cost management in public organizations: A literature review. *Revista de Gestão*, 26(3), 220-231. <https://doi.org/10.1108/rege-06-2018-0052>
- De Silva, D. G., Rupasingha, T., & Mills, B. F. (2019). Cost efficiency in local government: A frontier analysis approach. *Journal of Public Administration Research and Theory*, 29(2), 225-240.
- Dreyer, J., & Nel, E. (2019). Human resource management in local government: The role of the local government human resource practitioner. *Journal of Public Administration*, 54(2), 236-252.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage Learning.
- Harrison, D. A., Bosse, D. A., & Phillips, R. A. (2020). *Managing for stakeholders: Developing a strategic perspective* (2nd Ed.). Routledge. ISBN: 9780367200895
- Huang, Y., Wang, X., & Huang, L. (2019). The impact of property management practices on cost efficiency in residential properties. *Journal of Cleaner Production*, 233, 395-402.
- Idris, I., Yusuf, R. O., & Mohamad, M. R. (2020). Cost efficiency in local government service delivery: A literature review. *Journal of Public Administration and Governance*, 10(3), 44-53. <https://doi.org/10.5296/jpag.v10i3.16938>
- International City/County Management Association (ICMA, 2021). Local Government Survey in Managing Public Assets. <https://icma.org/2021-local-government-survey>
- International City/County Management Association (ICMA, 2020). Managing local government property: A guide for elected officials and managers. https://icma.org/sites/default/files/302226_Managing_Local_Government_Property_0.pdf
- Khairi, M. F., Hambali, N. A., Yusoff, N., & Kassim, K. (2019). An Overview of Maintenance Management System in Local Government Assets. In *IOP Conference Series: Materials Science and Engineering* (Vol. 551, No. 1, p. 012032). IOP Publishing.
- Koçoğlu, İ., & Atik, A. (2021). An analysis of factors affecting the efficiency of property management in local governments: A case study of Istanbul Metropolitan Municipality. *Land Use Policy*, 106, 105484.
- Li, X., & Wang, J. (2019). The relationship between property management and cost efficiency in the context of commercial real estate. *Journal of Cleaner Production*, 208, 1518-1526.
- Lu, X., & Zhao, X. (2019). Property management practices and cost efficiency in public rental housing: Evidence from China. *International Journal of Housing Markets and Analysis*, 12(2), 226-243.
- Malesky, E. J., Gueorguiev, D., & Jensen, N. M. (2019). Building a more efficient and less corrupt government: The importance of good governance reforms in combating corruption. *Public Administration Review*, 79(1), 13-24.
- Marono, A., & Rossini, F. A. (2019). The public property management in Italy: evolution and challenges. *Land Use Policy*, 86, 108-118.
- National League of Cities (NLC, 2020). Unlocking the potential of public assets: Cities and the new federal tools for economic development.
- Nkansah, A. M., & Osei-Akoto, I. (2019). E-government and local government service delivery in Ghana: efficiency and effectiveness considerations. *Electronic Journal of Information Systems in Developing Countries*, 85(2), e12077.
- Nkansah, G. K., & Osei-Akoto, I. (2019). The relationship between intergovernmental fiscal transfers and local revenue mobilization in Ghana. *Journal of Economic and Financial Sciences*, 12(1), 1-11.
- Obicci, P. A., Mugurusi, G., & Nagitta, P. O. (2021). Establishing the connection between successful disposal of public assets and sustainable public procurement practice. *Sustainable Futures*, 3. <https://doi.org/10.1016/j.sfstr.2021.100049>
- Ochieng, E. G., Akintoye, A., & Renukappa, S. (2020). Green public procurement for construction and demolition waste management: An exploratory study of local government practices in the UK. *Journal of Cleaner Production*, 259, 120961.
- OECD (2019). Organization for Economic Co-operation and Development (2019). The Editor of Encyclopedia Britannica.
- Olanipekun, W. D., Ojebisi, O. A., Adeoye, O. R., & Adeoye, A. O. (2021). Property management and cost efficiency in local government administration: Evidence from Nigeria. *Journal of Public Affairs*, 21(2), e2319.
- Panganiban, C. R., Cusi, B. J. V., Limbo, R. C., & Palad, A. R. (2019). Development of a preventive maintenance system for the University of the Philippines Baguio. *International Journal of Advanced Research in Computer Science*, 10(6), 162-169.
- Piedra-Peña, J. and Breuillé, M. and Le Gallo (2023), Julie, Municipal Efficiency Spillovers in France (January 27, 2023). SSRN Electronic Journal. <https://ssrn.com/abstract=4339423> or <http://dx.doi.org/10.2139/ssrn.4339423>
- Philippine Statistics Authority. (2021). Highlights of the Philippine population 2020 Census of Population and Housing. <https://psa.gov.ph/content/highlights-philippine-population-2020-census-population-and-housing-cph>
- Rahman, M. M., & Khan, M. M. (2020). Cost Efficiency in Local Government: An Empirical Study from Bangladesh. *Journal of Public Affairs*, 20(4), e2122.
- Rambe, P. T., & Rambe, J. K. (2019). The role of human capital in local government service delivery in South Africa. *Journal of Public Affairs*, e2014. doi: 10.1002/pa.2014
- Reiner, M., Sintomer, Y., & Herzberg, C. (2019). Urban governance and land-use policies: A comparison of French and German local authorities. *Journal of Urban Affairs*, 41(4), 450-466.
- Sarpong-Kumankoma, E., & Antwi, V. (2021). Cost efficiency in local government operations: the case of Ghana. *Journal of Public Budgeting, Accounting & Financial Management*, 33(1), 98-118.
- Shi, Y., Wang, D., Li, Y., & Zhu, X. (2021). A Comprehensive Review of Data-Driven Approaches in Property Management. *Sustainability*, 13(6), 3036. <https://doi.org/10.3390/su13063036>
- Simola, H., Kiviniemi, U., & Laine, M. (2019). Cost efficiency in local government service production: A Finnish case study. *Public Management Review*, 21(1), 1-21.
- Singh, R., & Bhardwaj, A. (2020). Management of public properties in urban India: issues and challenges. *International Journal of Urban Sciences*, 24(2), 240-257.
- Tafa, M., & Worku, S. (2022). A Study of Fixed Asset Management Practice and its Challenges with special reference to Public Sector of North Shewa Zone in Oromia Region of Ethiopia. *Change Management: An International Journal*, ISSN: 2327-9176, Volume 22 No. 1, 2022
- Tuan, L. T., & Nguyen, T. K. T. (2019). The effects of community needs, citizen participation, and local government capacity on cost efficiency of local government units. *Journal of Management Accounting Research*, 32(1), 17-31.
- UNDP (2021). Localizing the sustainable development goals: A guide for local governments.
- Yudiarto, Y. (2020). The Effect of Asset Management towards Optimization of Fixed Assets in Pandeglang District. *International Journal of Kybernetology* (Vol. 5, pp. 213-226).

Spoken Discourse Competence of Grade 5 ESL Learners: Inputs to Teaching Speaking

Mark Joseph B. Zapanta

Philippine Normal University, Taft Ave., Manila, Philippines
Pateros Catholic School, Pateros, Metro Manila, Philippines

Author Email: mark.j.zapanta@gmail.com

Date received: May 26, 2024

Date revised: June 25, 2024

Date accepted: July 1, 2024

Originality: 97%

Grammarly Score: 99%

Similarity: 3%

Recommended citation:

Zapanta, M.J. (2024). Spoken discourse competence of grade 5 ESL learners: inputs to teaching speaking. *Journal of Interdisciplinary Perspectives*, 2(8), 291-298. <https://doi.org/10.69569/jip.2024.0235>

Abstract. Proficiency in speaking English significantly enhances professional and academic growth. Through speaking, individuals enrich their vocabulary, practice correct syntax, and develop spoken discourse competence. Consequently, many countries have prioritized English language learning to help students improve their spoken discourse skills. This descriptive study aimed to determine the spoken discourse competence of Grade 5 ESL learners and identify the factors students consider crucial in developing this competence. Additionally, the study sought to provide insights for improving the teaching of speaking skills. The findings reveal that Grade 5 ESL learners exhibit characteristics of developing English speakers, indicating that while they possess competency in spoken discourse, there is still room for improvement. Focus Group Discussions highlighted several factors instrumental in developing spoken discourse competence, including early exposure to the target language, interaction with family, school, and community, communicative situations, confidence in using English, media exposure, and English language instruction. The study recommends strengthening school programs that promote interaction and implementing teacher training programs to integrate media use in interactive lessons, thereby enhancing learners' communicative competence.

Keywords: English as a Second Language; Spoken discourse competence; Teaching of speaking.

1.0 Introduction

Speaking is a key pivotal skill that allows individuals to express themselves and develop their confidence (Namaziandost & Nasri, 2019). Through speaking, individuals acquire or learn vocabulary words and observe and practice correct syntax, leading to their competency in spoken discourse (Malec et al., 2017). In terms of establishing effective communication, English has been recognized as a common language that allows people from different parts of the world to properly communicate without the need for one to know how to speak the native language of the other. This further reinforces the need to develop fluency in the English language for purposes of surviving in the urban context and the global workplace (Mondez, 2013). Developing spoken discourse is a necessary skill that leads to developing communicative competence.

Communicative competence is recognized to have multiple interrelated components that reflect an individual's knowledge and expertise of different linguistic elements such as vocabulary words, syntax, and grammar, as well as a person's ability to use a language in meaningful conversations based on the situation that he/she is in (Celce-Murcia, 2007). Celce-Murica (2007) further explains that it is based on the individual's knowledge and expertise of linguistic elements such as vocabulary, syntax, and grammar (linguistic competence), his ability to appropriately use a language to engage in meaningful communication as dictated by the situation and context (sociolinguistic competence), the ability to use various means and strategies to communicate effectively with other

people (strategic competence), his ability to comprehend and produce significant speech acts and speech act sets (actional competence), and the ability to produce and interpret language beyond the sentence level (discourse competence). This indicates that an individual's competence in spoken discourse results from the continuous interaction of the different competencies.

In the context of spoken discourse, Eghtesadi (2017) reinforces the idea presented by Littlewood (2011), stating that spoken discourse competence enables a person to engage in continuous communication through exchange of ideas with other people, active participation in interactions, and knowing the mechanics of handling conversations. Cummins (1999) discussed that spoken discourse may be in the form of regular everyday interaction with family members and friends (BICS) or specialized and academic interaction with teachers or other professionals (CALP). Thus, how individuals interact through spoken discourse depends on the group of people they are interacting with or the communicative situation they are in (Cruz & Mahboob, 2018).

The development of spoken discourse competence is influenced by multiple factors, various forms of meaningful input (Krashen, 1982) contribute to learning a target language and applying it in spoken discourse. Krashen's principle of comprehensible input maintains that learning a target language occurs when learners are exposed to understandable/comprehensible input. This asserts that the students' understandable input in the target language will affect their ability to use the said language when engaging in discourse (Patrick, 2019). Through their exposure to different sources of meaningful input, students are given opportunities to learn more about the target language (Tuan, 2017). One form of meaningful input is reading. Through reading, learners enrich their vocabulary, which can help facilitate their speaking performance and use of structure in the target language (Akbar, 2014). In a similar vein of thought, Luan and Sappathy (2011) revealed that input and interaction help students learn and retain more vocabulary.

Al-Zoubi (2018) and De Vera and De Vera (2018) further show that various means of exposure to the English language contribute to the development of the four language skills (listening, speaking, reading, and writing). These forms of exposure include direct interaction with Native speakers and listening to English programs and songs thus confirming that exposure to various forms of media can be beneficial as this helps improve the learners' language development in English. Additionally, Abilasha and Ilankumaran (2018), Albahiri and Alhaj (2020), çakır, (2006), Kaewchawee (2013), Namanya (2017), and Villanueva (2019) confirm that media exposure and its integration in teaching English has an effect in the development of the discourse competence of an individual.

Language learning is also considered a factor in developing spoken discourse competence. It should be noted that language learning and development and communicative competence are interconnected (Richards & Rodgers, 2001). Through language learning, individuals can develop mastery and proficiency in a target language by learning vocabulary words, grammar, correct structure, etc., which they then apply when communicating using the target language (Tuan, 2017). De Vera and De Vera (2018) reinforce this by stating that formal instruction influences the development of an individual's communicative competence. Salvador (2020) supports this by explaining that the communicative competence of an individual is influenced by his/her knowledge of grammar rules and patterns.

Another source of input is learners' interaction with other people, which allows them to practice expressing their views, ideas, and opinions using the target language, leading to the development and further improvement of their oral fluency and accuracy when speaking (Namaziandost, 2019). This emphasizes the importance of having authentic, meaningful, and interactive communication for the learners inside the classroom (Jaroszek, 2008). Exposure to a natural language environment is necessary as this allows individuals to become familiar with the basics and nuances of a target language (Savignon, 2017). When language learners are immersed in natural language environments, they acquire how sounds are produced, how certain words are pronounced, and how various expressions are delivered (Kirkpatrick, 2012). Thus, providing relevant speaking activities to the learners would help them use what they have learned when communicating with other people in various social contexts, contributing to developing their discourse competence (Celce-Murcia, 2007; Nguyễn, 2020; Pangket, 2019).

Given the discussions presented, this study highlights the notion that an individual's discourse competence is influenced by multiple factors (Celce-Murcia, 2007). Liu (2015) asserts the idea earlier presented by (Krashen,

1982), which underscores that such factors are further influenced by meaningful input from various sources. This study aims to determine the spoken discourse competence of grade 5 ESL students in using English and determine the factors that influence the development of their spoken discourse competence in English.

2.0 Methodology

2.1 Research Design

This descriptive qualitative study focused on determining the competence of Grade 5 students in using English for spoken discourse. This study also aims to determine the various factors the students consider instrumental in developing their competence. The participants involved are Grade 5 students from Pateros Catholic School.

2.2 Research Participants

The participants involved in this study were selected from sections at the 5th-grade level of Pateros Catholic School. The sections that were part of the class observations were selected through random selection, while purposive selection was used to identify the eight students to be interviewed. The selection of the interviewees is based on how the students participated during the class discussions. It is important to note that the study participants were selected based on the following criteria: a) they must be Grade 5 students currently enrolled in the mentioned school during the study, b) they can use English when engaging in spoken discourse, c) the participants must have access to online learning.

2.3 Research Instrument

The data gathering involved two steps: class observations to determine the spoken discourse competence of the learners involved in the study and Focus Group Discussions to help identify the factors that the participants deemed instrumental in developing their spoken discourse competence. For the class observations, this study adopted the speaking rubric from WIDA, also known as “World-class Instructional Design and Assessment” (wida.wisc.edu), designed to determine the level of competence in terms of speaking. WIDA is an international organization that aims to help advance academic language development and academic achievement for children by providing language development resources for multilingual learners.

The rubric is divided into three major areas: the Word/Phrase level, which reflects the students’ vocabulary knowledge and usage, Sentence level, which is focused on the ability of the students to form grammatical sentences and observe correct language forms. The last area is the Discourse level, which deals with the ability to use the target language to effectively and appropriately express ideas based on the communicative situation the student is in. Each major area is further divided into varying levels, each containing standards per level that correspond to the ability of a learner to engage in spoken discourse. It should be noted the rubrics used by WIDA is used as it is designed for multiple grade levels (Grades 1-12).

2.4 Data Gathering Procedure

The data gathering process is twofold: the first part involved class observations of selected Grade 5 sections, where the participants’ ability to use English in class participation and interaction was monitored and evaluated using a standardized speaking rubric adapted from WIDA, also known as “World-class Instructional Design and Assessment” (<https://wida.wisc.edu>), to help determine the spoken discourse competence of the learners. WIDA is an international organization that aims to help advance academic language development and academic achievement for children by providing language development resources for multilingual learners.

During class observations, notes on meaningful observations were recorded and evaluated based on the rubrics. Participants were observed in terms of their manner of speaking in English, their ability to construct sentences when responding, delivery, the vocabulary and expressions they use, the presence of fillers in their delivery, possible nuances, and whether they shift to using their mother tongue when interacting with their classmates.

The second part made use of Focus Group Discussions from 8 selected learners to help identify the factors that the participants deem instrumental in the development of their spoken discourse competence in English by sharing their experiences.

3.0 Ethical Considerations

As this study involves minors participating in the interviews during these times of the pandemic, the primary concern is to ensure that their safety, wellness, and welfare are considered. To ensure the welfare of the research participants, interviews were conducted using an online platform; this allows for limited physical interaction between the researcher and the participants as the interviewees can participate in the interview while they are at home. Regarding the platform to be used when conducting the interviews, online learning platforms that conform to what the participants use for their online classes were used for the convenience of the participants.

Furthermore, during the conduct of the interview, the questions asked mainly focused on various factors that influenced the students' spoken discourse competence; this includes the various media exposure, interaction with members of the family and the class, as well as the various learning activities that they experienced during their English classes.

Since the target research participants are minors, the approval of the parents or guardians was secured together with the approval of the participants before the interviews were conducted. As part of obtaining consent, parents, guardians, and participants were informed of the nature and objectives of the research to provide them with an idea regarding what is expected of the participants should they agree to participate in the study.

3.0 Results and Discussion

3.1 How ESL Learners Express Themselves in Spoken English

Using the standardized evaluation tool for spoken discourse, the students' competence level in terms of vocabulary usage, language forms, and spoken discourse was determined based on how well they expressed themselves in English in the given aspects. During the class observations, the following observations were made regarding the following indicators:

Table 1. Key observations from class discussions

Indicators	Characteristics Observed
Word/ Phrase level (Vocabulary Usage)	- Students can use words and expressions which are appropriate to their levels. - Students show recognition of words by their subjects. - Shows familiarity and recognition of academic terms/concepts. - Students can use academic concepts/expressions learned when reciting in class discussions.
Sentence level (Language Forms)	- Students know proper sentence patterns. - They can construct grammatical sentences to respond to questions asked by the teacher. - Although the students can respond in complete sentences, the content of the responses tends to be patterned on the concepts that have been discussed.
Discourse level (Linguistic Complexity)	- Uses generic expressions when greeting the teacher in class. - Students are familiar with the correct pronunciation of words and expressions. - Students can apply proper pacing and pausing when asked to read and deliver poetry. - Students show listening comprehension and exhibit analytical thinking as they can understand, interpret, and accurately respond to the questions asked by the teacher. - They can respond in complete sentences yet tend to respond in fragments, phrases, and words. - Capable of asking questions in English. - Students can use basic expressions such as asking permission to go to the restroom. - Students' responses are structured based on the concepts discussed in class, although they can apply the structure to answer other questions in similar contexts.

Based on the standards in the rubrics, it can be stated that Grade 5 student participants who were part of the study show the characteristics of individuals whose spoken discourse competence is that of Level 3 (Developing). Level 3 speakers are characterized as having the ability to use English to make generally comprehensible responses yet still have room for further development. The following standards further determine this: ability to use specific content words, use of appropriate words/expressions, correct usage of vocabulary words based on what is needed, ability to apply sentence patterns and grammatical structures, developing control in the use of oral

language to convey meaning, development of connected language in the expression of ideas, evidence of a developing sense of perspective and register.

Observations reveal that the participants' vocabulary knowledge is appropriate to their grade level, as evidenced by their ability to use appropriate words and expressions. In terms of language forms and construction, while the learners are capable of constructing complete sentences to respond to questions, it has also been observed that the responses of the students to the questions tend to be patterned to the concepts that have been discussed in class, which suggests that the learners can acquire patterns that are taught to them and apply them in sentence construction, strengthening the notion regarding the role of instruction (De Vera & De Vera, 2018) in the development of spoken discourse competence.

Moreover, regarding their ability to use English in spoken discourse, the learners can use routine expressions, which reflect the role of exposure to meaningful input (Krashen, 1982; Tuan, 2017) in their ability to apply learned expressions when interacting inside the classroom. However, it should also be noted that some learners called to recite tend to answer in single words, phrases, or fragments, which might be indicative of the influence of the interaction they have with the community (Cruz & Mahboob, 2018), which may imply that even though the participants show knowledge of the correct sentence patterns and structures and can respond in complete sentences, they would prefer to respond or communicate in a more practical way to be easily understood.

3.2 Factors ESL Learners Find Contribute to their Ability to Speak English

Analysis of the participants' responses through the Focus Group Discussions determined that early exposure to the target language and interaction influence the learners' spoken discourse competence.

KG: Since I was very young, my parents have spoken to me in English as a form of practice.

HC: My parents always taught me to speak English when I was young...

MA: I learned it at a very young age because I was influenced by other people speaking in English.

JC: I am more comfortable using English because it is the first language I have learned.

The participants' responses also hint at their ability to use English and their Mother tongue when conversing with others.

KG: I speak Tagalog at home. In the community, I adjust myself to whatever [language] the person I'm talking to is speaking so we understand each other better.

JA: When talking with friends, sometimes Tagalog, sometimes English

MA: I am more comfortable speaking English but use Tagalog when talking to my friends.

HC: I usually use English more because I have more English-speaking classmates than Tagalog.

Another factor that affects the participants' ability to speak English is their confidence in using English.

KG: I feel confident whenever I am talking to a huge crowd that expects me to speak English to them

MC: I feel confident when reciting or speaking on stage and even when speaking with friends.

Incidentally, the communicative situations also affect their confidence in communicating in English.

MA: When no one is looking at me, I speak English fluently, but when someone is with me, my mind goes blank, and I sometimes forget how to speak English.

MC: Some of my friends, whenever I talk in English, they'd be like, "Wow, foreigner ka? (are you a foreigner?)" They are gonna be like that, so I am hesitant to speak English because of that... I speak English so that they would try to adjust.

KG: Like MC's experience... sometimes kahit sanay po akong mag-English (even though I know how to speak English), it depends on the person I am talking to kase (because) those people they are usually like, "wow, why are you speaking English, nasa Pilipinas tayo (we are in the Philippines)?"

MA: Same with MC. Sometimes, it feels like a compliment; sometimes, it feels like an insult.

Apart from early exposure to the target language, learners' motivation to learn English is also a factor they deemed instrumental in developing their ability to speak English. This motivation may result from a need to have a means to communicate.

AL: I prefer to speak English more because I can express my expressions and feelings more.

KG: I feel confident whenever I am talking to a huge crowd that expects me to speak English to them

This motivation may result from the need for self-improvement in communication skills.

JA: I believe speaking English can make me become a better person.

KG: I realized that learning English could help me communicate better with people.

Media is also recognized as a factor that helps learners learn English.

JA: I learned English because of Cartoons or movies. There was no reason for me to learn English; I just wanted to.

AL: I learned to speak English very young by watching cartoons and speaking to relatives and friends.

SD: I like English movies because I find them understandable.

SE: I did not improve it. I guess I just learned it from something... I guess it is just from the movies I watch, the animes I watch, the videos I watch... I guess I learned something from that.

The role of instruction is also recognized; this may be in formal classroom instruction or instruction from parents or other community members.

HC: My parents always taught me to speak English when I was young, and my mother enrolled me in Kumon at three years old.

MA: I was inspired by my teachers because English is the language of the world.

MA: Most of the subjects are based on English; sometimes, when I mispronounce words, the teachers help me pronounce them correctly.

The answers of the participants who have shared that they have been exposed to communicative situations that entail them to interact or communicate with other people using English confirm that the interaction learners have with people who speak English is essential as the learners get to use English in practical conversations while also learning from the other person they are communicating with (Eisenring, 2017).

The responses of the participants further reflect their early exposure to both English and MT since the participants can use both languages when interacting with members of the family at home; the same can be said when it comes to interacting with other members of the community, such as friends, neighbors, other relatives, teachers, and classmates. Throughout the sharing and discussions, it was established that the environment or community affects how they learn and communicate in English, further reinforcing the premise that an individual's discourse competence is influenced by multiple factors (Celce-Murcia, 2007). Since the students are exposed to environments that use English and MT to communicate, they can also conform to these structures when communicating with others (Malec, 2017). Moreover, the answers of the participants also align with Al-Zoubi's (2018) statement, which emphasises the benefits of media exposure to the learner's language development as well as the studies of Albahiri and Alhaj (2020), and çakır (2006), which focus on the effect of media exposure on the development of an individual's discourse competence.

Another factor contributing to the development of spoken discourse competence in English of the participants is the motivation of the learner to learn the target language and apply it in spoken discourse (Al Hosni, 2014), as reflected by the participants' answers. Motivation to learn a target language and use it in communication may be due to the learner's need for a means to effectively express himself/herself or for purposes of self-improvement in terms of communication skills reflecting their attitude towards the target language further supporting the premise that motivation is necessary to become familiar with the concepts, patterns, vocabulary words and expressions needed, and opportunity to apply these concepts when interacting to have fluency and accuracy in the language used (Namaziandost, 2019).

Lastly, the participants' answers also highlight the role of language instruction. Through language instruction, the students are given the chance to actively learn vocabulary words, expressions, and patterns that they can use when they communicate in English (Salvador, 2020; Tuan, 2017).

4.0 Conclusion

This research was conducted to determine the spoken discourse competence of Grade 5 ESL learners and recognize the various factors deemed instrumental in the development of their competence in spoken discourse. It follows the idea presented by Celce-Murcia (2007), which states that multiple factors influence the ability of individuals to use English for spoken discourse.

Based on the study's results, class observations reveal that the students can effectively use English for spoken discourse when interacting inside the classroom, particularly during class discussions. Based on the standards in the evaluation tool taken from the WIDA consortium, the participants exhibit characteristics of Level 3 or developing speakers. Developing English speakers shows the ability to make generally comprehensible responses, though they still have room for further improvement.

Regarding the factors the participants consider contributory in their ability to speak English, focus group discussions with selected Grade 5 students affirm the statement of Celce-Murcia (2007), which states that multiple factors influence the ability of individuals to use English for spoken discourse. Early exposure to the target language and interaction with different community members they are a part of (Eisenring, 2017) contribute to how the students learn or acquire the target language and apply it through basic interaction. Also, different communicative situations help speakers adapt and conform to what is needed for meaningful interaction (Malec, 2017). It is also important to recognize the individual's motivation to learn the target language (Al Hosni, 2014) and his confidence in using English in spoken discourse.

Exposure to media (Albahiri & Alhaj, 2020; Al-Zoubi, 2018; çakır, 2006), whether at home or in other settings, also helps with learning and acquiring a target language. Lastly, language instruction, as well as interaction with the teacher inside the classroom (Richards & Rodgers, 2001; Tuan, 2017; Salvador, 2020), further reinforce the skills of the students in a way that they can learn vocabulary words, expressions, and patterns, which they use when communicating in English.

The study revealed that the communicative situation, where they interact with other people, contributes to developing their spoken discourse competence. With this, it is recommended that school administrators implement policies and promote practices that would help reinforce the continuity of using English not only inside the classroom but also outside to help strengthen their spoken discourse competence as they are given more opportunities to learn English through meaningful input and apply them in different communicative situations that require the use of English in authentic interactions.

In line with the findings that indicate the role of the teachers inside the classroom, it is recommended that teacher training programs that would help reinforce the skills needed to develop spoken discourse competence in English since the interactions that the students have with the teachers and other school personnel also contribute to their ability to use English in spoken discourse.

As it was reflected that interaction and exposure to other forms of input (media and instruction) help in the development of spoken discourse, these findings may be used as a basis for improvement regarding designing activities and learning strategies that would allow for full and effective utilization of both MT and English to ensure that competency in both languages is developed well. Thus, this study recommends the further integration of media into different learning activities and teaching strategies designed by English language teachers to help motivate the participants to become more active in class discussions and help promote active interaction amongst the members of the class, further reinforcing exposure to situations and meaningful input in the target language allowing them to become more active communicators in the target language.

While it was determined that the participants know, understand, and have been exposed to their MT, the interview results provide little evidence of the role of MT in their ability to speak English. In line with this, it is recommended

that research be conducted focused on the perspectives of learners regarding the role of MT use in their ability to communicate in English.

5.0 Contributions of Authors

All parts of the research paper, from searching related literature to writing the initial parts, data gathering, analysis, interpretation, discussion of results, etc., are done by the researcher himself, with support and guidance from his thesis adviser and recommendations from his research panelists.

6.0 Funding

As this research is part of the requirements for the completion of the researcher's Master's Degree program, no external party or sponsors have been involved in the conduct of this study. The researcher himself shouldered all expenses incurred during the process of writing the paper.

7.0 Conflict of Interests

The author reports that there are no competing interests to declare in this research.

8.0 Acknowledgment

The researcher would like to express his deepest gratitude to his thesis adviser, Dr. Florencia F. Marquez, a faculty member of the Philippine Normal University, who has been very patient and supportive throughout the process of writing, revising, and presenting this paper. Many thanks are also given to the Research Panelists headed by Dr. Wilfredo Chung, and the panel members, Dr. Cecilia Genuino, Dr. Arceli Amarles, and Dr. Heidi Macahilig, all from the Philippine Normal University, who were very understanding and patient when it came to giving meaningful recommendations and suggestions for the improvement of this paper.

9.0 References

- Albahiri, M. H., & Alhaj, A. A. M. (2020). Role of visual element in spoken English discourse: Implications for YouTube technology in EFL classrooms. *The Electronic Library*, 38(3), 531–544. <https://doi.org/10.1108/EL-07-2019-0172>
- Al Hosni, S. (2014). <https://opinion.inquirer.net/61025/castrated-mtb-mle>. *International Journal on Studies in English Language and Literature (IJSELL)*, 2(6), 22–30.
- Al-Zoubi, S. (2018). The impact of exposure to English language to language acquisition. *Journal of Applied Linguistics and Language Research*, 5(4), 151–162.
- çakır, I. (2006). The use of video as an audio-visual material in foreign language teaching classroom. *Turkish Online Journal of Educational Technology*, 5, 62–72.
- Celce-Murcia, M. (2007). Rethinking the role of communicative competence in language teaching. In E. A. Soler & M. P. S. Jordà (Eds.), *Intercultural language use and language learning* (pp. 41–57). Springer Netherlands. https://doi.org/10.1007/978-1-4020-5639-0_3
- Cruz, P. A. T., & Mahboob, A. (2018). Mother-tongue-based multilingual education in the Philippines. In J. Choi & S. Ollerhead (Eds.), *Plurilingualism in teaching and learning* (1st ed., pp. 37–53). Routledge. <https://doi.org/10.4324/9781315392462-3>
- Cummins, J. (1999). *BICS and CALP: Clarifying the distinction*. University of Toronto.
- De Vera, J., & De Vera, Presley. (2018). Oral communication skills in English among grade 11 humanities and social sciences (HUMSS) students. *The Asian ESP Journal*, 14(5), 30–52.
- Eghetesadi, A. R. (2017). Models of communicative competence: Implications of language teachers and teacher educators. *ROSHD FLT*, 31, 28–40.
- Eisenring, Moh. A. A. (2017). The importance of teacher–student interaction in communicative language teaching (CLT). *Prasasti: Journal of Linguistics*, 4(1), 46–54.
- Jaroszek, M. (2008). Factors determining the development of discourse competence in advanced learners of English. Katowice: University of Silesia. <http://hdl.handle.net/20.500.12128/5207>
- Kaewchawee, P. (2013). The effectiveness of multimedia-based instruction in developing the sixth-grade students' English ability. http://ir.swu.ac.th/xmlui/bitstream/handle/123456789/4114/Pudsadee_K.pdf?sequence=2
- Kirkpatrick, A. (2012). English as an Asian lingua franca: The 'lingua franca approach' and implications for language education policy. *Jelf*, 1(1), 121–139. <https://doi.org/10.1515/jelf-2012-0006>
- Krashen, S. (1982). *Principles and practice in second language acquisition*. Oxford: Pergamon Press.
- Littlewood, W. (2011). Communicative language teaching: An expanding concept for a changing world. In *Handbook of research in second language teaching and learning: Volume II* (Vol. 2, pp. 541–557). UK: Routledge.
- Liu, D. (2015). A critical review of Krashen's input hypothesis: Three major arguments. *Journal of Education and Human Development*, 4(4), 139–146.
- Luan, N. L., & Sappathy, S. M. (2011). L2 vocabulary acquisition: The impact of negotiated interaction. *GEMA Online Journal of Language Studies*, 11(2), 5–20.
- Malec, A., Peterson, S. S., & Elshereif, H. (2017). Assessing young children's oral language: Recommendations for classroom practice and policy. *Canadian Journal of Education*, 40(3), 362–392.
- Martin, I. P. (2015). English in mother tongue-based multilingual education in the Philippines. *English for ASEAN Integration: Policies and Practices in the Region*, 110–119.
- Meriem, M. (2015). The role of audio-visual aids in enhancing EFL students' speaking skill: Case study first year LMD students of English at Biskra University. Mohamed Kheider University of Biskra. <http://archives.univ-biskra.dz/bitstream/123456789/5830/1/Mizab%20Meriem.pdf>
- Namanya, S. J. (2017). The effects of mother tongue-based multilingual education on the English literacy of children in Silang, Philippines. *International Forum Journal*, 20(2), 160–177.
- Namaziandost, E., & Nasri, M. (2019). A meticulous look at Long's (1981) interaction hypothesis: Does it have any effect on speaking skill? *Journal of Applied Linguistics and Language Research*, 6(2), 218–230.
- Nguyễn, T. T. (2020). Factors affecting speaking skills in English of children.
- Pangket, W. (2019). Oral English proficiency: Factors affecting the learners' development. *International Journal of Science and Management Studies*, 2(2), 88–98.
- Patrick, R. (2019). Comprehensible input and Krashen's theory. *Journal of Classics Teaching*, 20(39), 37–44. <https://doi.org/10.1017/S2058631019000060>
- Richards, J. C., & Rodgers, T. S. (2001). *Approaches and methods in language teaching* (2nd ed.). Cambridge University Press. <https://doi.org/10.1017/CBO9780511667305>
- Salvador, R. (2020). Linguistic and discourse competence of senior high school students: Basis for re-medial program in English. *Universe International Journal of Interdisciplinary Research*, 1(2), 182–189.
- Savignon, S. J. (2017). Communicative competence. In J. I. Lontas (Ed.), *The TESOL encyclopedia of English language teaching* (1st ed., pp. 1–7). Wiley. <https://doi.org/10.1002/9781118784235.eelt0047>
- Tuan, V. V. (2017). Communicative competence of the fourth year students: Basis for proposed English language program. *English Language Teaching*, 10(7), 104. <https://doi.org/10.5539/elt.v10n7p104>
- Villanueva, I. M. (2019). Effects of audio-visual materials on oral discourse competence of grade five pupils. *International Journal of Engineering Science and Computing*, 9(4).

Implementing Machinery Distribution Program on Sustainable Agriculture and Rural Development: Basis for Action Plan

Deo G. Rivera*, Joy P. Flores

Saint Louis College, San Fernando, La Union, Philippines

*Corresponding Author Email: deogriversa@gmail.com

Date received: June 5, 2024

Date revised: June 26, 2024

Date accepted: July 1, 2024

Originality: 87%

Grammarly Score: 99%

Similarity: 13%

Recommended citation:

Rivera, D., Flores, J. (2024). Implementing machinery distribution program on sustainable agriculture and rural development: basis for action plan. *Journal of Interdisciplinary Perspectives*, 2(8), 299-309.
<https://doi.org/10.69569/jip.2024.0263>

Abstract. This study utilized a descriptive correlation research design to assess the level of implementation of the Machinery Distribution Program by the Department of Agriculture Regional Field Office I (DA RFO I) in La Union. It also investigated the challenges encountered during the program's implementation. The respondents included LGU municipal agriculturists, banner program coordinators, and the Chairman/President of the Farmer Cooperative Association, with a total of 60 participants. Data were collected using a researcher-made survey questionnaire and analyzed using frequency counts, percentages, weighted means, and Pearson correlation. The analysis indicated that most beneficiary associations are well-established, operating for over a decade with more than 100 members, typically in lowland areas, and properly registered with government agencies. The program was found to be fully implemented. However, there was no significant relationship between the profile variables and the program's implementation level. Several challenges were identified, including limited farm sizes, inappropriate or missing equipment, uneven allocation favoring certain associations, inaccessible roads for machinery delivery, and a mismatch between provided machines and the layout of farmlands. The study concluded that while the program was fully implemented, addressing these challenges could improve farming conditions for the farmers and associations. An Action Plan was recommended to address the identified problems in the Machinery Distribution Program's implementation.

Keywords: Machinery distribution; Sustainable agriculture; Rural development.

1.0 Introduction

Agriculture is a cornerstone of global well-being, serving as the primary source of sustenance and playing a vital role in economic development. Beyond its fundamental function of providing the world's food supply, agriculture significantly contributes to economic growth and employment. It engages millions in farming and related industries, catalyzing income generation and poverty alleviation, particularly in developing countries. Sustainable agricultural practices contribute to environmental preservation, biodiversity, and climate change mitigation. Furthermore, agriculture holds immense social and cultural significance, reflecting heritage, fostering social cohesion, and supporting resilient communities (FAO, 2021).

A current trend in agriculture is the adoption of farm machinery, which has transformed the sector by substituting manual labor. This mechanization is crucial for sustaining agricultural production in many developing countries. Agricultural mechanization, particularly machinery use, offers farmers opportunities to maintain or increase production despite ongoing migration trends (Zhang et al., 2020). Several studies have shown the positive effects

of using farm machinery, such as tractors and harvesters, on agricultural production. For example, Wang et al. (2022) found that farm machinery supports agricultural intensification and conservation, and Benin (2021) noted significant yield increases in Ghana.

Countries like China have heavily invested in agricultural mechanization. Wang (2019) revealed that China has been providing farmers with machinery to boost agricultural production. In India, agricultural workers operate a variety of equipment to perform farm operations efficiently. However, small and marginal farmers often cannot afford these technologies and resort to renting machinery, which can be expensive (Kamboj, 2012). Similarly, Turkish farmers face difficulties replacing machinery due to high costs, prompting the government to implement machinery-sharing programs to reduce expenses and increase production (Basarik, 2015).

In the Philippines, the Department of Agriculture (DA) envisions a modernized and diversified rural economy that is technologically advanced and resource-sustainable. The DA has been distributing modern post-harvest machinery to achieve this vision. However, the country's fragmented agricultural economy and inefficiencies in the distribution system pose significant challenges. The effectiveness of the DA Regional Office I (DA RFO I) machinery distribution program is crucial for sustainable agriculture and rural development, although low mechanization levels persist due to small landholdings, high machinery costs, and unfavorable policies (Palanca-Tan & Gio, 2021; Philippine Center for Postharvest Development and Mechanization, 2021).

The DA RFO I machinery program has distributed 182 farm machinery valued at PhP 107 million in 2022. There is a need for research to evaluate its impact on agricultural productivity, incomes, employment, and the environment. This evaluation will inform policy recommendations to enhance the program's effectiveness, aligning it with broader sustainable agriculture and rural development goals in Region I (DA RFO I Annual Report, 2022). Assessing the program involves examining distribution, maintenance, and beneficiaries to ensure the machinery provided meets the needs of farmer associations and supports overall agricultural productivity (DA Regional Field Office I, 2022).

This study aimed to assess the implementation of the DA RFO I machinery distribution program in promoting sustainable agriculture and rural development in the Ilocos Region as a basis for formulating an action plan to improve the level of implementation of the DA RFO I program. This study provides crucial baseline data for enhancing the Machinery Distribution Program through a well-formulated action plan. The findings offer significant benefits: The Department of Agriculture can leverage insights to refine strategic decisions, optimize resource allocation, and improve program efficacy. Program implementers gain a detailed evaluation of successes and challenges, enabling them to refine strategies and streamline processes. Local Government Units are equipped with the knowledge to tailor support mechanisms and align regional development plans with agricultural needs. Farmers receive insights to optimize machinery use, enhancing productivity and well-being. The Master in Public Administration program benefits from a practical case study, enriching academic and professional development. The study enhances the researcher's analytical skills and provides a deeper understanding of the impact of government programs. Future researchers can build on this study, addressing gaps and driving continuous improvement in agricultural programs and policies.

2.0 Methodology

2.1 Research Design

This study employed a descriptive-correlational research design to explore the relationship between the machinery distribution program's implementation level and the respondents' various profile characteristics. As per Siedlecki (2020), correlational research determines the tendency for variables to vary consistently. This approach allowed the researcher to identify any significant associations between the program's effectiveness and demographic or organizational factors such as age, work experience, position, sex, civil status, educational attainment, number of members, length of association's existence, number of accreditations, production area, and registration status.

2.2 Sources of Data

The study was conducted in the Department of Agriculture Regional Office 1 (DA RO 1) in La Union, involving personnel responsible for implementing the machinery distribution program. The respondents included LGU

municipal agriculturists, banner program coordinators, and the Chairmen/Presidents of the Farmer Cooperative Association. Their roles provided valuable insights into the challenges and successes associated with machinery distribution and utilization. The study involved 60 respondents, with 40 from local government units and 20 from farmer associations, ensuring comprehensive data collection from key stakeholders.

2.3 Instrumentation and Data Collection

The survey instrument was developed based on a comprehensive literature review, divided into three parts: respondent profiles, implementation level of the machinery distribution program, and problems encountered. Part I gathered demographic and organizational characteristics, Part II assessed program implementation using a 3-point Likert scale, and Part III identified specific challenges faced during implementation. The data collection process involved securing permissions, coordinating with local government units, and using both face-to-face and digital survey methods to maximize participation.

2.4 Validity and Reliability of Research Instrument

The questionnaire underwent rigorous validation and reliability testing. Internal and external validators reviewed the questionnaire, resulting in a high validity score (mean value of 4.89). Reliability was assessed using Cronbach's alpha coefficient, achieving a value of 0.87, indicating high internal consistency. This robust testing ensured the questionnaire's ability to produce consistent and dependable results, enhancing the study's credibility.

2.5 Tools for Data Analysis

Various statistical tools were employed to analyze the collected data. Frequency counts and percentages provided a descriptive overview of respondent demographics. Mean scores assessed the program's implementation level. The correlational analysis explored relationships between profile variables and program implementation using Pearson and Point-Biserial correlations, analyzed through JAMOV software. This comprehensive approach facilitated a robust interpretation of the data, revealing significant associations and patterns.

2.6 Ethical Considerations

The study adhered to strict ethical guidelines, including securing permissions, obtaining informed consent, ensuring respondent confidentiality, and treating participants fairly. Respondents were informed about the study's nature and their right to withdraw at any time, and their anonymity was preserved through pseudonyms. Data was kept confidential, and tools like Grammarly and Turnitin were used to ensure the study's authenticity and originality, maintaining high ethical standards throughout the research process.

3.0 Findings and Discussion

3.1 Demographic Profile of Farmer Associations

This chapter section presents the demographic profile of the farmer associations, municipal agriculturists, and banner program coordinators. The demographic profile of the farmer associations includes the number of members, length of the association's existence, production area, registration, and accreditation. On the other hand, the demographic profile of the municipal agriculturists and banner program coordinators includes position, age, sex, civil status, work experience, and educational attainment.

Demographic Profile of the Members of the Farmer Associations

Table 1 provides the demographic profile of the Farmer Association involved in the study. It offers insights into various aspects such as the number of members, length of the association's existence, production area, registration, and accreditation. Regarding the number of members, most associations have more than 100 members, constituting 70.59% of the total associations surveyed. Regarding the length of the association's existence, the highest proportion falls within the category of 13–15 years, accounting for 47.06% of the total associations. When considering the production area, a significant majority of associations operate in lowland areas (70.59%), followed by those in irrigated lowland (29.41%) and rainfed lowland (17.65%) areas. Some associations operate in multiple production areas, such as lowland and upland or irrigated and rainfed lowland. Regarding registration, most associations are registered with the Securities and Exchange Commission (SEC), comprising 82.35% of the total. Meanwhile, regarding accreditation, the Department of Agriculture is the most common accrediting body, with 17.65% of associations accredited by the department. Additionally, several associations are accredited by a combination of the Department of Agriculture, local government units, and other entities.

Table 1. Demographic profile of the farmer associations

	Frequency	Percentage
Number of Members		
1-30	0	0.00%
31-60	2	11.76%
61-80	2	11.76%
81-100	1	5.88%
More than 100	12	70.59%
Length of the Association's existence		
1-3 years	0	0.00%
4-6 years	4	23.53%
7-9 years	4	23.53%
10-12 years	1	5.88%
13-15 years	8	47.06%
Production Area		
Lowland	12	70.59%
Irrigated Lowland	5	
Rainfed Lowland	3	
Irrigated and rainfed Lowland	4	
Upland Rainfed	1	5.88%
Lowland and Upland	3	17.65%
No answer	1	5.88%
Registration		
Securities and Exchange Commission (SEC)	14	82.35%
Cooperative Development Authority (CDA)	3	17.65%
Accreditation		
Department of Agriculture	3	17.65%
Local Government Unit	1	5.88%
Others	0	0.00%
Department of Agriculture and Local Government Unit	8	23.53%
Department of Agriculture, Local Government Unit and others	4	11.76%
No Answer	1	2.94%

Table 2. Demographic profile of the municipal agriculturists/ municipal agriculturists coordinators

Variable	Frequency	Percentage
Position		
Municipal Agriculturists	13	43.33%
Banner Program Coordinator (Rice)	12	40.00%
Banner Program Coordinator (Corn)	2	6.67%
Banner Program Coordinator (High-Value Commercial Crops)	1	3.33%
Banner Program Coordinator (Livestock)	1	3.33%
Banner Program Coordinator (Organic Agriculture)	1	3.33%
Age		
26 to 33	7	23.33%
34 to 41	9	30.00%
42 to 49	3	10.00%
50 to 57	9	30.00%
58 to 65	2	6.67%
Sex		
Male	12	40.00%
Female	18	60.00%
Civil Status		
Single	7	23.33%
Married	21	70.00%
Widow	2	6.67%
Separated	0	0.00%
Years in Service		
1 to 3 years	8	26.67%
4 to 6 years	2	6.67%
6 to 8 years	3	10.00%
9 to 10 years	0	0.00%
Above 10 years	17	56.67%
Educational Attainment		
Associate's Degree in Agriculture or related field	0	0.00%
Bachelor's Degree in Agriculture or related field	18	60.00%
Master's Degree in Agriculture or related field	1	3.33%
Doctorate Degree in Agriculture or related field	11	36.67%

Demographic Profile of Municipal Agriculturists / Banner Program Coordinators

Table 2 presents the demographic profile of the Municipal Agriculturists and Municipal Agriculturist Coordinators participating in the study. It encompasses various variables such as position, age, sex, civil status, years in service, and educational attainment. Most respondents hold the position of Municipal Agriculturists (43.33%), followed closely by Banner Program Coordinators for Rice (40.00%). Other positions include Banner Program Coordinators for corn, high-value commercial crops, livestock, and organic agriculture. Regarding age, respondents span a wide range of age groups, with the highest proportions falling within the 34 to 41 years and 50 to 57 years brackets, each comprising 30.00% of the total. Most respondents are female (60.00%), reflecting a relatively balanced gender distribution within the group. In terms of civil status, the majority of respondents are married (70.00%), followed by those who are single (23.33%) and widowed (6.67%). None of the respondents indicated being separated.

3.2 Level of Implementation of the Machinery Distribution Program

In terms of Machinery Distribution

Table 3. Descriptive statistics of the level of implementation of the machinery distribution program interms of machinery distribution

Indicators	Farmer Association	MA and BPA	Mean	Interpretation
1. The program meets its objective, which is to distribute the following machinery:	2.94		2.94	FI
a. Rice Combine Harvester	3.00		3.00	FI
b. Recirculating Dryers	3.00		3.00	FI
c. Four-wheel drive Tractors	2.92		2.92	FI
d. Hand Tractors (Kuliglig)	2.75		2.75	FI
2. The program maximizes the utilization of its budget to distribute machinery.		2.73	2.73	FI
3. The program identifies the needs of the farmers regarding machinery.	2.69	2.83	2.76	FI
4. The program can distribute machinery to its intended beneficiaries.		2.90	2.90	FI
5. The program is being monitored and evaluated to assess its effectiveness and identify areas for improvement.	2.88	2.63	2.76	FI
6. The program implements mechanisms to ensure its continuity and sustainability	2.94	2.77	2.86	FI
7. The program is being monitored and evaluated to assess its effectiveness and identify areas for improvement. G2		2.63	2.63	FI
8. The program adheres to standards set by the implementing rules and regulations.	2.94	2.87	2.91	FI
Overall Mean	2.90	2.77	2.85	FI

Note: 1 to 1.67 = Not Implemented (NI); 1.68 to 2.34 = Partially Implemented (PI); 2.35 to 3.00 = Fully Implemented (FI); MA (Municipal Agriculturist), BPA (Banner Program Coordinator)

Table 3 shows that the machinery distribution program has been fully implemented with an overall mean score of 2.85, indicating the achievement of its objectives. The program's effectiveness in providing essential agricultural machinery, such as rice combine harvesters and tractors, supports sustainable agriculture and rural development. This full implementation status highlights the program's adherence to established standards and regulations, enhancing its credibility and ensuring proper governance.

The study's findings align with those of Amongo et al. (2018), who found high mechanization levels in agricultural operations due to the availability of various types of machinery. The highest mean score of 2.91 was adherence to standards set by implementing rules, reflecting strong compliance and governance within the program. Adherence to standards is crucial for accountability, transparency, and promoting stakeholder trust, as well as improving program outcomes and sustainability.

However, Briones (2021) points out that strict regulatory adherence can sometimes hinder innovation and adaptive management, suggesting a need for balance between compliance and flexibility. Despite this, the program's commitment to monitoring and evaluation, with a mean score of 2.76, underscores its dedication to continuous improvement. Regular monitoring and evaluation help track progress, identify challenges, and make informed decisions, essential for the program's long-term success.

The study further notes that farmer associations (Group 1) showed slightly higher effectiveness (mean score of 2.90) compared to municipal agriculturists and banner program coordinators (Group 2), with a mean score of 2.77. This discrepancy could be due to farmer associations' hands-on experience and direct engagement with agricultural activities, leading to better resource allocation and maintenance practices. Group 2's lower scores may result from bureaucratic constraints and less direct involvement in farming.

Zhang et al. (2023) found that farmer-led initiatives typically outperform government-led programs in resource allocation and program management due to their deeper understanding of local contexts and participatory decision-making processes. Conversely, the FFTC (2018) study highlights systemic issues within government agencies, such as bureaucratic red tape and limited resources, which can impede the effectiveness of programs like those in Group 2. These challenges can delay decision-making and reduce responsiveness to farmer needs, impacting overall program effectiveness.

In terms of Machinery Maintenance

Table 4. Descriptive statistics of the level of implementation of the machinery distribution program in terms of machinery maintenance

Indicators	Farmer Association	MA and BPA	Mean	Interpretation
1. The machines are well maintained to ensure functionality	2.94	2.57	2.76	FI
2. A budget is allotted by the association for the maintenance of the machines.	3.00	2.63	2.82	FI
3. The farmers use the machinery with utmost care.	2.88	2.67	2.78	FI
4. The farmers notify the department when the machines malfunction.	2.59	2.47	2.53	FI
5. The department conducts a machine audit each year.	2.71	2.70	2.71	FI
6. The machines are well kept after use to avoid damage.	2.88	2.73	2.81	FI
Overall Mean	2.83	2.63	2.73	FI

Table 4 shows the machinery distribution program's maintenance practices are fully implemented, with an overall mean score of 2.73. This indicates the program's effectiveness in maintaining machinery to ensure their functionality and longevity, contributing positively to agricultural productivity and sustainable rural development. The highest mean score (2.82) was for budget allocation for maintenance, demonstrating the program's strategic approach to financial management and resource allocation, crucial for minimizing downtime and maximizing machinery productivity.

The study aligns with Huo et al. (2022), who found that effective maintenance practices, such as timely repairs and routine inspections, significantly extend machinery lifespan and enhance productivity. Conversely, Abirami (2023) highlights challenges like inadequate training and limited access to spare parts that can hinder maintenance effectiveness. Despite these challenges, the program's systematic budget allocation for maintenance underscores its commitment to preserving machinery functionality. The lowest mean score (2.53) was for farmers notifying the department of malfunctions, yet this is still considered fully implemented. This suggests that while there may be inconsistencies in reporting, the program has established functional communication channels for addressing machinery issues. Prichard (2023) found that effective communication mechanisms enhance program responsiveness and farmer satisfaction, although Mwangwela & Duvel (2006) identified barriers such as limited communication infrastructure and cultural norms that can affect reporting efficiency.

Farmer associations (Group 1) scored higher (2.83) in maintenance effectiveness compared to municipal agriculturists and banner program coordinators (Group 2) with a score of 2.63. The higher effectiveness of Group 1 can be attributed to their direct involvement and familiarity with machinery management, as supported by Syahyuti et al. (2021). However, Daum & Birner (2017) noted challenges such as limited technical expertise and coordination issues, which can affect both groups' maintenance efforts despite their roles and resources.

In terms of Beneficiary

Table 5 shows the machinery distribution program's implementation level, with an overall mean score of 2.89, indicating it is fully implemented. This suggests the program effectively meets beneficiary needs, providing appropriate machinery to support agricultural activities. It ensures transparent and accountable processes by including beneficiary associations in the distribution, enhancing their productivity and efficiency. This finding

aligns with Mokgomo et al. (2022), which highlighted the importance of aligning machinery provision with beneficiary needs and promoting transparency in distribution processes.

Table 5. Descriptive statistics of the level of implementation of the machinery distribution program along with beneficiary

Indicators	Mean	Interpretation
The association is well-identified as a beneficiary of the program.	3.00	FI
The machinery that is provided suits the farm needs of the association.	2.90	FI
The association receives the machineries that are requested.	2.77	FI
Overall Mean	2.89	FI

However, Loon et al. (2020) identified challenges in accessing and utilizing distributed machinery, such as inadequate training and maintenance support. These challenges suggest potential gaps in the program's ability to comprehensively address beneficiary requirements. Despite these issues, the program's high mean score for budget allocation and clear beneficiary identification demonstrates its commitment to transparency and accountability, as highlighted by Ballesteros et al. (2017).

The highest mean score of 3.00 was for the clear identification of beneficiary associations, underscoring the program's excellence in transparency and accountability. This clarity fosters trust, allows effective monitoring, and ensures that support reaches the intended beneficiaries. Ballesteros et al. (2017) found that programs excelling in transparent beneficiary identification enhance trust and credibility among stakeholders, promoting equitable access to program benefits.

The lowest mean score of 2.77 was for associations receiving requested machinery, though still fully implemented. This suggests that while there are occasional delays or discrepancies, the program generally meets machinery requests, contributing to agricultural activities. Peng et al. (2022) noted similar challenges in machinery distribution programs, emphasizing the need for ongoing monitoring to improve efficiency and beneficiary satisfaction.

3.3 Relationship Between the Level of Implementation and Profile of the Respondents

Table 6. Correlational analysis for the relationship between the level of implementation and profile of the respondents

Profile Variables	r	Strength and Direction	P-value	Decision	Remark
Age	-0.293	Weak Negative	0.116	Do not Reject Ho	Not Significant
Work Experience	-0.189	Weak Negative	0.317	Do not Reject Ho	Not Significant
Position	0.252	Weak Negative	0.180	Do not Reject Ho	Not Significant
Sex	-0.268	Weak Positive	0.153	Do not Reject Ho	Not Significant
Civil Status	-0.143	Weak Negative	0.453	Do not Reject Ho	Not Significant
Educational Attainment	0.085	Weak Positive	0.654	Do not Reject Ho	Not Significant

Note: Significant at alpha = 0.05

Table 6 presents the correlation between the implementation level of the machinery distribution program and the respondents' profiles. The results show that demographic factors like age, work experience, position, sex, civil status, and educational attainment have weak correlations with the program's implementation, none of which are statistically significant. For instance, while older respondents and those with more work experience show a slight decrease in implementation levels, and females show a slight increase, these variations are not substantial enough to be statistically meaningful.

Age shows a weak negative correlation (-0.293) with implementation levels, indicating a slight decline as age increases, though this is not statistically significant. Similarly, work experience has a weak negative correlation (-0.189), suggesting a minor decrease in implementation level with more experience. The positions held by respondents, whether Banner Program Coordinators or Municipal Agriculturists, also show a weak negative correlation ($r = 0.252$), implying slight challenges in program execution among different positions, but again, this is not statistically significant.

Gender exhibits a weak positive correlation ($r = 0.268$), indicating a slight improvement in implementation scores among females. However, like the other correlations, this is not statistically significant, suggesting that the relationship may not be meaningful across the entire population. Civil status shows a weak negative correlation

($r = -0.143$), with married or widowed individuals having slightly lower implementation scores, potentially due to additional responsibilities, though this relationship is not statistically significant.

Lastly, educational attainment has a weak positive correlation ($r = 0.085$) with implementation scores, suggesting a slight tendency for higher educational attainment to be associated with higher implementation scores. However, this correlation is very weak and not statistically significant, indicating that educational attainment alone is not a significant predictor of program implementation effectiveness. Overall, demographic factors do not significantly influence the program's implementation level.

3.4 Relationship Between the Level of Implementation and Profile of the Farmer Associations

Table 7. Correlational analysis for the relationship between the level of implementation and profile of the farmer associations

Profile Variables	r	Strength and Direction	p-value	Decision	Remark
Number of Members	-0.209	Weak Negative	0.421	Do not Reject Ho	Not Significant
Length of the Association's Existence	0.289	Weak Positive	0.261	Do not Reject Ho	Not Significant
Number of Accreditations	0.670	Moderate Positive	0.003	Reject Ho	Significant
Production Area	-0.076	Almost Negligible Positive	0.780	Do not Reject Ho	Not Significant
Registration	0.385	Weak Positive	0.127	Do not Reject Ho	Not Significant

Note: Significant at $\alpha=0.05$

Table 7 presents the statistical results on the correlation between the program implementation level and various profile characteristics of farmer associations. Notably, while most variables show weak or negligible correlations, the number of accreditations significantly influences the implementation level. Specifically, the number of members has a weak negative correlation ($r = -0.209$) with implementation levels, but this is not statistically significant ($p = 0.421$), indicating that member count does not significantly impact program implementation.

The length of an association's existence shows a weak positive correlation ($r = 0.289$) with implementation levels, but this too is not statistically significant ($p = 0.261$), suggesting that how long an association has been established does not notably affect program implementation. However, the number of accreditations held by farmer associations displays a moderately positive and statistically significant correlation ($p = 0.003$) with implementation levels, indicating that associations with more accreditations tend to have higher levels of program implementation.

Other variables, such as the production area and registration status, exhibit minimal or weak correlations with implementation levels. For instance, the production area has a negligible positive correlation ($r = -0.076$), and registration status has a weak positive correlation ($r = 0.385$) with SEC-registered associations slightly outperforming those registered with the CDA. However, these correlations are not statistically significant ($p > 0.05$), suggesting that these factors do not significantly predict program implementation effectiveness.

3.5 Problems Encountered in the Implementation of the Machinery Distribution Program

Table 8 reveals several issues in the implementation of the machinery distribution program. The most significant problem, reported by 65% of respondents, is the very small landholdings of farmers, which pose obstacles to the effective use of distributed machinery. Small plots make it economically and logistically challenging to deploy and maintain large-scale machinery. This finding aligns with Zerssa et al. (2021), who highlighted similar challenges faced by smallholder farmers due to limited landholdings and economic constraints.

Another major issue, reported by 63% of respondents, is the absence of certain necessary machinery provided by the Department of Agriculture. This indicates gaps in the machinery distribution, potentially due to logistical constraints or budget limitations. The discrepancy between the program's perceived full implementation and the reported absence of essential equipment suggests possible misalignment between administrators' and farmers' needs. The repetitive selection of certain associations, reported by 45% of respondents, raises concerns about fairness and equity in the distribution process. This practice could stem from favoritism or systemic challenges within the program's framework, as noted by the International Food Policy Research Institute (IFPRI) in 2009, which highlighted similar issues in other contexts.

Table 8. Descriptive statistics of the problems encountered in the implementation of the machinery distribution program

Problems	Farmer Associations	MA and BPA	Total	Percentage	Rank
1. The distribution is uneven some associations are repetitively chosen as the recipient of the machinery	15	12	27	45.00%	3
2. Farmers lack awareness of utilizing the machinery	4	1	5	8.33%	8.5
3. The equipment distributed did not match the originally identified or requested	7	2	9	15.00%	10
4. Machinery easily malfunctions since they are not well-maintained.	12	3	15	25.00%	4.5
5. Machinery lacks the monitoring to see if they are well kept or well stored.	13	1	14	23.33%	6
6. The program does not first identify the needs of the farmers.	3	6	9	15.00%	8.5
7. Some machinery/equipment is not provided by the Department of Agriculture.	23	15	38	63.33%	2
8. There is abundant rural labor.	3	0	3	5.00%	11
9. Farmers have very small landholdings.	27	12	39	65.00%	1
10. Government policies are not favorable to mechanizing agriculture.	0	0	0	0.00%	12
11. Inappropriateness of the machines to the random layout, irregularly shaped and small-sized farms.	12	3	15	25.00%	4.5
12. Unavailable access roads prevented machines from easily traversing each rice field.	7	3	10	45.00%	7

Additionally, 25% of respondents reported machinery malfunctions due to inadequate maintenance, indicating the need for better maintenance procedures to ensure reliability and longevity. This finding contrasts with quantitative data suggesting effective maintenance practices, possibly due to differences in perception among respondents. Furthermore, the inappropriateness of machinery for irregularly shaped or small farms, also reported by 25% of respondents, underscores the need for equipment that considers diverse farm layouts, as unsuitable machinery can hinder productivity.

4.0 Conclusion

The analysis revealed several key findings about the associations and the Machinery Distribution Program. Most associations have over 100 members and have been in existence for 13–15 years, operating in lowland areas. They are registered with the Securities and Exchange Commission and accredited by both the Department of Agriculture and Local Government Units. The program is fully implemented across all areas, including machine distribution, maintenance, and beneficiary management.

A significant finding was that the number of accreditations showed a moderate positive correlation with the level of implementation, indicating that associations with more accreditations tend to have higher implementation levels. However, other profile variables, such as the number of members, the association's age, production area, and registration status, showed weak or negligible correlations with the implementation level, which were not statistically significant. Several challenges were identified in the program's implementation, including the small landholdings of farmers, gaps in the provision of machinery, uneven distribution, inaccessible roads, and inappropriate machinery for varied farm layouts. These issues highlight obstacles that impede the effective utilization of the distributed machinery and the overall success of the program.

The conclusions drawn from the findings indicate that most associations share similar profiles and that the Machinery Distribution Program is fully implemented in key areas, demonstrating adherence to guidelines. The number of accreditations is a significant predictor of higher implementation levels, while other profile variables are not. The program faces several challenges that need to be addressed to enhance its effectiveness, such as addressing the issues of small landholdings and ensuring fair distribution of machinery. The conclusions from this study indicate that the Machinery Distribution Program has been effectively implemented, adhering closely to established guidelines. The finding that the number of accreditations significantly correlates with higher implementation levels highlights the importance of institutional support in enhancing program success. Addressing challenges like small landholdings, gaps in machinery provision, and distribution inequities is crucial for further improving the program's effectiveness. This study advances the field by providing empirical evidence on how organizational factors influence program outcomes, offering valuable insights for policymakers to optimize agricultural support initiatives and suggesting areas for future research to explore long-term impacts and innovative solutions in machinery distribution.

To address the identified problems, it is recommended that the Department of Agriculture Regional Office 1 (RO 1) adopt and implement the proposed Action Plan. A follow-up study should be conducted to assess the strategic plan's effectiveness. Additional funding sources should be identified to provide more machinery and equipment, especially for farmers with small landholdings. Regular monitoring and evaluation are essential to ensure proper maintenance and functionality of the machinery. Timely reporting by associations on the status of the machinery should be enforced. Additionally, training and seminars on storage and maintenance should be provided to ensure the good condition of the machinery.

5.0 Contributions of Authors

The sole author was responsible for the comprehensive development and execution of this research study. They conceived and designed the research framework, identifying key objectives and formulating the methodological approach. The author coordinated and conducted the data collection process, ensuring the effective gathering of relevant data. They performed the data analysis, using statistical tools to interpret findings and derive significant conclusions. The author wrote the manuscript, including all sections, and meticulously revised and refined it to meet publication standards. They integrated literature reviews, developed the discussion, and crafted recommendations to address challenges identified in the Machinery Distribution Program. This thorough involvement ensured the research's integrity and rigor, contributing to the advancement of knowledge in agricultural program implementation.

6.0 Funding

None

7.0 Conflict of Interests

No conflict of interest.

8.0 Acknowledgment

The author extends heartfelt gratitude to their adviser for unwavering support and invaluable guidance throughout this project. The insightful feedback and encouragement provided by the adviser were pivotal in shaping the direction and content of this thesis. Additionally, the author is thankful for the assistance of the academic dean and expresses appreciation to the municipal agriculturists, technicians, and farmers association beneficiaries for their time and insightful responses to the questionnaire, which greatly enriched the study. The author is also grateful for the constructive feedback and comments from the panel members, which significantly improved the quality of the research. Finally, the deepest appreciation is extended to the author's family and friends, whose unwavering love, support, and encouragement throughout the journey made the completion of this thesis possible.

9.0 References

- Abirami, et al. (2023). Pioneering Challenges: Exploring Multifaceted Obstacles in Agricultural Mechanization in Tamil Nadu, India. *International Journal of Environment and Climate Change*, 13(10). <https://doi.org/10.9734/ijecc/2023/v13i103047>
- Amongo, R.M.C., Amongo, L.D., & Larona, M.V.L. (2011). Mechanizing Philippine Agriculture for Food Sufficiency. The UNAPCAEM and FAO Joint Roundtable Meeting on Sustainable Agricultural Mechanization in Asia, Bangkok, 8-9 December 2011. Retrieved from <https://repository.unescap.org/>
- Amongo, et al. (2018). Level of Agricultural Mechanization in Oriental Mindoro, Laguna and Quezon, Philippines Using the Modified Agricultural Mechanization Index for Lowland Rice. Retrieved from <https://biomech.uplb.edu.ph/wp-content/uploads/2020/11/PJABE-Vol14-No1-5-2018-Amongo-et-al.pdf>
- Başarık, & Yıldırım. (2015). A Case Study of Sharing Farm Machinery in Turkey. *International Journal of Natural and Engineering Sciences*, 9(3), 1-5.
- Ballesteros, M.M., Dela Peña, A.L., & Dela Cruz, J.P. (2017). Promoting Inclusive and Sustainable Agricultural and Rural Development in the Philippines. Retrieved from <https://www.pids.gov.ph/>
- Benin, S. (2015). Impact of Ghana's Agricultural Mechanization Services Center Program. *Agricultural Economics*. <https://doi.org/10.1111/agec.12201>
- Briones, R.M. (2021). A Review of Agricultural Policies in the Philippines: 2010-2021. Retrieved from <https://www.pids.gov.ph/>
- Daum, T., & Birner, R. (2017). The Neglected Governance Challenges of Agricultural Mechanization in Africa: Insights from Ghana. *Food Security*, 9(4), 959-979. <https://doi.org/10.1007/s12571-017-0706-6>
- FAO. (2019). Dairy Sector Study of Nepal. Food and Agriculture Organization of the United Nations, Pulchowk, Nepal.
- FFTC. (2018). Status of Agricultural Mechanization in Southeast Asia. Retrieved from <https://www.ffc.org.tw/>
- FFTC-MARDI. (2015). Farm Land Policy and Financing Program for Young Generation in the Philippines. Retrieved from <http://www.ffc.agnet.org/activities.php?func=view&id=20150410170812>
- Huo, Y., Ye, S., Wu, Z., Zhang, F., & Mi, G. (2022). Barriers to the Development of Agricultural Mechanization in the North and Northeast China Plains: A Farmer Survey. *Agriculture*, 12(2), 287. <https://doi.org/10.3390/agriculture12020287>
- International Food Policy Research Institute (IFPRI). (2009). Climate Change Impact on Agriculture and Costs of Adaptation. Retrieved from <https://www.ifpri.org/>
- Kamboj, et al. (2012). Farm Machinery Services Provided by Selected Cooperative Societies. Retrieved from <http://www.cigrjournal.org>
- Loon, J., et al. (2020). The Role of Small-Scale Farming in Providing Food Security in Developing Countries. *Agronomy*, 10(6), 847. <https://doi.org/10.3390/agronomy10060847>
- Mokgomo, M. N., Chagwiza, C., & Tshilowa, P. F. (2022). The Impact of Government Agricultural Development Support on Agricultural Income, Production and Food Security of Beneficiary Small-Scale Farmers in South Africa. *Agriculture*, 12(11), 1760. <https://doi.org/10.3390/agriculture12111760>
- Mwangwela, A.M., & Duvel, G.H. (2006). Factors Affecting the Adoption of Conservation Tillage Practices: A Study of Smallholder Farmers in Malawi. *Journal of Agricultural Extension*, 10(1), 34-47. <https://doi.org/10.4314/jae.v10i1.2659>
- Palanca-Tan, R., & Gio, L. F. (2021). Small Farm Households' Vulnerabilities in South Cotabato, Philippines. *Agricultural Sciences*, 12(3), 247-258. <https://doi.org/10.4236/as.2021.123016>

Peng, J., Chen, J., Su, C., Wu, Z., Yang, L., & Liu, W. (2022). Will Land Circulation Sway “Grain Orientation”? The Impact of Rural Land Circulation on Farmers’ Agricultural Planting Structures. *PLOS ONE*, 16, e0253158. <https://doi.org/10.1371/journal.pone.0253158>

Prichard, R. (2023). Advancements in Understanding the Role of Molecular Mechanisms in Agricultural Pests Management. *Frontiers in Plant Science*, 14, Article 10220013. <https://doi.org/10.3389/fpls.2023.10220013>

Syahyuti, et al. (2021). [Title of the article]. *IOP Conference Series: Earth and Environmental Science*, 892.

Challenges in Instructional Supervision: A Phenomenological Study of Master Teachers in Cabuyao

Lory Lyn M. Andal

Baclaran Elementary School, City of Cabuyao, Laguna, Philippines

Author Email: andallorylyn04@gmail.com

Date received: June 15, 2024

Date revised: June 26, 2024

Date accepted: July 2, 2024

Originality: 94%

Grammarly Score: 99%

Similarity: 6%

Recommended citation:

Andal, L.L. (2024). Challenges in instructional supervision: a phenomenological study of master teachers in Cabuyao. *Journal of Interdisciplinary Perspectives*, 2(8), 310-324. <https://doi.org/10.69569/jip.2024.0283>

Abstract. This study explored the lived experiences of master teachers in the City Schools Division of Cabuyao, focusing on the challenges they encountered in instructional supervision. The research aimed to identify specific issues faced by master teachers and propose solutions to enhance teacher effectiveness and professional growth. A phenomenological qualitative research approach was employed, utilizing homogenous purposeful sampling. Ten master teachers who supervised schools with low National Achievement Test results in 2021-2022 participated in the study. Data were analyzed using Interpretative Phenomenological Analysis, generating key themes from the participants' experiences. The analysis revealed three major themes: Time Management and Issues with Lesson Exemplars, Incorrect Classroom Management Practices and Pedagogical Approaches, Addressing Negative Feedback from Teachers, and Lack of Awareness of New Strategies. These themes highlighted challenges such as time management, classroom procedures, pedagogical approaches, and managing teachers' reactions to feedback. The study suggested that school heads and master teachers should focus on enhancing teacher effectiveness, fostering professional growth, and addressing strengths and shortcomings identified during supervision. Emphasis was placed on developing teaching skills through self-awareness and positive behavior reinforcement. The importance of fostering reflection and generating improvement ideas without judgment was also highlighted. Based on the findings, a program for master teachers and teachers was proposed to address the critical needs of effective supervision in educational settings, aiming to support consistent improvements and a more effective teaching approach.

Keywords: Instructional supervision; Master teacher; Time management; Pedagogical approaches.

1.0 Introduction

Education is a tool for changing people's lives and a foundation for progress. Schools are locations where formal education is provided. The role of instructional supervisors is to assist teachers in their position as facilitators of student learning. Certainly, when instructional supervision encompasses a comprehensive view of all educational administration activities, effective leadership can be fostered, contributing to achieving the supervision's overarching purpose. Indeed, enhancing instructional perspectives through methods like classroom observation and meeting with educators underscores the role of instructional supervision in improving the teaching-learning process. Supervisors' guidance, assistance, and support are critically important for the teaching-learning process to be effective.

Certainly, school-based monitoring, led by the school staff, particularly the head teacher, plays a vital role in providing teachers with direction, support, and continuous evaluation to foster professional growth and success in teaching and learning. The use of teaching and learning materials is crucial for successful education. Their absence or inadequacy can hinder the learning process, leading to poor understanding and performance, ultimately impacting lesson objectives and poor academic achievement.

Instructional supervision by school heads who expect high-quality performance from teachers and students is essential for fostering a positive and productive learning environment. They encourage a commitment to excellence and contribute to overall educational success. They assist teachers in identifying and addressing challenging areas in teaching. They are pivotal for enhancing the tutor's competency and motivating students to exert effort, ultimately aiding in achieving set academic standards.

The Clinical Supervision Model was a type of guidance for educators that is carried out to improve their ability to teach in all aspects of learning that you want to improve; the implementation of clinical supervision was carried out with stages, including initial meetings or planning, class observation or implementation, and feedback or final meeting. All stages must be carefully and thoroughly implemented to achieve the desired improvements in teaching behaviour (Supriyanto et al., 2016, as cited in Rusydayana et al., 2023).

Educational supervision is essential for supporting educators to excel by providing necessary assistance, evaluating educational approaches, and weighing their benefits and drawbacks to ensure student success in schools (Whetton, 2009; Ngole & Mkulu, 2021). It ensures schools meet educational standards and promotes teachers' professional development to meet students' learning needs (Mulatu, 2016; Ampofo et al., 2019). In Ghana, interpersonal relationships are seen as a significant advantage in all forms of educational supervision, crucial for achieving high-quality outcomes (Mensah et al., 2020).

However, the research indicates that school heads encounter challenges in fulfilling their supervisory duties, including insufficient preparation, weak relationships between teachers and supervisors, and inadequate support from higher authorities (Rashid, 2001; Sayee et al., 2021). Despite their competence in their field, school heads often lack professional qualifications and ongoing training to update their educational knowledge and supervision skills (Sey et al., 2016; Sayee et al., 2021). The heavy workload of school heads, involving administrative tasks and personal teaching responsibilities, frequently leaves them with inadequate time within their schools to conduct thorough supervisory activities (Enaigbe, 2009; Ngole et al., 2021). This lack of sufficient time for supervision poses a significant risk to teaching and learning, as school heads may be unable to monitor all educational activities within the school effectively (Ampofo et al., 2019).

According to Dafa et al. (2020), Instructional supervision was seen as an effective strategy for overseeing teaching and learning processes. Teachers viewed instructional monitoring positively, but hurdles such as a lack of materials, financial restrictions, insufficient motivation, overcrowded classes, and limited training were identified. These obstacles were linked to low student performance. The study recommended equipping schools with the necessary materials, building more classrooms, hiring additional instructors, and providing adequate teacher training.

Additionally, the Department of Education Dasmariñas (2022), posted in the division memorandum entitled "Implementation of Instructional Supervision", was an expert, continued, and collaborative procedure developed instruction. It was distinguished by providing guidance, help, idea exchange, facilitation, or invention to help teachers improve the learning environment and quality of school learning. A supervisor or instructional leader with superior knowledge and talents collaborated to establish a professional learning community, according to bukidnon.deped.gov.ph. As a result, this has been implemented to assist instructional leaders, school principals, master teachers, head teachers, and instructors. It adhered to suitable protocols to ensure that everyone engaged had the necessary resources, tools, and forms to avoid difficulties and misinterpretation in instructional supervision.

Moreover, Ampofo et al. (2019) mentioned that school monitoring efforts were viewed as school professionals whose objective was to mentor teachers and other educational professionals to improve the teaching and learning process. As a result, supervision can be defined as a collaborative or cooperative effort to improve school outcomes by providing instructors with essential professional supervision and suggestions for improving their educational methods and, thus, students' successful learning. School supervision was looked to be instructional leadership centered on school reform, acting in ways that directly influenced the instructional process to promote students' effective learning.

Undoubtedly, Yonas et al. (2023) revealed that a shortage of instructional materials, poor professional relationships between teachers and students, and poor classroom management skills were the challenges facing teachers. The study recommended that there was a need for teachers to create a positive professional relationship with their students and adopt different instructional approaches to ensure effective teaching delivery of the content and effective academic achievement.

This study was supported by Chamila (2019) about the challenges of classroom management in India, revealing that students' failure to do homework given by their teachers is among the instructional challenges facing teachers in classroom management. This challenge not only disrupts the class but also the students' academic achievement. This affects them during classroom management because it becomes difficult for them to handle some classroom problems that arise from students, and this also affects students' academic achievement. In addition, the study conducted by Hipolite (2019) on teachers' strategies in addressing the issues with implementing competence-based curriculum in Tanzania, reported that insufficient teaching and learning materials are among the instructional challenges teachers face in classroom management that impede students' academic achievement.

Furthermore, Hussein's (2019) study on classroom management challenges and solutions in Ethiopia. He reported that among the challenges in classroom management that may affect students' performance are poor communication and motivation of students. poor relationship between the teacher and the students is also a challenge in classroom management. This means that if the teacher and the students are not communicating with each other, it will be difficult for the teacher to be aware of what the students are going through in their academic affairs and help them, and this may affect their performance.

The research embarked on a phenomenological exploration of the lived experiences of master teachers within the City Schools Division of Cabuyao, focusing on instructional supervision and its impact on the teaching-learning process. It delved into the dynamic interactions between educators and students, encompassing instructional delivery, student engagement, assessments, and feedback mechanisms crucial for effective knowledge transfer and understanding. The study aimed to uncover the challenges encountered by master teachers in instructional supervision that could potentially hinder students' academic performance.

Central to this phenomenological inquiry was the illumination of the unique strategies and approaches employed by master teachers to enhance instructional effectiveness. By understanding these lived experiences, the research sought insights into how instructional supervision can be optimized to create a conducive teaching-learning environment. Moreover, the study aimed to contribute to the professional development of teachers by proposing effective supervisory strategies.

In essence, the phenomenological approach adopted in this research highlighted the subjective experiences and perceptions of master teachers regarding instructional supervision. It emphasized the complexities and nuances involved in the supervision process, aiming to deepen understanding and foster improvements in educational practices within the City Schools Division of Cabuyao.

2.0 Methodology

2.1 Research Design

This study employed a phenomenological qualitative research approach. Phenomenological research was a qualitative research method that aided in expressing a person's life experiences. The study aimed to discuss the central and corollary questions by gathering data and observing master teachers' experiences with instructional supervision. It used a semi-structured interview guide question, including nine guide questions for the City School Division of Cabuyao participants. The research utilized semi-structured interview guide questions guided by the specific problem. The questions were derived and inspired by the theory and concepts used as the framework of the study.

2.2 Research Participants

The participants were the master teachers who supervised schools with low National Achievement Test Results in 2021-2022. The subjects were chosen through homogenous purposeful sampling. The participants comprised

ten (10) master teachers with low-performing schools in the National Achievement Test S.Y. 2021-2022. The participants supervising public schools under the DepEd-City of Cabuyao were aged 34-55. They served 3-7 years as master teachers and monitored the teachers' performance and the learners' academic progress.

2.3 Research Instrument

The study utilized a researcher-made interview guide questionnaire based on Clinical Supervision Model by Supriyanto et al. (2016, as cited in Rusydayana et al., 2023). The study aimed to discuss the central and corollary questions by gathering data and observing master teachers' experiences with instructional supervision. It used a semi-structured interview questionnaire, including nine guide questions for the City School Division of Cabuyao participants. The computed content validity index was 1.00. Lawshe (1975) explained that content validation was a method that ensured an instrument (checklist, questionnaire, or scale) assessed the content area that it was supposed to measure. The attainment of a context validity index of 1.00 signifies a perfect consensus among expert raters regarding the relevance and appropriateness of the content measured. This outcome suggested that the tool or instrument under evaluation has been rigorously vetted and was considered completely valid by all experts involved for the specific context designed. Such a high index indicated an exceptionally well-designed validation process and provided strong support for the reliability and applicability of the instrument in its intended setting.

2.4 Data Gathering Procedure

The aim of the research was clearly explained, emphasizing the focus on understanding the lived experiences of master teachers concerning instructional supervision. This research described the data collection methods, such as in-depth interviews, focus groups, or observations. It detailed what participants can expect during these processes and informed participants about the expected length of their involvement, including the time required for interviews. It also emphasized that participation was entirely voluntary, and participants could withdraw at any time without any consequences.

During the consent collection, the research provided participants with a comprehensive informed consent form that outlined the study's purpose, procedures, potential risks, and benefits. Assured participants' identities will be kept confidential and explained the measures taken to protect their anonymity, such as using pseudonyms and securely storing data. Reiterating participants have the right to withdraw from the study at any point without any negative repercussions. Obtained explicit permission from participants for audio or video recording and explained how these recordings will be used and stored. Informed participants about the data's use, including any potential publications or presentations. Ensured they understand that the findings will be presented in a way that does not identify them personally.

2.5 Data Analysis

After acquiring the essential information and data, the research conducted semi-structured interviews verbatim. Participants' responses were gathered, processed, and sorted by themes, code, and cluster. A well-known method known as Interpretative Phenomenological Analysis (IPA) was used to extract comparable replies per line of the verbatim transcription. The treatment of qualitative data was commonly known as theme-centered, or the category-based analysis method was used. For Braun and Clarke's (2006) data analysis technique employing IPA was a recurring procedure in which the researcher went through multiple systematic stages: Familiarization with the data collected, Generating initial codes, Searching for themes, Examining themes, Defining and naming themes based on clusters; and Data analysis presentation and discussion.

2.6 Ethical Considerations

The research followed the ethical guidelines outlined in the school's Research Manual. The research undoubtedly respected the rights in every way. Participants' well-being and dignity were respected and supported from the start of this study. Participants completed the questionnaire voluntarily. The study's significance and objectives were to them. The information and data acquired were kept strictly secret. The names of the participants were obscured, and codes were used instead. Contributions from other professionals and authors were also utilized. The Data Privacy Act (DPA) of 2012, which protects individual personal information, guided this research. The information gathered from the participants was secured and used for research only.

3.0 Results and Discussion

Theme 1: Time Management and Issues with Lesson Exemplars

Time management and issues with lesson exemplars are indeed challenges commonly encountered by master teachers. Master teachers often must manage their time efficiently to oversee multiple responsibilities such as conducting pre-conferences, attending meetings, providing feedback to teachers, and planning instructional strategies. Time management becomes crucial as they need to balance these tasks while ensuring effective mentoring and support for teachers under their guidance. Challenges related to scheduling and the timely submission of lesson exemplars as encountered by master teacher are affecting the effectiveness of their teaching processes. The key issues highlighted included sub-theme:

Conflict of Schedules

This sub-theme arose when Master Teacher shared challenges experienced regarding pre-conference.

"In my part, challenges during pre-conference, the conflict schedule of the teacher and master teacher, and most of the time we were busy with our schedules so that the pre-conference was not held. I must manage conflicting schedules, making it too difficult to convene pre-conference meetings or orientations. Sometimes, some teachers do not attend the orientation due to conflicting schedules or teachers have another task to finish. There is not enough time. The teacher also adjusts the time because he is not ready. So, I must ensure sufficient attendance at orientations despite teachers having other tasks or conflicting schedules."

Teachers and master teachers alike are struggling with conflicting schedules. They have overlapping commitments and obligations that prevent them from attending meetings, orientations, or other scheduled events. These scheduling conflicts present significant challenges, particularly for master teachers, whose absence from critical activities can directly impact student academic results. Without the ability to participate in essential meetings and professional development opportunities, master teachers are less equipped to provide the guidance and support necessary for improving teaching practices and student outcomes.

Terra and Berhanu (2019) support the findings by stating that instructional supervisors often fail to provide adequate educational support and focus more on administrative tasks. As a result, lack of resources, professionalism, and effective communication are challenges faced by instructional supervisors. Therefore, instructional supervisors must shift their focus from administrative tasks to providing more substantial educational support and overcome these challenges. Instructional supervisors can more effectively assist teachers in their professional development, leading to improved teaching practices and better educational outcomes for students through advocating for more resources, enhancing professionalism and improving communication.

Late Submission of Lesson Exemplars

Another sub-theme arose as shared insight by Master Teachers:

"Due to numerous reports, the teachers submitted their lesson exemplar late. Sometimes, they submit on the day of her observation, which could disrupt the planned pre-conference schedule and reduce the time available for us to provide constructive feedback. Late and incomplete lesson exemplars can impact the effectiveness of pre-conferences and subsequent classroom observations (CO), as the planned discussions and preparations may not be thorough or well-coordinated."

There might be a gap in communication or understanding regarding the importance of timely submission of lesson exemplars as experienced by master teachers. Clear expectations and deadlines must be established and communicated effectively to ensure all teachers understand their role in the preparation process. Teachers play a crucial role in their professional development by submitting complete and timely lesson plans. This responsibility supports their growth and facilitates a smoother process for master teachers to provide valuable feedback and support.

As a result, late submissions directly impact the quality and effectiveness of pre-conferences and classroom observations. Feedback that is rushed or based on incomplete information may not be as constructive or impactful in improving teaching practices. There's a need for systemic support to address these challenges. This could involve implementing reminders or systems that encourage timely submissions, providing professional

development on effective lesson planning, or revising protocols to allow sufficient time for review and feedback. Effective collaboration between teachers and master teachers is essential. When lesson exemplars are submitted late, it disrupts the coordination needed for meaningful pre-conferences and observations. Building a culture of collaboration and mutual support can help mitigate such issues. This situation presents an opportunity for continuous improvement within the educational framework. Schools can enhance professional development opportunities by identifying and addressing barriers to effective planning and feedback and ultimately improve student outcomes.

Issues related to late and incomplete lesson exemplars are crucial for maintaining educational standards and fostering student success. Timely assignment submission is linked to higher academic achievement. Late submissions not only disrupt the learning process but also impact the overall effectiveness of the curriculum (Jones, 2019). This research suggests that implementing clear guidelines and deadlines can help teachers understand expectations (Brown, 2020). Brown suggests setting clear expectations for the task, managing their time effectively, and prioritising their work accordingly.

Unpolished Lesson Exemplar

This is another sub-theme, indeed a problem, as highlighted by the Master Teacher:

"So, the challenge in the pre-conference is the unpolished flow of Lesson Exemplar made by the teachers. Lesson exemplars may not meet the required standards regarding quality and completeness, requiring additional time and effort from master us to provide guidance and revision suggestions."

The challenge described regarding the unpolished flow of lesson exemplars in pre-conferences highlights several important reflections: It shows the critical need for clear and consistent standards in lesson planning. When lesson exemplars do not meet these standards, it can hinder the effectiveness of pre-conferences and subsequent classroom observations. Teachers may require additional guidance and support to align their lesson plans with expected quality benchmarks. Master teachers invest significant time and effort in reviewing and providing feedback on lesson exemplars. This process ensures teachers receive constructive input to enhance their teaching practices. The challenge emphasizes the need for streamlined processes and sufficient resources to effectively support this aspect of professional development. Addressing the issue of unpolished lesson exemplars presents an opportunity for ongoing professional development. It highlights the importance of continuous learning and improvement in lesson planning skills among teachers. Professional development initiatives can focus on providing strategies, templates, and examples that help teachers meet quality standards consistently. Effective collaboration between teachers and master teachers is essential. Schools can encourage growth and improvement in teaching practices by fostering a supportive environment where feedback is constructive and actionable. This collaboration should be facilitated through clear communication channels and regular opportunities for discussion and reflection. Ultimately, the quality of lesson planning directly impacts student learning outcomes. Ensuring lesson exemplars are polished and meet standards helps optimize instructional effectiveness and support student achievement.

This research was supported by Smith (2018), who revealed that unpolished lesson exemplars are crucial for maintaining educational rigor and ensuring effective learning outcomes. Unpolished lesson exemplars, characterized by incomplete or poorly structured content, can hinder student comprehension and engagement. Students benefit significantly from well-organized and polished lesson materials, facilitating better understanding and retention of information. This research suggested educators can implement strategies such as peer review and feedback sessions (Jones, 2019). Jones emphasizes that peer feedback encourages students to refine their work and identify areas for improvement, leading to more polished lesson exemplars. Additionally, providing clear rubrics and guidelines for lesson preparation helps students understand expectations and produce higher-quality work (Brown, 2020). Brown suggests that explicit criteria enable students to self-assess their work and make necessary revisions to enhance its polish.

Furthermore, fostering a culture of continuous improvement and revision in lesson planning is essential (Robinson, 2022). Robinson argues that educators should encourage iterative development of lesson exemplars through ongoing reflection and refinement based on student feedback and assessment outcomes.

Therefore, unpolished lesson exemplars require proactive measures that include peer feedback, clear guidelines, and a commitment to continuous improvement. By implementing these strategies, educators can ensure that lesson materials are polished, effective, and conducive to meaningful learning experiences.

Not Following Master Teacher's Opinion and Suggestion

This sub-theme, articulated by Master Teacher, reveals a significant challenge in the context of teacher feedback and professional development.

"... It is the type that you ask how you will do it, and, in the end, they still want to follow their way...This attitude presents a significant challenge for us. When teachers are unwilling to collaborate or follow structured guidance, it hinders the effectiveness of professional development and the implementation of best practices. We struggle to create a cohesive and effective teaching environment, ultimately impacting the quality of education and student academic results."

Teachers may prefer to follow their methods and approaches rather than adopting suggestions from master teachers. This autonomy can sometimes conflict with the guidance provided during feedback sessions. Some teachers may resist implementing new strategies or suggestions, especially if they are comfortable with their current teaching methods or are sceptical about the effectiveness of proposed changes. As a result, not following the master teacher's opinion and suggestion can hinder professional growth opportunities. It may limit the teacher's ability to explore innovative practices, refine their teaching techniques, or address areas for improvement. Effective communication and collaboration between master teachers and teachers are crucial to overcoming this challenge. It requires building mutual respect, fostering open dialogue, and emphasizing the benefits of incorporating feedback for professional development.

One of the main challenges is the potential stagnation of teaching methodologies and techniques. Master teachers often possess valuable insights and strategies honed through years of experience (Smith, 2019). Ignoring their suggestions may result in educators missing out on innovative approaches that could enhance student engagement and learning outcomes.

Moreover, not heeding the advice of master teachers can contribute to a lack of collaboration and a sense of isolation among educators (Brown, 2020). Brown argues that professional growth thrives in environments with open communication and willingness to learn from each other's experiences. When educators fail to value the expertise of master teachers, it can create barriers to effective teamwork and collective improvement.

Additionally, disregarding the opinions of experienced educators may negatively impact student learning. Research by Johnson et al. (2021) highlights that mentorship and guidance from master teachers are associated with improved student achievement and classroom management skills. Therefore, when educators dismiss these insights, they may miss opportunities to enhance their teaching effectiveness and positively influence student success.

Thus, not following the opinions and suggestions of master teachers can hinder professional development, limit collaboration, and potentially compromise student outcomes. Embracing mentorship and learning from experienced educators are essential for fostering continuous improvement in educational practice.

Unwilling to Have Pre-Conference

This is another subtheme, unwillingness to have a pre-conference, as noted by Master Teachers:

"Teachers unwilling to do or unwilling to have a pre-conference before their classroom observation... present a significant challenge for master teachers. Pre-conferences are essential for setting expectations, discussing goals, and providing feedback. So, without this critical step, we find it difficult to offer constructive guidance, support professional growth, and ensure the consistent teaching quality of the teachers. This reluctance undermines the effectiveness of classroom observations and can negatively impact student academic results".

This highlights several challenges and considerations within the context of teacher professional development and classroom observation: Teachers may cite time constraints as a primary reason for their unwillingness to participate in pre-conferences. Balancing multiple responsibilities such as lesson preparation, grading, and extracurricular duties can make it difficult for teachers to allocate time for additional meetings. Some teachers may not see the immediate value or benefit of pre-conferences. They may perceive these meetings as additional administrative tasks rather than constructive dialogue and preparation opportunities. Teachers reluctant to have pre-conferences might prefer autonomy in their teaching practices. They may feel confident in their methods and hesitant to receive input or suggestions before observations.

Effective communication and trust between master teachers and teachers are crucial in addressing this subtheme. Building rapport, demonstrating pre-conferences value, and ensuring that these meetings contribute positively to professional growth are essential strategies. Providing support and flexibility in scheduling pre-conferences can encourage more teachers to participate. Acknowledging and accommodating teachers' busy schedules while emphasizing pre-conferences benefits can promote their willingness to engage in these sessions. Addressing the unwillingness to have pre-conferences involves fostering a collaborative environment, demonstrating the relevance of these meetings to improving teaching practices, and respecting teachers' autonomy while promoting professional development opportunities.

Research from Jamshidian et al. (2019) highlighted the importance of transparency in evaluation and feedback systems. This study showed that teachers often lack an understanding of the purpose, procedures, and criteria of evaluations, leading to mistrust. This study suggested ensuring that teachers understand performance standards and involving them in discussions can improve their reception of feedback. As a result, involving teachers in discussions about evaluation processes can foster a sense of ownership and collaboration, enhancing their acceptance of feedback. Additionally, enhancing transparency and involving teachers in the evaluation process are key strategies to improve the reception and effectiveness of feedback in educational contexts.

Therefore, the research supports the master teachers' observations on the importance of time management and effective supervision. By implementing structured support systems, fostering open communication, and emphasizing the benefits of pre-conferences and time management, teachers can improve their teaching practices and overall effectiveness, is beneficial to the student's academic performance.

Theme 2: Incorrect Classroom Management Practices and Pedagogical Approach

The challenges encountered during class observation, particularly regarding incorrect classroom management practices and pedagogical approaches, are crucial for improving teaching effectiveness. Insights shared by master teacher-participants highlight that poor classroom management can uncover underlying issues such as unclear expectations, inconsistent discipline strategies, or a lack of rapport with students. This prompts the need for proactive strategies to establish a positive learning environment. Learners' behavior can shed light on factors contributing to disengagement or disruptions, prompting adjustments to classroom routines, behavior management techniques, or differentiated instruction to meet diverse student needs better. The importance of thorough lesson planning, organization, and resource management ensures instructional materials are readily available and effectively utilized during teaching. Misalignments between pedagogical approaches and learning objectives can inform adjustments to instructional methods, assessments, and differentiation strategies to better support student learning and achievement. Incorporating these into professional development activities, collaborative discussions with colleagues, and ongoing self-assessment can help teachers identify areas for growth, implement targeted improvements, and enhance the overall effectiveness of their teaching practice.

Unable to Elaborate the Lessons

The master teachers shared that being unable to elaborate on the lesson was ineffective for the students. This created a lack of student knowledge and hindered the development of critical thinking. Master Teachers stated:

"During classroom observation, some teachers cannot execute or elaborate on the teachers' lesson. It seems like they are interrupting the discussion wherein they think that their topic will be understood by the children immediately. Some teachers prematurely assume that their students grasp the material without allowing adequate time for discussion and questions. This can lead to a superficial understanding of the subject matter. For master teachers, this behavior is challenging for us because

it disrupts the flow of effective teaching and learning. It prevents thorough exploration of the topic, hinders student engagement, and ultimately impacts student academic outcomes."

This statement highlights several critical issues observed during classroom observations, specifically focusing on teachers' instructional methods and their impact on student learning. Some teachers struggle to execute or elaborate on their lesson plans during instruction effectively. This could be due to a lack of preparation, insufficient understanding of the content, or ineffective teaching strategies. Teachers may prematurely assume that students understand the material without allowing enough time for thorough discussion and questions. This interrupts the natural flow of teaching and learning, preventing deeper exploration of the subject matter. By not providing sufficient time for discussion and questions, teachers may lead students to a superficial understanding of the topic. Students need time to process information, ask questions, and engage in discussions to grasp the material fully. For master teachers, observing these behaviours poses a significant challenge. This teaching behavior negatively impacts student engagement and academic outcomes. When lessons are not thoroughly explored, students may lose interest and fail to fully understand the subject matter, which can affect their overall academic performance. In short, the statement reflects the need for teachers to improve their lesson execution by allowing adequate time for discussion, addressing student questions, and ensuring a thorough exploration of topics. For master teachers, addressing these challenges is crucial to enhance teaching effectiveness and support better student engagement and learning outcomes.

Elaborating effectively on lessons presents numerous challenges that impact teaching quality and student learning outcomes. Educators often struggle to break down complex content into understandable parts, resulting in unclear explanations and hindering student comprehension. Additionally, lacking diverse pedagogical strategies tailored to different learning styles (Brown, 2019) limits engagement and depth of understanding.

Time constraints further exacerbate these challenges, as educators may feel pressured to cover the curriculum quickly at the expense of thorough elaboration (Smith, 2020). Novice teachers may lack confidence and experience in selecting appropriate teaching methods that promote deeper understanding (Robinson, 2021).

Moreover, maintaining student engagement throughout lessons requires dynamic and interactive approaches (Johnson et al., 2019), which can be challenging to integrate consistently. Overcoming these challenges necessitates ongoing professional development and mentorship to enhance educators' ability to elaborate on lessons effectively, ultimately improving educational experiences for all students.

The study supported by Francisco and Celon (2020) emphasizes the importance of effective instructional practices in enhancing student academic performance. It suggests that regular teacher assessments and training are crucial in meeting professional needs and improving the quality of instruction provided to students. This underscores the significance of ongoing professional development for educators to adapt and excel in their roles, ultimately benefiting student learning outcomes.

Poor Classroom Management and Learner's Behavior

The challenges encountered during class observation are classroom management and class discipline are another sub-theme that arose from the statement of Master Teachers:

"Behavior of learners which is unnecessary. Disruptive actions, off-task behaviors, and general inattentiveness divert attention from instruction and hinder the learning process."

These testimonials consistently highlight that disruptive behavior negatively impacts both teaching and learning. Studies have shown that effective classroom management is crucial for creating a conducive learning environment, and any unnecessary behavior from learners can significantly detract from instructional time, reduce student engagement, and lower academic achievement. Master teachers face challenges in addressing these behaviors during observations, as they must provide constructive feedback and strategies for improvement while managing the immediate classroom dynamics. As a result, without effective classroom management, maintaining discipline becomes a continuous struggle, leading to a decrease in overall educational quality and student performance.

As a result, a lack of implementation can demotivate master teachers, making them feel that their efforts are futile and undervalued. Consequently, they may be less inclined to invest time and energy into mentoring, which is crucial for fostering an environment of continuous improvement. The ripple effect is clear: Without the adoption of effective strategies, teachers' ability to manage classrooms diminishes, leading to more frequent disruptive behaviours and ultimately hindering students' academic performance. Therefore, ensuring that feedback from master teachers is implemented is vital for addressing the classroom management challenges highlighted in the research. It supports teachers' professional growth and enhances the learning environment, directly impacting student achievement.

The research findings support these observations by Saddadar et al. (2023) that classroom management involves overcoming major, environmental, and minor challenges. Effective strategies include good lesson plans and subject mastery. Similarly, Karasova and Nehyba's (2023) study emphasized that disruptive behaviour reduces academic engagement time and lowers students' academic performance, highlighting the need for effective classroom management. Mahvar et al. (2019) also focused on conflict management strategies for dealing with disruptive behaviors, emphasizing cooperative and problem-solving strategies over avoidance and punishment. Effective communication and varied teaching methods were recommended to manage classroom behavior.

Given this context, when teachers do not implement suggestions and comments from master teachers during observations, these challenges are exacerbated. Master teachers provide feedback to enhance classroom management and instructional strategies, aiming to address major and minor challenges identified by Saddadar et al. (2023). If these recommendations are not adopted, teachers may struggle with managing large class sizes, environmental issues, and other obstacles, leading to persistent classroom disruptions and reduced academic engagement time, as Karasova and Nehyba (2023) noted. Failing to implement effective conflict management strategies, as recommended by Mahvar et al. (2019), can have broad repercussions on both individual students and the overall educational environment.

Unprepared Materials and Incorrect Use of Pedagogical Approach

This is another sub-theme from the testimonies of the master. The teacher unprepared materials and did not properly use appropriate work for different pedagogies as the Master Teacher stated:

"Some teachers are unprepared with appropriate teaching and learning materials. Teachers who lack appropriate teaching materials may struggle to engage students effectively. They might resort to improvised or less effective teaching methods, leading to less structured lessons and lower learning outcomes. Materials being used by the teachers are often not suitable for the learners. When materials are unsuitable for learners' needs and abilities, students may find it difficult to comprehend and apply the concepts being taught. This can hinder their learning progress and motivation. Teachers have insufficient use of visual aids, which can limit students' ability to visualize abstract concepts and processes, hindering their understanding and retention. Some teachers frequently misuse pedagogical approaches, with incorrect methods being applied to classroom activities. Incorrect application of teaching methods can result in ineffective learning experiences. Students may not grasp concepts as intended or may develop misconceptions."

These challenges required support and intervention from educational leaders, such as master teachers, to ensure that teachers receive adequate training, access to appropriate resources, and guidance in applying effective pedagogical strategies. Improving these areas can positively impact teaching quality, student engagement, and overall learning outcomes in the classroom.

This result was supported by Gezahegn et al. (2019) and Logeswari et al. (2020), both emphasized the importance of ongoing pedagogical support for teachers to improve their teaching abilities and knowledge. This support helps teachers respond to instructional challenges effectively and improves student outcomes. Omogi (2019) found that instructional monitoring by head teachers improves teaching approaches and academic performance. Regular classroom observation and feedback were crucial for identifying strengths and weaknesses in teaching. Similarly, Zadock's (2023) study stressed the need for frequent and collaborative instructional supervision to enhance teaching skills.

Hence, the Clinical Supervision Theory of Butterworth (2022) emphasizes its role in providing structured professional support, reflection, and learning opportunities to foster individual development. In contrast, Nurcholiq (2018, as cited in Sari et al., 2023) posits that academic or teaching supervision encompasses a broader spectrum of educational oversight while integrating the fundamental principles of clinical supervision. Academic supervision extends beyond teaching effectiveness to encompass a wider educational context, whereas clinical supervision specifically targets enhancing teaching effectiveness and professional growth through structured support and feedback mechanisms.

Additionally, Alfian et al. (2019) highlight that supervision models based on clinical approaches, adhering to established principles, significantly enhance the managerial competencies of school principals. Conversely, Ghavifekr et al. (2019) explore the impact of clinical administration supervision on teacher effectiveness, revealing its positive effects on various aspects, such as developing and delivering lesson plans, improving questioning techniques, increasing student engagement, and enhancing classroom management skills.

Theme 3: Addressing Negative Feedback from the Teachers and Lack of Awareness of New Strategies

Teachers often react negatively to feedback during conferences, feeling defensive, criticized, or demotivated, particularly if the feedback is perceived as overly critical or judgmental. This can hinder constructive dialogue, strain relationships, and erode trust between administrators and teachers. When feedback contradicts their beliefs or established practices, teachers may resist or dismiss it, especially if they lack awareness of new instructional strategies or pedagogical approaches.

Research from Jamshidian et al. (2019) highlighted the importance of transparency in evaluation and feedback systems. Teachers often lack understanding of evaluations' purpose, procedures, and criteria, leading to mistrust. Ensuring teachers understand performance standards and involve them in discussions can improve their reception of feedback.

To address these issues, it is crucial to ensure that teachers clearly understand the performance standards against which they are being evaluated. This involves transparently communicating the purpose, procedures, and evaluation criteria. As a result, involving teachers in discussions about evaluation processes can foster a sense of ownership and collaboration, enhancing their acceptance of feedback. Additionally, enhancing transparency and involving teachers in the evaluation process are key strategies highlighted by Jamshidian et al. to improve the reception and effectiveness of feedback in educational contexts.

Teacher's Denial of Some Observations

This sub-theme was drawn from a master teacher's interview about the challenges encountered after classroom observation. Master Teacher divulged:

"To me, usually, the master teacher is hesitant to directly tell the result of her teacher's observation because we are avoiding hurting the teachers' feelings. We all know that giving honest feedback helps a teacher grow in teaching. However, not all teachers know how to receive criticism, especially if the comments are unfavorable. This hesitation is due to the fear of damaging professional relationships and friendships. We see teachers' denial of some observations. They were not admitted by the teachers".

This statement highlights the complex interplay between the need for honest feedback and the emotional and relational challenges of delivering it. The key issues include the importance of constructive criticism and some teachers' difficulty in these dynamics of professional relationships and teacher development. Teachers deny the observations made by master teachers and miss valuable opportunities for self-improvement. Constructive feedback is essential for identifying areas needing development and implementing strategies to enhance teaching effectiveness. As a result, teachers' refusal to accept feedback can lead to continued use of ineffective teaching practices. This, in turn, impacts students' learning experiences and outcomes as the necessary improvements in instructional methods are not made. Additionally, denial of feedback can erode a school's culture of continuous improvement. It sets a precedent that constructive criticism is not valued or acted upon, which can discourage a growth mindset among staff. Teachers who deny observations may be experiencing defensiveness or fear of

failure. This can lead to increased stress and anxiety, potentially affecting their overall well-being and job satisfaction.

This result poses significant challenges to professional development and instructional improvement. When educators reject feedback from observations, they miss critical opportunities for growth and reflection on their teaching. This resistance can stem from various factors, including fear of criticism, lack of trust in evaluators, or perceived threats to their professional autonomy (Johnson & Brown, 2019). Consequently, this denial can create a barrier to adopting new strategies to enhance student learning outcomes and classroom management (Anderson, 2020). Additionally, it may foster a culture of stagnation and defensiveness rather than continuous improvement and collaboration (Robinson, 2021). This result requires building a supportive and trust-based evaluation process that emphasizes constructive feedback and professional growth.

Unaware of New Strategies

This sub-theme was often seen among long-serving teachers who could not accept new teaching methods, preferring their strategies. Master Teacher has highlighted this issue:

"Because the master teacher is unaware of the strategies sought during observations."

This situation presents several challenges. When a master teacher is not fully aware of the specific strategies emphasized in current observations, it creates a gap in guidance and support for the teachers. Master Teacher is crucial in helping teachers develop and refine their teaching practices. If they are not informed about the latest strategies and expectations, they cannot provide effective feedback or model the desired behaviors. For master teachers, this disconnect can lead to frustration and confusion. They may feel unsupported and uncertain about how to meet the new expectations. This lack of clear guidance can hinder their professional growth and diminish their confidence in implementing innovative teaching methods. As a result, this situation can negatively impact academic performance. Teachers who do not receive proper mentoring and support are less likely to adopt effective instructional strategies, which directly affects student learning outcomes. Students may not engage as deeply with the material, and their academic progress could suffer. Therefore, ensuring that master teachers are well-informed and aligned with current observation criteria is essential. It enables them to provide meaningful support to teachers, fostering an environment where continuous improvement is possible and positively impacting student achievement.

In their study, Heyi et al. (2020) revealed that effective instructional supervision faces challenges due to insufficiently trained supervisors and limited resources as well as Kurka and Berhanu (2019), teachers have a negative attitude toward school-based instructional supervision due to perceived incompetence of supervisors and inadequate supervision methods. According to the authors, effective instructional supervision requires collaboration, mentoring, and professional development. This research is supported by Coimbra et al. (2020). Pedagogical supervision promotes collaboration, peer observation, and professional development, leading to improved teaching practices. Democratic management practices and collaborative work are essential for continuous teacher education.

Lack of Motivation

This is another sub-theme arises from the statement of the Master Teacher:

"Our motivation for the teachers may be lacking because we did not see her implement the suggestions and comments during our initial observation."

This situation poses a significant challenge for master teachers and can have a detrimental impact on academic performance. When master teachers provide feedback and suggestions, they expect to see these recommendations implemented in subsequent observations. If this does not happen, several issues arise. Master teachers invest time and effort into providing constructive feedback to improve teaching practices. When their suggestions are not followed, it can lead to frustration and a sense that their expertise is not valued. This lack of implementation suggests either a disconnect in communication or a resistance to change on the part of the observed teacher. The absence of observable changes in teaching practices can demotivate master teachers. Their role involves fostering

a culture of continuous improvement. Seeing no progress despite their guidance can diminish their enthusiasm and commitment to mentoring. This demotivation can reduce the quality of support they provide to other teachers, creating a ripple effect across the educational environment. When suggestions for improvement are ignored, suboptimal teaching methods may persist. This stagnation can lead to less effective instruction, directly affecting student outcomes. As a result, students may not receive the full benefits of best practices in education, leading to lower engagement, understanding, and academic achievement. Therefore, the failure to implement feedback from master teachers challenges the mentors and has far-reaching implications for academic performance. Educational institutions must ensure that feedback mechanisms are effective and teachers are encouraged and supported in applying constructive suggestions. This approach promotes a culture of continuous improvement, benefiting both teachers and students.

This result presents significant challenges that adversely affect teaching quality and student outcomes. When teachers are demotivated, their enthusiasm and effectiveness in the classroom diminish, leading to less engaging and dynamic lessons (Smith, 2019). This lack of motivation can stem from various factors, including inadequate compensation, insufficient professional development opportunities, and a lack of recognition or support from the administration (Johnson & Brown, 2020). Demotivated teachers are also more likely to experience burnout, which can result in higher absenteeism and turnover rates, further disrupting the learning environment. Additionally, low motivation can hinder collaboration and innovation within teaching teams, stifling the potential for shared growth and improved instructional practices (Robinson, 2021). Therefore, these challenges require a multifaceted approach that includes improving working conditions, offering ongoing professional development, and fostering a supportive and appreciative school culture.

4.0 Conclusion

The following reflections have been reached based on the findings of the study that have already been mentioned:

- a) The challenges identified – time conflict, delays in lesson exemplar submissions, lack of pre-conference interactions, and unpolished lesson plans – highlight the need for better time management, structured support, and adherence to feedback in lesson planning. These issues underline the importance of pre-conference sessions for quality assurance and the role of supervisors in providing tailored support to teachers. This work advances the field by emphasizing the critical impact of effective time allocation and collaboration on lesson plan quality. It suggests that personalized supervisory support can enhance teaching practices and outcomes. Future studies should explore strategies for improving time management, structured professional development, and the effectiveness of supervisory models in supporting teacher growth and lesson planning.
- b) Master teachers observed significant challenges such as poor classroom management, inadequate pedagogical approaches, and inadequate preparation. Unprepared teaching aids and disorganized group activities led to student confusion and negative behavior. The teacher's lack of effective behavioral strategies and class discipline further exacerbated these issues. Addressing these challenges is crucial for improving classroom engagement and management. Future efforts should enhance teacher preparation and training in classroom management techniques. Future studies could explore effective classroom management strategies to address behavioral issues and enhance student engagement. Research could also compare pedagogical approaches and evaluate comprehensive professional development programs to improve teacher preparation and instructional quality.
- c) During post-conferences, master teachers faced challenges such as addressing negative feedback and a lack of awareness of new strategies among teachers. Many teachers resisted negative feedback, leading some master teachers to avoid giving it to prevent hurt feelings. Despite this, some master teachers persisted in offering feedback, although they recognized a need for better strategies to motivate and encourage teachers to accept and implement suggestions. Addressing these challenges is essential for fostering professional growth and improving teaching practices. Future studies should explore effective methods for delivering constructive feedback, enhancing teacher awareness of new strategies, and motivating teachers to act on feedback. Additionally, research could focus on training programs for master teachers to handle post-conference challenges and the impact of these interventions on teacher performance and student outcomes.
- d) Because of this study, a suggested initiative involves establishing a program designed to enhance performance by providing guidance, resources, and feedback to individuals or teams, fostering growth,

and achieving exceptional results in the testing process. It's a structured approach to elevating performance and outcomes.

- e) This study provides a significant foundation for further studies. These findings and insights serve as a springboard or reference point for subsequent research efforts. This study adds to the existing body of knowledge and equips future researchers with the tools, insights, and inspiration necessary to conduct their own investigations, thereby advancing the field.

5.0 Contributions of Authors

This is a single-author paper; the author's specific contributions can be stated as follows:

The author conceived the study's idea, designed the research program, conducted the analysis, and was responsible for writing and revising the manuscript. This included developing the SUPPORT program framework, reviewing relevant literature, collecting and analyzing data, and drafting, editing, and finalizing the manuscript for publication.

6.0 Funding

This work received no specific grant from any funding agency.

7.0 Conflict of Interests

The authors declare no conflicts of interest about the publication of this paper.

8.0 Acknowledgment

First and foremost, the researcher would like to thank and praise Heavenly Father for His love and grace for allowing her to finish and making her believe that with Him everything would be possible, as well as for giving her brave heart and mind to surpass the challenges she experienced along the way. "Be still and know that I am God." Indeed, prayers meet heaven.

Dr. Eulalia M. Javier, her adviser, for the undying support, valuable advice, heartfelt words of wisdom, belief in the researcher's ability, confidence boost, and encouragement to prevail despite all the hardships;

Ms. Girlie S. Sonoron, her grammarian editor and qualitative data analyst, for sharing her knowledge and expertise to make this study more reliable and well-written;

Dean Alfredo G. Perez, Dr. Ma. Lorena M. Tagala, and Dr. Enrico D. Jocson, the members of the panel, for their salient and valuable insights, suggestions, and recommendations to make this study more presentable and nicely written;

Most especially, her family, Kean, Clark, and Claide, for inspiring, caring, and loving, and her ever-loving and number one believer, Mr. Erwin R. Andal, for always being a shoulder to lean on and a hand to hold. She would be forever grateful for the prayers, encouragement, patience, and support they gave her.

Lastly, the researcher would also like to acknowledge the City Schools Division of Cabuyao, and the participants in this study, for freely giving their time and effort to data collection throughout this research.

9.0 References

- Alfian, Dr., Wiono, B. B., Imron, A., & Arifin, I. (2019). Development of the supervision model based on clinical approach to increase managerial competence of school principal. *Universal Journal of Educational Research*, 7(11), 2472-2481. <https://doi.org/10.13189/ujer.2019.071126>
- Ampofo, S. Y., Onyango, G. A., & Ogalo, M. (2019). The impact of supervisory role of headmasters on teaching and learning in basic schools. *International Journal of Educational Administration and Policy Studies*, 11(3), 34-48.
- Brown, C. (2020). Setting clear assignment guidelines to improve student time management. *Teaching and Learning in Higher Education*, 18(1), 45-58.
- Butterworth. (2022). What is clinical supervision and how can it be delivered in practice. *Nursing Times*. <https://www.nursingtimes.net/roles/nurse-managers/what-is-clinical-supervision-and-how-can-it-be-delivered-in-practice-17-01-2022/>
- Coimbra, M. D. N., Pereira, A. V., De Oliveira Martins, A. M., & Baptista, C. M. (2020). Pedagogical supervision and change: Dynamics of collaboration and teacher development. *International Journal of Management Science and Business Administration*, 6(4), 55-62. <https://doi.org/10.18775/ijmsba.1849-5664-5419.2014.64.1005>
- Enaigbe, A. P. (2009). The school principal and the challenge of supervision of instruction in Nigerian secondary schools. *International Journal of Educational Administration, Planning and Research*, 1(1), 103-111.
- Francisco, C. D. C., & Celon, L. C. (2020). Teachers' instructional practices and their effects on students' academic performance. *International Journal of Scientific Research in Multidisciplinary Studies*, 6(7), 64-71. <https://eric.ed.gov/?id=ED607985>
- Gezahegn, H., & Mandefro, E. (2019). Analysis of the supervisory support to teachers in primary and secondary schools of Sidama Zone, Ethiopia. *IOSR Journal Of Humanities And Social Science (IOSR-JHSS)*, 24(11), 45-51. <https://www.researchgate.net/publication/337731407>
- Heyi, F. D., & Hordofa, A. K. (2020). Practices of instructional supervision in secondary schools of Bale Zone of Oromia Region. *Journal of Education and Practice*, 11(7), 1-14. <https://pdfs.semanticscholar.org/b166/f8d56af5621b84f9ba37a3ca35eab303e0c9.pdf>
- Jamshidian, S., Yamani, N., Sabri, M. R., & Haghani, F. (2019). Problems and challenges in providing feedback to clinical teachers on their educational performance: A mixed methods study. *Journal of Education and Health Promotion*, 8(11), 1-10. https://doi.org/10.4103/jehp.jehp_189_18
- Jones, B. (2019). Late submissions and their effects on curriculum effectiveness. *Educational Review*, 55(2), 187-201.
- Johnson, E., Anderson, C. K., Snyder, M. L., & Chen, R. J. (2021). The role of feedback in improving incomplete student work. *Educational Psychology Review*, 39(4), 512-527.
- Karasoya, J., & Nehyba, J. (2023). Student-centered teachers' responses to student behavior in the classroom: A systematic review. *Frontiers in Education*, 8, 1-14. <https://doi.org/10.3389/educ.2023.1156530>
- Kiram, S. R., & Guhao Jr, E. S. (2023). Implementation of clinical supervision from the standpoint of school heads. *The International Journal of Business Management and Technology*, 7(2), 487-527. <https://www.theijbmt.com/archive/0950/1744539155.pdf>
- Kurka, A., & Berhanu, E. (2019). Attitude of teachers towards school-based instructional supervision at secondary schools of Wolaita Zone. *International Knowledge Platform*, 9(15), 35-54. <https://doi.org/10.7176/RHSS/9-15-05>
- Mahvar, T., Farahani, M. A., & Aryankhesal, A. (2019). Conflict management strategies in coping with students' disruptive behaviors in the classroom: Systematic review. *PubMed Central*, 6(3), 102-114. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6039817/>
- Mensah, J. A., & Donkoh, K. W. (2020). Challenges and prospects of educational supervision in basic schools: The role of headteachers in Ghana. *Journal of Education and Practice*, 11(24), 134-143.
- Mulatu, M. (2016). The role of educational supervision in enhancing professional development of teachers. *International Journal of Research in Education and Science*, 2(2), 266-276.
- Ngole, J. E., Edzoa, T. F., & Tamanjong, E. N. (2021). Supervision and job performance of secondary school teachers in Kumba I Municipality, Cameroon. *Journal of Education and Practice*, 12(2), 58-69.
- Omigi, R. K. (2019). Influence of head teachers' instructional supervision practices in pupils' performance at Kenya Certificate of Primary Education in Mbita Sub-Country, Kenya. *University of Nairobi*. <http://erepository.uonbi.ac.ke/handle/11295/127461>
- Rashid, M. A. (2001). Problems and challenges of educational supervision: A study of primary schools in Punjab, Pakistan. *Pakistan Journal of Social Sciences*, 1(1), 15-25.
- Robinson, S. (2022). Creating a supportive classroom environment for discussing academic challenges. *Journal of Educational Psychology*, 47(1), 89-102.
- Saddadar, R., Mukherjee, S., & Sikder, D. P. (2023). Documentary analysis on challenges of classroom management. *International Journal of Creative Research Thoughts*, 11(3), 613-622. <https://ijcrt.org/papers/IJCRT2303292.pdf>
- Sari, D. P., Akmalina, R., & Saputera, B. (2020). Effectiveness analysis of clinical supervision models in improving the clinical nurse performance. *International Conference on Business and Social Science*, 1, 248-264. <https://www.researchgate.net/publication/348295170>
- Sayee, J., Takyi, P., & Boateng, P. (2021). Supervisory skills of head teachers and teachers' job performance in public primary schools in the Ho Municipality, Ghana. *European Journal of Education Studies*, 8(8), 238-254.
- Sey, A., Appiah, C. K., & Amoah, K. Y. (2018). Challenges facing head teachers in the management and supervision of instruction in public secondary schools in the Eastern Region, Ghana. *European Journal of Education Studies*, 2(8), 74-90.

- Terra, T., & Berhanu, E. (2019). Practices and challenges of instructional supervision in government secondary schools Wolaita Zone. *International Knowledge Sharing Platform*, 10(13), 37-51. <https://doi.org/10.7176/IJEP/10-13-05>
- Whetton, M. (2009). Educational supervision: Supporting high-quality teaching and learning. *Educational Management Administration & Leadership*, 37(1), 70-89.
- Yonas, V., Rupia, C., & Onyango, D. O. (2023). Classroom management challenges facing in enhancing students' academic achievement in public secondary schools in Tarime District. *East African Journal of Education Studies*, 6(1), 22-37. <https://doi.org/10.37284/eajes.6.1.1048>
- Zadock, A. J. (2022). Instructional supervision practices in Tanzanian public pre-primary classes: Head teachers and pre-primary teachers' perspectives. *Papers in Education and Development (PED)*, 40(2), 152-166. <https://www.ajol.info/index.php/ped/article/view/239784>

Strategies Employed by Senior High School Students in Learning General Mathematics

Jezrel R. Palumar

Foundation University, Dumaguete City, Negros Oriental, Philippines

Author Email: jezrel.palumar@foundationu.com

Date received: June 7, 2024

Date revised: June 27, 2024

Date accepted: July 2, 2024

Originality: 91%

Grammarly Score: 99%

Similarity: 9%

Recommended citation:

Palumar, J. (2024). Strategies employed by senior high school students in learning General Mathematics. *Journal of Interdisciplinary Perspectives*, 2(8), 325-334. <https://doi.org/10.69569/jip.2024.0269>

Abstract. This study aimed to identify the strategies employed by students in learning General Mathematics during the pandemic and to examine the relationship of these strategies with selected variables. A descriptive-correlational research design was utilized, and systematic sampling was employed to select 126 Grade 12 respondents. Validated questionnaires were used to collect data, and statistical analyses including mean, weighted mean, t-test for independent data, Pearson correlation, Mann-Whitney U Test, Kruskal-Wallis Test, and ANOVA were conducted. The findings revealed that the extent of students' utilization of metacognitive, cognitive, and collaborative strategies was "high." Additionally, their academic performance in General Mathematics was found to be at a "satisfactory" level. Further analysis showed that students with outstanding academic standing before the pandemic (a) had a higher extent of utilization of the strategies compared to those with satisfactory and fairly satisfactory standings, and (b) performed better during the pandemic than those with very satisfactory, satisfactory, and fairly satisfactory ratings. However, no significant differences were found in the strategies employed by students when grouped according to sex and strand. Moreover, the extent of strategy utilization did not have a direct relationship with academic performance. These findings suggest a need for further research into additional factors that may influence learning outcomes. Exploring other variables impacting academic success and developing targeted interventions to enhance student performance is recommended.

Keywords: Academic performance; General Mathematics; Senior high school.

1.0 Introduction

Understanding students' learning strategies, especially in Mathematics, is crucial for their overall academic success. Mastery of Math skills is fundamental for Math and other subjects like Science, Social Studies, and even Music and Art (Jameel et al., 2016). The COVID-19 pandemic significantly disrupted traditional educational systems, forcing students and teachers to adapt to new modes of learning and teaching (Busuttil & Camilleri, 2020).

The Philippine government implemented measures to sustain education during the pandemic in response to these challenges. The Department of Education (DepEd) issued DepEd Order No. 12, Series of 2020, which established the Basic Education Learning Continuity Plan (BE-LCP) for the School Year 2020-2021 (Cahapay, 2020). This plan aimed to protect the health, safety, and well-being of students, teachers, and staff while ensuring the continuation of education. Given the diverse learning environments, the DepEd adopted a distance learning approach using Self-Learning Modules (SLMs), available in printed and digital formats. However, these modules posed new challenges, and there were concerns about their effectiveness in teaching General Mathematics.

In addition to SLMs, other modalities, such as online learning through Learning Management Systems (LMS), asynchronous learning, radio-based instruction, and more, were employed to cater to different learning needs.

The rapid shift to these methods highlighted the need for teachers to adapt their instructional strategies to maintain educational quality during the pandemic (Jovanović et al., 2017). Despite these efforts, students struggled to understand some General Mathematics concepts.

Most existing studies have focused on the teaching strategies employed by educators during the pandemic, with less attention given to the learning strategies used by students (Sutarto et al., 2020). This research aims to fill that gap by exploring the strategies employed by Grade 12 students in Mabinay District 2 in learning mathematics. It also examines how the pandemic has altered students' learning styles and why it is important to consider factors such as sex, strand, and academic performance when investigating these strategies. The findings of this study could provide valuable insights into how learning strategies impact student performance and help develop targeted interventions to enhance learning outcomes, regardless of the ongoing challenges posed by the pandemic.

2.0 Methodology

2.1 Research Design

A descriptive-correlational research design is a non-experimental study that aims to describe the characteristics of a population or phenomenon and examine the relationships between variables without manipulating them. This design is particularly useful for understanding how variables naturally occur and interact within a specific context. By providing detailed descriptions and identifying patterns of relationships, it offers insights that can inform further research and practice. In this study, the descriptive-correlational design is appropriate because it allows for a detailed description of the extent of utilization of the strategies in learning General Mathematics and examines the relationships between these strategies and students' academic performance during the pandemic. This approach helps to understand the patterns and associations in the data, providing valuable insights into the factors that may influence learning outcomes without attempting to establish causality. The descriptive-correlational design effectively captures the natural variations and interactions between students' learning strategies and academic performance. Given the context of the COVID-19 pandemic, where traditional learning environments and methods have been disrupted, this design allows researchers to observe how students adapt their learning strategies in real-world settings. The study maintains ecological validity by not manipulating any variables and offers a realistic view of students' learning behaviors and outcomes.

2.2 Research Environment

The study was conducted in Mabinay District 2, Mabinay, Negros Oriental, focusing on the senior high school students from Campanun-an Provincial Community High School, Pantao National High School, and Tara Provincial Community High School. Mabinay District 2 was chosen for this research due to its diverse student population and the availability of various high schools that cater to different socioeconomic backgrounds. This diversity provides a comprehensive view of the strategies employed by students in learning General Mathematics, making the findings more generalizable to other similar educational settings.

Mabinay's educational institutions represent many rural areas in the Philippines, where students face unique challenges, such as limited access to resources and varying levels of instructional support. By selecting this district, the study aims to shed light on how these factors influence the learning strategies of senior high school students in General Mathematics. This setting is particularly relevant given the impact of the COVID-19 pandemic on education, as it provides insights into how students in rural and resource-constrained environments adapt their learning strategies in response to unprecedented disruptions.

2.3 Research Participants

The study's respondents were Grade 12 students from the Humanities and Social Sciences (HUMSS), TVL-Automotive, and TVL-Sugar Processing strands in Mabinay District 2 for the School Year 2022-2023. A systematic sampling technique was employed to select every *n*th individual in the population list to ensure a representative sample. In this study, every second student was chosen as a respondent. The inclusion criteria for selecting respondents included enrolling as a Grade 12 student in one of the specified strands during the designated school year and having complete academic records before and during the pandemic.

2.4 Research Instrument

To collect data, the researcher employed a self-constructed questionnaire and obtained copies of students' average grades in mathematics before and during the pandemic. The questionnaire comprised two sections: the first detailed the students' profiles, including sex, academic strand, and academic performance before and during the pandemic; the second focused on the strategies students used during the pandemic. The questions in the second part were based on the student's current academic situation and the strategies they implemented to improve their skills in General Mathematics during the pandemic. Additionally, the researcher reviewed relevant articles and publications on effective strategies for enhancing mathematical skills, incorporating key insights into the questionnaire. For content validity, the questionnaire was evaluated by three experts. To ensure reliability, a pilot test was conducted with 30 selected Tara Provincial Community High School students, who were not included in the main study sample.

The reliability of the questionnaire items was assessed using Cronbach's alpha, a measure appropriate for survey research where responses are not simply right or wrong. Cronbach's alpha values range from 0 to 1, with values above 0.70 indicating acceptable internal consistency and reliability (McMillan & Schumacher, 2001). The pilot test results indicated strong reliability coefficients: 0.796 for metacognitive strategies, 0.872 for cognitive strategies, and 0.901 for collaborative strategies. These values demonstrate a high level of internal consistency across the different strategy categories, confirming the reliability of the questionnaire for the main study.

2.5 Data Gathering Procedure and Analysis

Following the design hearing, the researcher implemented all corrections and suggestions provided by the panel members. Subsequently, a request letter to conduct the study was submitted to the Schools Division Superintendent of the Division of Negros Oriental, with an endorsement from the dean of Foundation University Graduate School. The signed request was presented to the school principals and the students' respective advisers upon approval. During the questionnaire distribution, the researcher explained the purpose of the study and its significance to the students. The questionnaires were collected immediately after completion. The data were then tallied using MS Excel and Megastat software for analysis and interpretation.

2.6 Ethical Considerations

The researcher meticulously adhered to all necessary ethical considerations throughout the study. Confidentiality was strictly maintained to protect the dignity and privacy of all participants. Comprehensive efforts were undertaken to minimize any potential risks. The study followed the ethical protocols stipulated by the Ethics Committee of Foundation University. Before conducting the study, the researcher sought and received permission from the appropriate authorities, ensuring full compliance with institutional and ethical guidelines.

3.0 Results and Discussion

3.1 Strategies Employed by the Students in Learning General Mathematics

Metacognitive Strategies

Table 1 presents the extent to which students employ metacognitive strategies in learning General Mathematics. It reveals that, generally, the students' extent of utilization of the metacognitive strategies is "high," as indicated by the composite value of 5.52. The students agreed they could read the instructions carefully before completing the learning tasks. This indicates that students are attentive to the instructions provided by their teachers. Additionally, comprehending the instructions beforehand facilitates the accurate and effective completion of tasks.

The table further indicates that students "highly" utilize their metacognitive strategies by (a) evaluating their abilities, (b) considering alternative approaches to solving tasks, (c) adjusting their learning pace and duration, (d) exploring all possible solutions before choosing a final one, (e) solving and comparing problems with previous examples, and (f) gathering relevant and up-to-date information about the lesson content. This indicates that students actively take control of their learning processes, leading to more effective problem-solving and a deeper understanding of lesson content. Consequently, fostering metacognitive strategies can enhance students' overall academic performance and adaptability in various learning contexts.

Table 1. Descriptive statistics of the extent to which students employ the metacognitive strategies in learning General Mathematics (n = 126)

Indicators	Mean	Interpretation	Extent
1. Read the instructions carefully before I start answering my learning task.	6.23	Strongly Agree	Very High
2. Evaluate my ability as a student to complete the learning tasks.	5.70	Agree	High
3. Check my answers to see if there are other ways to solve a mathematical problem.	5.66	Agree	High
4. Adjust my learning speed and duration based on the lesson's content.	5.63	Agree	High
5. Determine whether I have gone for all other possibilities before selecting a final solution.	5.52	Agree	High
6. I assess a problem and often compare it with the problems I have previously solved.	5.43	Agree	High
7. Collect all the relevant and recent information about the lesson's content.	5.38	Agree	High
8. Identify alternative ways of solving math problems.	5.25	Somewhat Agree	Somewhat High
9. Complete my assignments and learning activities within the schedule.	5.21	Somewhat Agree	Somewhat High
10. I follow a strict timetable when studying my math learning tasks.	5.18	Somewhat Agree	Somewhat High
Composite	5.52	Agree	High

Furthermore, the table reveals that the student's ability to (a) identify alternative ways to solve the problem, (b) complete assignments on time, and (c) follow a strict timetable for studying the learning tasks is "somewhat high." Doing assignments on time and following the timeframe in reviewing different learning tasks will help students not to procrastinate. The preceding results suggest that students can effectively assess their knowledge and enhance their learning. Moreover, students use metacognitive strategies extensively, particularly in tasks like careful reading of instructions, self-assessment of abilities, and exploring alternative problem-solving approaches. This indicates a keen awareness of task demands and efficient self-regulation in learning. Nevertheless, although students demonstrate moderate proficiency in time management and alternative problem-solving strategies, targeted support could further boost academic performance and reduce procrastination. These findings underscore the critical role of developing metacognitive skills to optimize learning outcomes in mathematics education. Anthonysamy (2021) highlighted that students employing metacognitive strategies can effectively evaluate their comprehension and improve their learning processes. Additionally, Uppal and Kumar (2020) emphasized that awareness of one's thinking enables effective regulation of learning. Furthermore, Nasution and Edy (2017), as cited by Simorangkir (2018), underscored that leveraging metacognitive skills empowers learners to manage the entire learning process, from planning through execution. Lastly, Muncer et al. (2022) identified a significant correlation between metacognitive abilities and students' mathematical performance, reinforcing the positive impact of these strategies on academic achievement in mathematics.

Cognitive Strategies

Table 2 shows the extent to which students employ cognitive strategies in learning General Mathematics.

Overall, the data reveal a "high" utilization of cognitive strategies by the students in learning General Mathematics, with a composite mean of 5.51.

Table 2. Descriptive statistics of the extent to which students employ the cognitive strategies in learning General Mathematics (n = 126)

Indicators	Mean	Interpretation	Extent
1. Apply my knowledge from my previous activities to my recent ones.	5.72	Agree	High
2. Summarise all the lessons, formulas, and steps in solving a problem for me to have organized notes or references.	5.71	Agree	High
3. Connect my prior knowledge to the new lessons or activities.	5.69	Agree	High
4. Rather than just reading, Think through a topic and decide what I should learn from it.	5.67	Agree	High
5. Determine which concepts I do not understand well.	5.61	Agree	High
6. Study and outline the material to help me organize my thoughts.	5.55	Agree	High
7. Go over my course notes and outline important concepts.	5.51	Agree	High
8. Write summaries of different problems from my notes.	5.39	Agree	High
9. Memorize the formulas and steps for solving math problems.	5.28	Somewhat Agree	Somewhat High
10. Read my course notes and solve various math problems over and over again.	4.98	Somewhat Agree	Somewhat High
Composite	5.51	Agree	High

The data expose that students are "highly" capable of (a) applying their knowledge from previous activities to recent ones, (b) making a summary of the lessons, steps, and formulas to stay organized, (c) connecting prior knowledge to current lessons, (d) deciding what they are supposed to learn, (e) determining not well-understood

concepts, (f) outlining materials to stay organized, (g) outlining important concepts, and (h) writing summaries of different problems. The findings imply that students use their prior knowledge to understand new concepts and can distinguish concepts that need to be learned. Meanwhile, the table also exposes that the student's ability to (a) memorize the formulas and steps in solving math problems and (b) read their course notes and solve various math problems is "somewhat high." This signifies that the students are somewhat aware of the importance of having a list of important concepts and formulas that they can refer to in case problems in understanding new concepts arise.

The above results imply that the students can use their cognitive strategies in learning General Mathematics, as evidenced by their effective application of prior knowledge and organization of learning materials. This suggests a strong ability to connect and integrate new concepts with existing knowledge. However, while students demonstrate a somewhat high capability in memorizing formulas and problem-solving steps, there is room for improvement. These findings underscore the importance of enhancing cognitive strategies to optimize learning outcomes in mathematics education further.

Montague et al. (2014) emphasized that cognitive strategies significantly enhance students' mathematical learning. Zhu (2015) supported this by suggesting that cognitive strategies assist students, particularly those facing challenges in mathematics, in excelling academically. Moreover, Semeraro et al. (2020) identified overall cognitive ability as a critical predictor of success in mathematics achievement. Similarly, Sales (2024) highlighted the influential role of cognitive strategies in shaping students' mathematical learning experiences. These strategies enhance mathematical skills and enable effective self-assessment of performance. Furthermore, cognitive strategies facilitate learning by promoting essential skills such as reading comprehension, computation, and problem-solving. This collective evidence underscores the pivotal role of cognitive strategies in facilitating effective learning and mastery of mathematics.

Collaborative Strategies

Table 3 shows the extent to which students employ collaborative strategies in learning General Mathematics. Synthesizing the results, the data depicts that the students "highly" utilize the collaborative strategies, which is evident in the values of the composite mean of 5.73.

Table 3. Descriptive statistics of the extent to which students employ the collaborative strategies in learning General Mathematics (n = 126)

Indicators	Mean	Interpretation	Extent
1. Look back and reflect on my responses with peers.	5.98	Agree	High
2. Ask for assistance from my parents/ guardian/siblings when I need to.	5.88	Agree	High
3. Ask for clarifications, examples about the materials, or verification about the task from my siblings, parents, guardians, and other relatives or neighbours who did finish their studies.	5.87	Agree	High
4. Be in a group and discuss math problems to gain new techniques in solving the task.	5.82	Agree	High
5. Ask for feedback from my adviser/subject teacher to guide me in completing my learning task.	5.78	Agree	High
6. Ask for assistance from an individual/s who knows Mathematics or someone with a degree in math.	5.66	Agree	High
7. Reduce my anxiety by using mental techniques that make me feel competent to do the learning task with peers.	5.62	Agree	High
8. Do collaborative learning with friends/classmates face-to-face or online.	5.61	Agree	High
9. Collaborate with classmates to discuss problems, share different approaches, and collectively find solutions to enhance our understanding and problem-solving skills.	5.58	Agree	High
10. Work together with my classmates to solve the task during our free time.	5.48	Agree	High
Composite	5.73	Agree	High

The data indicate that the students are "highly" able to (a) look back and reflect on their responses with their peers, (b) seek assistance and clarifications about their tasks from family members and other individuals knowledgeable in math (c) be in group and discuss and learn math problems, (d) ask feedback from teachers, (e) use mental techniques to reduce anxiety, (f) do collaborative learning with peers, (g) provide personal motivation, and (h) work with classmates to solve tasks during free time.

The findings suggest that students effectively utilize collaborative strategies and social skills in learning General Mathematics. They share their knowledge of the subject and demonstrate a willingness to accept and seek

feedback and assistance from teachers, parents, and peers. This supportive network motivates students to engage more deeply in their learning. Algani (2021) emphasized that collaborative strategies foster a conducive learning environment, significantly enhancing students' motivation and ensuring effective learning. Similarly, Karlsson et al. (2021) found that cooperative learning notably improves students' problem-solving skills. Their study revealed that students with higher levels of social acceptance and strong friendships achieved better results in mathematical problem-solving tasks, highlighting that the quality of social interactions within the group is crucial for maximizing students' mathematical abilities.

Similarly, Warsah et al. (2021) demonstrated that collaborative learning significantly enhances students' critical thinking skills. Additionally, students reported that collaborative learning positively impacted their emotional awareness, learning motivation, cognitive development, and open-mindedness. Ridwan and Hadi (2022) also determined that cooperative learning significantly influences students' mathematics learning outcomes. Moreover, Møgelvang and Nylén (2023) revealed that incorporating collaborative learning elements significantly boosts students' academic performance. They found that students benefit from enhanced attitudes towards learning, improved generic skills, and better psychological health.

3.2 Academic Performance of the Students in General Mathematics

Table 4 shows the academic performance of the students in General Mathematics. The results indicate that Senior High School students' academic performance in General Mathematics is "Satisfactory," with an average rating of 83.94%.

Table 4. Academic performance of the students in General Mathematics (n = 126)

Rating	Verbal Description	Frequency	Percentage
90% - 99%	Outstanding	14	11.11
85% - 89%	Very Satisfactory	27	21.43
80% - 84%	Satisfactory	73	57.94
75% - 79%	Fairly Satisfactory	12	9.52
Mean = 83.94%	(Satisfactory)		
SD = 4.50			

The data shows that most students fall within the "Satisfactory" range, between 80% and 84%. Additionally, 21.43% of the students achieved a "Very Satisfactory" level, and 11.11% reached an "Outstanding" level. Conversely, 9.52% of the students were at the "Fairly Satisfactory" level. These findings suggest that most students have acquired fundamental knowledge and skills, developed core understanding, and can independently apply these abilities through authentic performance tasks (DepEd Order No. 8, s. 2015).

Padernal and Diego (2020) found that senior high school students exhibited average academic performance in mathematics, regardless of their school of origin or entrance examination scores. In parallel, Casinillo et al. (2020) emphasized that students' attitudes toward mathematics significantly shape their learning outcomes and academic achievements. Several factors substantially influence academic success, including parental education and income levels, availability of textbooks, access to libraries and practical laboratories, provision of meals, and the quality of teachers (Brew et al., 2021). Students with higher academic performance typically have greater exposure to these factors, underscoring their impact on educational outcomes. Conversely, Spitzer and Musslick (2021) reported an improvement in students' mathematical performance during the school shutdown in 2020 compared to the previous year. This improvement suggests that external conditions and learning environments can significantly influence students' academic performance.

3.3 Relationship Between the Strategies Employed by the Students and Their Academic Performance

Table 5 presents the data examining the correlation between students' employed strategies and academic performance. The results indicate that all p-values exceed the predetermined significance level of (0.05). Consequently, there is insufficient evidence to reject the null hypothesis, suggesting that students' strategies during the pandemic have no significant impact on their academic performance. This observation can be attributed to the widespread effects of the pandemic, as individuals are still undergoing significant adjustment. The disruptions caused by the pandemic likely reduced the effectiveness of these strategies. Therefore, it

highlights the need for educational systems to adopt broader, more holistic approaches to support student learning and adjustment during such unprecedented times.

Table 5. Analysis for the relationship between the strategies employed by the students and their academic performance (n = 126)

Variables Correlated to Academic Performance	r_s	p-value	Decision	Remark
Metacognitive Strategies	0.092	0.305	Fail to reject H_{01}	Not significant
Cognitive Strategies	0.136	0.129	Fail to reject H_{01}	Not significant
Collaborative Strategies	0.008	0.982	Fail to reject H_{01}	Not significant

Level of significance = 0.05

Neroni et al. (2019) highlighted that effective time and effort management emerged as crucial factors positively influencing academic performance in modular distance learning. Moreover, Gomes et al. (2020) emphasized the importance of individual, school, and family-related factors in predicting mathematics achievement. Their study identified how personal attributes, educational environment, and family background collectively influence students' performance in mathematics. However, Güner and Erbay (2021) found that metacognitive skills are crucial to students' problem-solving success. Students with solid metacognitive skills are good at solving problems correctly by choosing the right strategies, using mathematical notations properly, and applying logical reasoning. On the other hand, students with weak metacognitive skills face difficulties in understanding the problem, picking the right strategies, and finding the correct answers. These findings highlight the importance of metacognitive skills in improving students' problem-solving abilities in mathematics.

3.4 Difference in the Strategies Employed by the Students in Learning General Mathematics when Grouped According to Their Profile

Table 6 presents the results of the statistical analyses conducted to examine differences in employing the strategies based on the students' profiles.

Table 6. Analysis for the difference in the strategies employed by the students when grouped according to their profile (n = 126)

Variables	N	Mean Rank	Median	U-value	p-value	Decision	Remark
Sex							
Male	54	63.6	5.67	1939	0.984	Fail to reject H ₀₂	Not significant
Female	72	63.4	5.65				
Variables	N	Mean Rank	Median	H-Value	p-value	Decision	Remark
Strand							
HUMSS	95	65.5	5.67	4.24	0.120	Fail to reject H ₀₂	Not significant
TVL Automotive	16	46.2	5.22				
TVL Sugar Processing	15	69	5.85				
Academic Standing Before the Pandemic							
(1) Outstanding	8	99.8	6.33	9.18	0.027		
(2) Very Satisfactory	20	66.5	5.68				
(3) Satisfactory	55	61.5	5.65				
(4) Fairy Satisfactory	43	58.0	5.57				

Post Hoc Analysis

(1) vs (2): $p = 0.039$ (not significant)

(1) vs (3): $p = 0.003$ (significant)

(1) vs (4): $p = 0.008$ (significant)

(2) vs (3): $p = 0.596$ (not significant)

(2) vs (4): $p = 0.412$ (not significant)

(3) vs (4): $p = 0.569$ (not significant)

Significant

Mann-Whitney U Test and Kruskal Wallis Test (H) at 0.05 Level of significance with Bonferroni correction ($0.05/6 = 0.008$)

Using the Mann-Whitney U Test for sex and Kruskal Wallis Test for strand, these results are revealed: ($p = 0.984 > \alpha = 0.05$) for sex and ($p = 0.120 > \alpha = 0.05$) for strand. This means that there is no significant difference in the strategies employed by the students when grouped according to their sex and strand. Lanuza et al. (2022) discovered no notable disparity in the use of learning strategies in learning mathematics when students are categorized according to sex. However, Zhao et al. (2022) identified subtle distinctions in cognitive development and the consistent adoption of preventive behaviors between genders. In addition, Dweck and Yeager (2019) noted

that mindsets can define a person's subjective beliefs about whether a particular attribute, such as intelligence, is fixed or can be shaped and developed based on gender.

Using the Kruskal-Wallis Test, it was determined that a significant difference ($p = 0.027 < \alpha = 0.05$) occurs in how students employ strategies when categorized based on their academic performance before the pandemic. To test which group or group of students has a higher extent of utilization of strategies, a post hoc analysis was applied using the Mann-Whitney U test with Bonferroni correction (adjusted $\alpha = 0.008$). Findings reveal that (a) students with exceptional pre-pandemic academic standing exhibit greater strategy utilization than those with satisfactory ratings, and (b) students with outstanding pre-pandemic academic standing employ strategies more extensively than those with satisfactory ratings. Similar levels of strategy utilization were observed among the remaining groups in learning General Mathematics. The non-parametric test is used since the variable (strategies employed) is measured on an ordinal scale, and the data are not normally distributed.

Kim et al. (2023) conducted an in-depth analysis of various self-regulation strategies, including cognitive and metacognitive techniques, to understand their influence on academic performance. The study concluded that students who achieve higher academic results are more adept at employing these self-regulation strategies effectively. This suggests a significant correlation between the strategic use of cognitive and metacognitive techniques and superior academic performance, emphasizing the importance of these strategies in academic success. Additionally, Darkwa and Antwi (2021) disclosed that before the pandemic, teaching and learning strategies were more effective than during the pandemic.

3.5 Difference in the Academic Performance of the Students when Grouped According to Their Profile

Table 7 shows the results of the statistical analyses conducted to examine differences in the student's academic performance when grouped according to their profile.

Table 7. Analysis for the difference in the academic performance of the students when grouped according to their profile (n = 126)

Variables	N	Mean	t-value	p-value	Decision	Remark
Sex						
Male	54	82.72	2.703	0.008	Reject H _{o2}	Significant
Female	72	84.86				
Strand						
HUMSS	95	84.11	0.89	0.413	Fail to reject H _{o2}	Not significant
TVL Automotive	16	82.56				
TV Sugar Processing	15	84.40				
Academic Standing Before the Pandemic						
(5) Outstanding	8	93.63	28.69	0.000	Reject H _{o2}	Significant
(6) Very Satisfactory	20	86.35				
(7) Satisfactory	55	83.09				
(8) Fairly Satisfactory	43	82.12				
Post Hoc Analysis						
(1) vs (2): p = 0.000 (significant)						
(1) vs (3): p = 0.000 (significant)						
(1) vs (4): p = 0.000 (significant)						
(2) vs (3): p = 0.027 (significant)						
(2) vs (4): p = 0.002 (significant)						
(3) vs (4): p = 0.831 (not significant)						

t-test and ANOVA at a 5% level of significance

The data reveals a significant difference ($p = 0.008 < \alpha = 0.05$) in the performance of the male and female students in favor of the latter group. This suggests that gender may influence academic outcomes. Xie et al. (2023) observed that female students generally receive higher ratings, experience lower levels of mathematical anxiety, display greater interest in the subject, and exhibit higher confidence in math classes than their male counterparts. Contrarily, Capinding (2022) reported no significant differences between male and female students regarding their overall academic performance. In contrast to these findings, Rodriguez et al. (2020) highlighted gender disparities in primary education, particularly in Mathematics self-concept, self-efficacy, and interest. Their study indicates boys often demonstrate more favorable motivational profiles in mathematics than girls.

It is also reflected that using ANOVA, no significant difference ($p = 0.413 > \alpha = 0.05$) exists in the students' performances when grouped according to their strands. This may connote that the performances of these students

in HUMMS, TVL Automotive, and TVL Sugar Processing do not vary. This finding suggests that the academic strand a student belongs to does not play a crucial role in influencing their academic outcomes, indicating that different strands do not cater to varied academic strengths and aptitudes among students. A parametric statistical tool is used since the variable (academic performance) is measured on a ratio scale, and the data are normally distributed. The finding opposes the claim of Alova and Alova (2022) that students who belong to the academic strand perform better than students from the TVL strand. In addition, Almerino et al. (2020) demonstrated a significant variation in students' academic performance when analyzed according to their respective academic strands.

Furthermore, the data divulge that there is a significant difference ($p = 0.000 < \alpha = 0.05$) in the performances of the students when grouped according to their academic standing before the pandemic. To test which group is better than the other, a post hoc analysis (Tukey HSD Test) was applied. It reveals that (a) students who were outstanding before the pandemic are better than those who are classified as very satisfactory, satisfactory, and fairly satisfactory; and (b) students who are categorized as very satisfactory before the pandemic are better than those who are labeled as satisfactory and fairly satisfactory. Nevertheless, no significant difference exists between those students who are identified as satisfactory and those who are categorized as fairly satisfactory. Blomberg et al., as cited by Saya-ang (2023), pointed out that prior performance is a powerful prerequisite for learning outcomes and mathematical performance. Additionally, Zakariya et al. (2023) highlighted the beneficial impact of prior mathematics knowledge on students' academic performance. Their findings underscore the importance of a solid foundation in mathematics as a significant predictor of future success in the subject. Furthermore, Kania et al. (2023) revealed that a strong mathematical background correlates positively with enhanced critical thinking skills within the discipline.

4.0 Conclusions

In exploring the use of metacognitive, cognitive, and collaborative strategies in learning General Mathematics during the pandemic, this study reveals that while students can employ these strategies, their utilization is suboptimal, resulting in average academic performance. External factors, such as students' physical and emotional conditions during questionnaire administration, likely influenced these outcomes. The challenges of adapting to remote learning and pandemic-related disruptions further impeded students' full engagement with these strategies. Factors like stress, anxiety, fatigue, distractions, and inadequate study environments may have compromised their effectiveness.

Notably, students who previously struggled with mathematics faced heightened difficulties in independent learning due to insufficient foundational knowledge for grasping advanced concepts. This underscores the necessity for tailored interventions to address these specific needs. By enhancing strategy utilization and mitigating these challenges, there exists the potential to improve academic outcomes and enrich the overall Mathematics learning experience, especially during crises like the pandemic.

This suggests that educators and policymakers should consider personalized interventions, such as targeted tutoring and improved learning environments, to better support students. This would also highlight the need for future researchers to integrate variables like stress and learning contexts to enhance understanding of strategy effectiveness. However, this study acknowledges limitations, including uncontrollable external factors, which necessitate cautious interpretation of results. Future researchers may consider investigating additional influences on learning outcomes, such as socioeconomic status and parental support, through longitudinal studies and experimental research aimed at optimizing strategy use across diverse learning settings.

5.0 Contributions of Authors

This study has a single author and his adviser reviewed and approved the final version of this paper.

6.0 Funding

This research is not funded by any funding agency.

7.0 Conflict of Interests

The author declared that he has no conflicts of interest as far as this study is concerned.

8.0 Acknowledgment

The author expresses deep gratitude to his adviser, the statistician, and Foundation University for their invaluable collaboration and support. Their insightful suggestions and guidance were crucial in making this research paper possible.

9.0 References

- Abd Algani, Y. M. (2021). The effect of the collaborative learning technique on students' educational performance in math. *Journal for the Mathematics Education and Teaching Practices*, 2(2), 93-103.
- Almerino Jr, P. M., Ocampo, L. A., Abellana, D. P. M., Almerino, J. G. F., Mamites, I. O., Pinili, L. C., & Peteros, E. D. (2020). Evaluating the academic performance of K-12 students in the Philippines: A standardized evaluation approach. *Education Research International*, 2020(1), 8877712. doi:10.1155/2020/8877712
- Alova, C. A. R., & Calanza-Alova, I. M. (2022). Academic performance in general mathematics of grade 11 students: A brief report. Online Submission. doi:10.13140/RG.2.2.31975.11685
- Anthonyasamy, L. (2021). The use of metacognitive strategies for undisrupted online learning: Preparing university students in the age of pandemic. *Education and Information Technologies*, 26(6), 6881-6899.
- Brew, E. A., Nketiah, B., & Koranteng, R. (2021). A literature review of academic performance, an insight into factors and their influences on academic outcomes of students at senior high schools. *Open Access Library Journal*, 8(6), 1-14. doi:0000-0002-6516-5725
- Busuttil, L., & Camilleri, R. (2020). Teachers' response to the sudden shift to online learning during COVID-19 pandemic: Implications for policy and practice. Retrieved from ResearchGate
- Cahapay, M. B. (2020). Philippine basic education learning continuity plan: Creating space for indigenous peoples toward inclusive post-COVID-19 education. *International Journal of Pedagogical Development and Lifelong Learning*, 2(1). doi:10.30935/ijpdll/9294
- Capinding, A. T. (2022). Impact of modular distance learning on high school students' mathematics motivation, interest/attitude, anxiety, and achievement during the COVID-19 pandemic. *European Journal of Educational Research*, 11(2), 917-934.
- Casinillo, L., Palen, M., Casinillo, E., & Batidor, P. (2020). Assessing senior high students' learning experiences in mathematics. *Indonesian Journal of Educational Studies*, 23(1).
- Darkwa, B. F., & Antwi, S. (2021). From classroom to online: Comparing the effectiveness and student academic performance of classroom learning and online learning. *Open Access Library Journal*, 8(7), 1-22. doi:10.4236/oalib.1107597
- Department of Education. (2015). DepEd Order No. 8, series of 2015: Policy guidelines on classroom assessment for the K to 12 basic education programs.
- Department of Education. (2020). DepEd Order No. 12, series of 2020: Adoption of the basic education learning continuity plan for the school year 2020-2021 in light of the COVID-19 public health emergency.
- Gomes, C. M. A., Fleith, D. D. S., Marinho-Araujo, C. M., & Rabelo, M. L. (2020). Predictors of students' mathematics achievement in secondary education. *Psicologia: Teoria e Pesquisa*, 36, e3638. doi:10.1590/0102.3772e3638
- Güner, P., & Erbay, H. N. (2021). Metacognitive skills and problem-solving. *International Journal of Research in Education and Science*, 7(3), 715-734. doi:10.46328/ijres.1594
- Jameel, H. T., Ali, H. H., & Phil, M. (2016). Causes of poor performance in mathematics from teachers, parents, and students' perspective. *American Scientific Research Journal for Engineering, Technology, and Sciences*, 15(1), 122-136. Retrieved from asrjetsjournal.org
- Jovanović, J., Gašević, D., Dawson, S., Pardo, A., & Mirriah, N. (2017). Learning analytics to unveil learning strategies in a flipped classroom. *The Internet and Higher Education*, 33(4), 74-85. doi:10.1016/j.iheduc.2017.02.001
- Kania, N., Fitriani, C., & Bonyah, E. (2023). Analysis of students' critical thinking skills based on prior knowledge mathematics. *International Journal of Contemporary Studies in Education*, 2(1). doi:10.30880/ijcse.v2i1.248
- Kim, Y. E., Zepeda, C. D., & Butler, A. C. (2023). An interdisciplinary review of self-regulation of learning: Bridging cognitive and educational psychology perspectives. *Educational Psychology Review*, 35(3), 92. doi:10.1007/s10648-023-09800-x
- Klang, N., Karlsson, N., Kilborn, W., Eriksson, P., & Karlberg, M. (2021, August). Mathematical problem-solving through cooperative learning – the importance of peer acceptance and friendships. In *Frontiers in Education* (Vol. 6, p. 710296). Frontiers. doi:10.3389/educ.2021.710296
- Lanuza, M. H., Hilario, F. F., Arroyo, A. M., & Lara, M. N. (2022). Gallery walk: The strategy in improving mathematics performance of the SHS in different strands of K to 12. *World Wide Journal of Multidisciplinary Research and Development*, 8(09), 5-13.
- Møgelvang, A., & Nylén, J. (2023). Co-operative learning in undergraduate mathematics and science education: A scoping review. *International Journal of Science and Mathematics Education*, 21(6), 1935-1959. doi:10.1007/s10763-022-10331-0
- Montague, M., Krawec, J., Enders, C., & Dietz, S. (2014). The effects of cognitive strategy instruction on math problem solving of middle-school students of varying ability. *Journal of Educational Psychology*, 106(2), 469. doi:10.1037/a0035176
- Muncer, G., Higham, P. A., Gosling, C. J., Cortese, S., Wood-Downie, H., & Hadwin, J. A. (2022). A meta-analysis investigating the association between metacognition and math performance in adolescence. *Educational Psychology Review*, 34(1), 301-334. doi:10.1007/s10648-021-09620-x
- Neroni, J., Meijjs, C., Gijsselaers, H. J., Kirschner, P. A., & de Groot, R. H. (2019). Learning strategies and academic performance in distance education. *Learning and Individual Differences*, 73, 1-7. doi:10.1016/j.lindif.2019.04.007
- Padernal, R. E., & Diego, C. V. (2020). Academic performance of senior high school students in pre-calculus. *Philippine Social Science Journal*, 3(2), 69-70. doi:0000-0002-6516-5725
- Ridwan, M. R., & Hadi, S. (2022). A meta-analysis study on the effectiveness of a cooperative learning model on vocational high school students' mathematics learning outcomes. *Participatory Educational Research*, 9(4), 396-421. doi:10.17275/per.22.97.9.4
- Rodriguez, S., Regueiro, B., Piñeiro, L., Estévez, I., & Valle, A. (2020). Gender differences in mathematics motivation: Differential effects on performance in primary education. *Frontiers in Psychology*, 10, 3050. doi:10.3389/fpsyg.2019.03050
- Sales, S. L. T. (2024). Dimensionality of strategies in learning mathematics among engineering students: An exploratory factor analysis. *TWIST*, 19(1), 445-453. doi:10.5281/zenodo.10049652#111
- Saya-ang, R. (2023). Blended learning approach: Its effectiveness in teaching.
- Semeraro, C., Giofrè, D., Coppola, G., Lucangeli, D., & Cassibba, R. (2020). The role of cognitive and non-cognitive factors in mathematics achievement: The importance of the quality of the student-teacher relationship in middle school. *PLOS ONE*, 15(4), e0231381.
- Simorangkir, D. (2018). The effect of online learning on students' metacognitive ability in mathematics learning. Retrieved from ResearchGate
- Spitzer, M. W. H., & Musslick, S. (2021). Academic performance of K-12 students in an online-learning environment for mathematics increased during the shutdown of schools in wake of the COVID-19 pandemic. *PLOS ONE*, 16(8), e0255629. doi:10.1371/journal.pone.0255629
- Sutarto, S., Sari, D. P., & Fathurrochman, I. (2020). Teacher strategies in online learning to increase students' interest in learning during COVID-19 pandemic. *Jurnal Konseling Dan Pendidikan*, 8(3), 129-137. doi:10.29210/147800
- Uppal, N., & Kumar, A. (2020). Promoting metacognitive learning strategies: A necessity during pandemic. *DRSR*, 10(11), 30-5. Retrieved from ResearchGate
- Warsah, I., Morganna, R., Uyun, M., Afandi, M., & Hamengkubuwono, H. (2021). The impact of collaborative learning on learners' critical thinking skills. *International Journal of Instruction*, 14(2), 443-460.
- Xie, F., Yang, Y., & Xiao, C. (2023). Gender-math stereotypes and mathematical performance: The role of attitude toward mathematics and math self-concept. *European Journal of Psychology of Education*, 38(2), 695-708. doi:10.1007/s10212-022-00631-y
- Zakariya, Y. F., Nilsen, H. K., Bjørkestøl, K., & Goodchild, S. (2023). Analysis of relationships between prior knowledge, approaches to learning, and mathematics performance among engineering students. *International Journal of Mathematical Education in Science and Technology*, 54(6), 1015-1033. doi:10.1080/0020739X.2021.1984596
- Zhao, Y., Ding, Y., Shen, Y., & Liu, W. (2022). Gender difference in psychological, cognitive, and behavioral patterns among university students during COVID-19: A machine learning approach. *Frontiers in Psychology*, 13, 772870. doi:10.3389/fpsyg.2022.772870
- Zhu, N. (2015). Cognitive strategy instruction for mathematical word problem-solving of students with mathematics disabilities in China. *International Journal of Disability, Development and Education*, 62(6), 608-627. doi:10.1080/1034912X.2015.1077935.

Fatigue Severity and Psychological Well-Being of Junior Medical Interns as Mediated by Rumination

Kristyl Joyce V. Pascubillo*, Geraldine F. Santos

Polytechnic University of the Philippines, Manila City, Philippines

*Corresponding Author Email: kvpascubillow@gmail.com

Date received: June 15, 2024

Date revised: June 28, 2024

Date accepted: July 2, 2024

Originality: 91%

Grammarly Score: 99%

Similarity: 9%

Recommended citation:

Pascubillo, K.J., Santos, G. (2024). Fatigue severity and psychological well-being of junior medical interns as mediated by rumination. *Journal of Interdisciplinary Perspectives*, 2(8), 335-344.

<https://doi.org/10.69569/jip.2024.0281>

Abstract. This study investigated the psychological well-being of junior medical interns in the Philippines as they transitioned from medical school to hospital clerkships. The research aimed to understand the mediating role of rumination in the relationship between fatigue severity and psychological well-being among these interns. A cross-sectional study was conducted across 33 medical schools in the Philippines, with 504 junior medical interns participating between May and September 2023. Participants completed questionnaires with demographic information and standardized scales measuring fatigue severity, rumination, and psychological well-being. The results showed that the interns experienced severe levels of fatigue ($M = 45.90$), moderate levels of psychological well-being ($M = 57.56$), and above-normal levels of rumination ($M = 53.80$). All three variables were significantly correlated with each other ($p < 0.01$). Mediation analysis revealed that rumination significantly mediated the relationship between fatigue severity and psychological well-being ($B = 0.125$, $SE = 0.062$, $p = 0.045$). These findings suggest that interventions targeting rumination may be beneficial in improving the psychological well-being of junior medical interns during their transition from medical school to hospital clerkships.

Keywords: Fatigue severity; Psychological well-being; Rumination; Mediation analysis; Junior Medical Interns.

1.0 Introduction

Medical students must render clerkship as part of their requirements to become licensed Doctors of Medicine. The clinical clerkship year refers to medical students' final phase of formal education (Capinpuyan & Miguel, 2019), during which they gain hands-on experience in hospital settings. During this time, students were deployed to various hospitals and assigned duties under the supervision and instruction of physician assistants, senior residents, and attending physicians. The clerkship year allowed medical students to perform clinical tasks and care for actual patients as part of consolidating their medical knowledge and training before graduation. It is the last phase of the basic training of the physician, and satisfactory completion of the 12-month clerkship/internship was a requirement for taking the Physician Licensure Exam (PLE) (Commission on Higher Education, 2016).

During their clinical clerkship year, medical students' time commitments varied as they rotated through different healthcare specialties and hospitals that offered services 24 hours a day, seven days a week. In the standard medical education model in the Philippines, teaching occurred primarily in a classroom or school setting for the first three years of the medical program. However, clinical education was conducted within hospital environments for the final two years. Thus, clerkship duty was a big adjustment for junior medical interns concerning their psychological well-being since their first three years were conducted in regular medical school and in the daytime.

Junior medical interns rendering their clerkships at matched hospitals experience lots of pressure. Numerous studies found that fatigue was prevalent among medical students and healthcare workers and caused negative impacts on them (O'Marr et al., 2022; Jezzini-Martinez et al., 2021; Kajjimu et al., 2021). The demands of internships or clerkships at hospitals also negatively affected the psychological well-being of junior medical interns, leading to stress (Zdun-Ryżewska et al., 2021), depression, and anxiety (Sagherian et al., 2023). Rumination has been established as a contributing factor to developing mental health issues among junior medical interns (Hong et al., 2021).

The study investigated the intricate relationship between fatigue severity, psychological well-being, and rumination among junior medical interns during their hospital clerkship. This research is crucial as it addresses the pressing issue of mental health among medical interns (Arrogante & Aparicio-Zaldivar, 2020), shedding light on the potential mediating role of rumination in the context of their psychological well-being. The paper presented the following sufficient reasons that supported the conduct of the study: (1) The relevance of this research problem is underscored by the existing literature, which has highlighted the challenges faced by medical interns, including high levels of fatigue (Alolabi et al., 2022) and potential psychological distress (Liu et al., 2020); (2) There is a need to fill the key research gap calling for further investigation into wellness programs and interventions to reduce student stress among junior medical interns, coping strategies specifically targeting rumination, and preventative measures for severe fatigue (Klein & McCarthy, 2022); and (3) Most importantly, the results would provide a construction of an intervention program to help junior medical interns adapt to the demands of clerkship, as well as to provide better clerkship programs offered by hospitals.

2.0 Methodology

2.1 Research Design

A cross-sectional study was conducted from May to September 2023.

2.2 Research Participants

Junior medical interns were selected at the time of the study. The inclusion criteria were: (1) medical students who were enrolled in one of the medical schools in the Philippines; (2) must be 24-28 years old; (3) doing their clerkship at their matched hospitals; and (3) voluntary participation in the survey. Exclusion criteria were (1) not enrolled during the time of the data gathering period, (2) interns that were not in their last year of medical study, and (3) incomplete or insufficiently answered questionnaires. Participation in the study is voluntary, and participants could exit the questionnaire should they feel uncomfortable. Informed consent was obtained from the participants before proceeding with the survey. The Data Privacy Act was also presented, and participants were thoroughly informed about these ethical principles during the survey's introduction, ensuring understanding and compliance with the Declaration of Helsinki.

2.3 Research Instrument

For the researchers to obtain the desired data from junior medical interns, the researcher of this study used an online questionnaire to collect the necessary demographic profile information from the respondents. The questionnaire consisted of the junior medical intern's profile (gender, age, medical school name, public/private hospital for clerkship, and duration of night shift hours). This was followed by a set of entirely standardized questionnaires consisting of the Fatigue Severity Scale (Krupp et al., 1989), the Psychological Well-Being (PWB) Scale (Ryff, 1989), and the Ruminative Responses Scale (Nolen-Hoeksema & Morrow, 1991).

The Fatigue Severity Scale (Krupp et al., 1989) consists of 9 items. Participants responded to statements along a 7-point Likert scale. FSS has also been confirmed in previous studies, and its test-retest reliability has been calculated as 0.78 to 0.95 (Hossein Pour et al., 2020), which is deemed excellent (Matheson, 2019). Further, it shows high degrees of internal consistency ($\alpha = 0.949$) (Rosti-Otajärvi et al., 2017). The minimum possible score is 9, and the maximum possible score is 63. A greater numerical score on the FSS indicates a higher level of fatigue severity, as reported by the individual. Scores of 36 or more indicate elevated levels of fatigue, wherein an FSS score of ≥ 36 (an average of ≥ 4 across the nine questions) can be labelled as severe fatigue. In contrast, mild/moderate fatigue is defined as $FSS < 36$ (Kamudon et al., 2021).

The 18-item Psychological Well-Being (PWB) (Ryff, 1989) scale was used, which employs a 7-point Likert response format. The study conducted by Lee, Sun, and Chiang (2019) showed that there was a statistically significant positive correlation found between perceived health and PWB scores ($r = 0.20$, $p < 0.001$). This provided evidence that the 18-item short-form PWB scale demonstrates acceptable criterion validity. Additionally, this study's 18-item questionnaire demonstrated high internal consistency, with a Cronbach's alpha reliability coefficient of 0.88. The PWB scale typically ranges from 18-126 total scores, with higher scores indicating greater well-being (Raziq et al., 2023).

The Ruminative Responses Scale (Nolen-Hoeksema & Morrow, 1991) Scale-Short Form is a four-point scale. It has demonstrated good internal consistency ($\alpha = 0.89$) and correlates strongly ($r = 0.62$) to depressed mood (Nolen-Hoeksema & Morrow, 1991). The lowest possible score is 22, and the highest possible score is 88. A higher score indicates a higher tendency to ruminate (Andersen et al., 2023).

2.4 Data Gathering

Data was collected using an online survey platform. The links to the online surveys were disseminated using social media platforms like Facebook, Twitter, LinkedIn, and Reddit. The researcher also asked for help from acquaintances, faculty, and clerkship coordinators from medical schools in disseminating the online surveys. The posts published on online platforms contained brief yet concise captions regarding the study. The entire survey had 54 items, including demographic questions, a Fatigue Severity Scale, a Ruminative Responses Scale, and a Psychological Well-Being (PWB) Scale, which can be answered for 10-15 minutes. Data were collected from May 18, 2023, to September 29, 2023. Lastly, the gathered data were scored and interpreted.

2.5 Data Analysis

The researcher employed IBM SPSS Statistics version 25 with a PROCESS macro ver. four extensions to analyze the data. The statistical methods utilized include descriptive statistics such as mean and standard deviation and correlation analysis through the Pearson-r coefficient. Further, a simple mediation analysis was carried out. The researcher utilized the kurtosis measure to evaluate the quantitative variables to detect any potential outliers in the data. The Kolmogorov-Smirnov and Shapiro-Wilk tests were also used to assess the normality of the data. The Variance Inflation Factor (VIF) was computed to check for multicollinearity.

The researchers used mean and standard deviation to analyze the level of fatigue severity through the Fatigue Severity Scale, level of psychological well-being through the 18-item Psychological Well-Being Scale, and level of rumination through the Ruminative Responses Scale-Short Form. The researchers employed Pearson's correlation coefficient (r) to examine the relationships between the three variables: (1) fatigue severity and psychological well-being, (2) fatigue severity and rumination, and (3) psychological well-being and rumination. PROCESS Macro, specifically simple mediation analysis, was performed to test whether rumination mediates the relationship between fatigue severity and the psychological well-being of medical interns during their night clerkship at hospitals.

2.6 Ethical consideration

Ethical considerations were of utmost importance in this study. The author obtained approval or Ethics Review Clearance Certification from the Research Ethics Board of Polytechnic University of the Philippines to ensure that all data collected were handled confidentially and that the study adhered to the prescribed ethical standards in research conduct. Informed consent was also gathered for every participant before proceeding with the study.

3.0 Results and Discussion

3.1 Participant's Sociodemographic Characteristics

The respondents of this study were individuals who had recently entered the medical field in internship roles. A total of 504 questionnaires were collected, as presented in Table 1. Specifically, the participants holding the role of junior medical interns – 306 females, 175 males and 23 preferred not to say – who are studying in medical schools in the Philippines with ages ranging from 24-28 years old: 68 respondents are 24 years old (13.49%); 111 are 25 years old (22.02%); 145 are 26 years old (28.77%); 111 are 27 years old (22.02%) and 69 are 28 years old (13.69%). They were chosen as the respondents due to the multiple adjustments they faced transitioning to their final year

at medical schools. These include being deployed and having their clerkships at matched hospitals with varying shifts. There were 369 (73.21%) junior medical interns matched to Private hospitals for their clerkship, and 135 (26.79%) matched to public hospitals.

Table 1. Sociodemographic profile of the overall sample

Variable	Frequency	Percentage
Gender		
Female	306	60.71%
Male	175	34.72%
I preferred not to say	23	4.57%
Age		
24	68	13.49%
25	111	22.02%
26	145	28.77%
27	111	22.02%
28	69	13.69%
Hospital		
Public	135	26.79%
Private	369	73.21%

3.2 Scores of Fatigue Severity, Psychological Well-Being, and Rumination

Table 2. Descriptive statistics of fatigue severity, psychological well-being, and rumination

Variables	Mean	SD	Interpretation
Fatigue Severity	45.90	6.88	Severe
Psychological Well-Being	57.56	9.21	Moderate
Rumination	53.80	12.7	Above Normal

In Table 2, junior medical interns reported a high level of fatigue, with a mean score ($M = 45.90$, $\sigma = 6.88$) indicating severe fatigue. This finding highlighted the significant fatigue during clerkship (Arnold & Rosemary, 2022). This suggested that fatigue during clerkship was a significant issue for healthcare professionals, including junior medical interns. In contrast, the interns demonstrated moderate levels ($M=57.56$, $\sigma = 9.21$) of psychological well-being, suggesting that while their basic psychological needs were met, there was room for improvement (Leong et al., 2020). It does not cause serious concerns, but it provides opportunities for targeted improvement efforts among junior medical interns. When it came to rumination, the interns exhibited above-normal levels ($M=53.80$, $\sigma = 12.72$), indicating a tendency towards repetitive negative thinking (Watkins & Roberts, 2020), which could disrupt daily functioning, impeding one's ability to engage effectively in work, social, or personal activities.

The results of this study have important implications for understanding and addressing the well-being of junior medical interns. The high levels of fatigue reported by interns underscore the need for interventions to reduce fatigue and promote effective stress management. The moderate levels of psychological well-being suggest that while interns may not be experiencing severe distress, there is room for improvement to enhance their overall well-being.

3.3 Correlations Among Fatigue Severity, Psychological Well-Being, and Rumination

As seen in Table 3, correlation analyses revealed significant relationships between the variables of interest. Fatigue severity was positively correlated with rumination ($r = 0.442$, $p < 0.001$), indicating that higher fatigue levels were associated with increased rumination. A negative correlation was found between psychological well-being and rumination ($r = -0.122$, $p = 0.007$), suggesting an inverse relationship. Additionally, fatigue severity was found to have a significant negative correlation with psychological well-being ($r = -0.118$, $p = 0.010$), implying that increased fatigue was linked to lower psychological well-being.

The positive correlation between fatigue severity and rumination indicates that as fatigue increases, interns are more likely to engage in repetitive negative thinking (Weiher et al., 2022). This finding aligns with previous research and highlights the potential for rumination to exacerbate fatigue-related issues. The negative correlation between psychological well-being and rumination further reinforces the idea that excessive rumination can be

detrimental to mental health (Arrivillaga et al., 2022). The significant negative correlation between fatigue severity and psychological well-being suggests that addressing fatigue may positively impact interns' overall well-being (Li et al., 2022). This finding adds to the growing body of literature emphasizing prioritizing fatigue management in healthcare settings (Cousin Cabrol et al., 2023).

Table 3. Correlation between variables among junior medical interns (n=480).

Variables		1	2	3	4	5	6	7	8	9	10
Autonomy	Pearson	--									
	Correlation										
	Sig. (2-tailed)	--									
Environmental Mastery	Pearson	.417**	--								
	Correlation										
	Sig. (2-tailed)	0.000	--								
Personal Growth	Pearson	.432**	.369**	--							
	Correlation										
	Sig. (2-tailed)	0.000	0.000	--							
Positive Relations with Others	Pearson	0.042	0.020	.144**	--						
	Correlation										
	Sig. (2-tailed)	0.358	0.660	0.002	--						
Purpose in Life	Pearson	0.062	.147**	.123**	.337**	--					
	Correlation										
	Sig. (2-tailed)	0.178	0.001	0.007	0.000	--					
Self-Acceptance	Pearson	.354**	.350**	.318**	.212**	.222**	--				
	Correlation										
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	--				
Well-being	Pearson	.638**	.650**	.652**	.477**	.532**	.669**	--			
	Correlation										
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	--			
Brooding	Pearson	-.218**	-.296**	-0.056	.296**	.130**	-0.064	-0.063	--		
	Correlation										
	Sig. (2-tailed)	0.000	0.000	0.223	0.000	0.004	0.163	0.170	--		
Reflecting	Pearson	-.222**	-.274**	-.121**	.245**	0.088	-0.066	-.101*	.770**	--	
	Correlation										
	Sig. (2-tailed)	0.000	0.000	0.008	0.000	0.054	0.146	0.026	0.000	--	
Depressive	Pearson	-.285**	-.337**	-.102*	.288**	0.076	-.115*	-.137**	.864**	.818**	--
	Correlation										
	Sig. (2-tailed)	0.000	0.000	0.026	0.000	0.098	0.012	0.003	0.000	0.000	--
Rumination	Pearson	-.269**	-.331**	-.101*	.296**	.097*	-.097*	-.118**	.924**	.897**	.978**
	Correlation										
	Sig. (2-tailed)	0.000	0.000	0.027	0.000	0.034	0.034	0.010	0.000	0.000	0.000

¹**. Correlation is significant at the 0.01 level (2-tailed).

²*. Correlation is significant at the 0.05 level (2-tailed).

3.4 Test of Normality, Multicollinearity Analysis, and Mediation Analyses

The results of this study provided insights into the levels of fatigue severity, psychological well-being, and rumination among junior medical interns, as well as the relationships between these variables. The data analysis began with an assessment of normality using the Kolmogorov-Smirnov and Shapiro-Wilk tests. Initially, the study included 504 respondents. However, 24 respondents were removed during the analysis as their standard deviation (SD) values were less than 0.25. This reduction in the sample size resulted in a final sample size of 480 respondents. Removing these respondents was necessary to ensure that the data met the normality assumption required for some of the statistical analyses employed in this study.

This test was conducted using the variance inflation factor (VIF) and tolerance value. In the study, fatigue severity and rumination obtained VIF values of 1.243 and tolerance values of 0.804. Multicollinearity is present if the tolerance value is below 10% and the VIF is above 10 (Kim, 2019). In the data, the VIF value was less than 3, indicating no multicollinearity.

Mediation analyses further explored the role of rumination in the relationship between fatigue severity and psychological well-being. Rumination was found to partially mediate this relationship when considering the subdomains of brooding ($B = 0.034$, $SE = 0.063$, $p = 0.588$) and reflecting ($B = 0.003$, $SE = 0.061$, $p = 0.963$). However,

when examining depressive rumination, as seen in Figure 1, it fully mediates ($B = 0.125$, $SE = 0.062$, $p = 0.045$) the relationship between fatigue severity and psychological well-being.

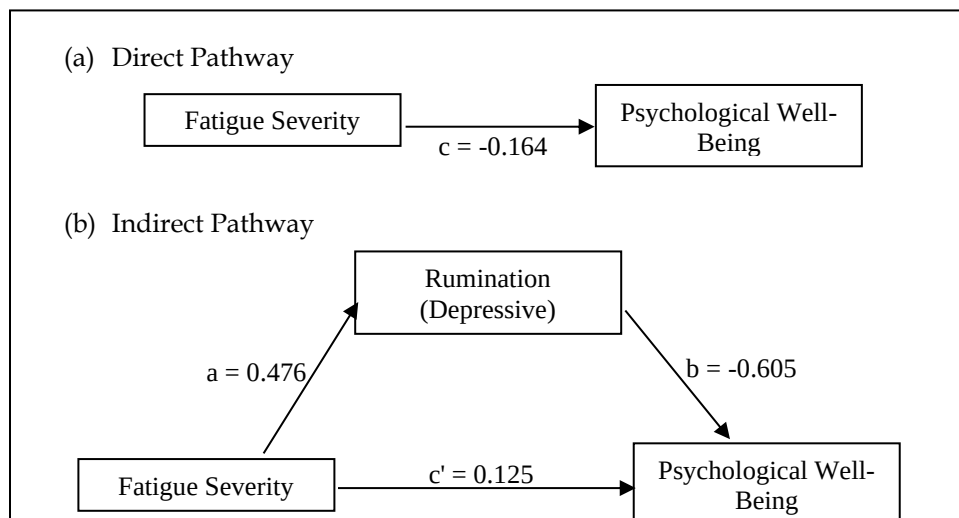


Figure 1. Mediation model depicting the (a) direct effect of fatigue severity and; (b) indirect effect of rumination (depressive) on psychological well-being; path coefficients (a , b , c , c') are standardized regression coefficients; *statistically significant at $p < 0.01$ level (two-tailed).

The mediation analyses provide insight into the complex relationship between fatigue severity, rumination, and psychological well-being. The partial mediation by brooding and reflecting rumination suggests that while these thought patterns play a role, other factors may also be in the relationship between fatigue and well-being (Gradiski et al., 2022). On the other hand, the full mediation by depressive rumination indicates that depressive thoughts account entirely for the relationship between fatigue severity and psychological well-being (Lei et al., 2017).

3.5 Proposed Program

Based on the results as seen in Table 4, can be proposed as a potential intervention program to enhance stress management skills, improve psychological well-being, and reduce rumination among medical interns. By providing workshops on stress management, time management, coping strategies, healthy lifestyle habits, sleep hygiene, and emotional regulation, the program offers comprehensive support for interns to enhance their well-being. This program can be delivered through in-person sessions, webinars, or self-paced online modules, catering to various learning preferences and logistical considerations. This ensures accessibility and flexibility to accommodate different learning preferences and schedules. The program implementation, evaluation, and follow-up components are designed to ensure the effectiveness and sustainability of the intervention. By collecting feedback, measuring changes in stress levels and rumination tendencies, and offering ongoing support beyond the workshops, the program aims to empower interns to manage their well-being effectively and create a healthier work environment.

The findings of this study provide valuable insights into the complex interplay between rumination, fatigue severity, and psychological well-being among junior medical interns. The observed relationship between rumination and lower psychological well-being, as well as higher health complaints, underscores the multifaceted impact of rumination on the overall health of medical interns (Hong et al., 2021). These results align with previous research (Sagherian et al., 2023), emphasizing the detrimental effects of prolonged rumination on psychological well-being and the potential for maladaptive coping strategies to develop (Weiher et al., 2022).

Table 4. Proposed intervention program Medical Intern Well-Being Workshop Series: Nurturing Resilience

Objectives:	Improve medical interns' stress management skills, enhance psychological well-being, and reduce rumination. By developing a comprehensive program that addresses stress management, self-care, and mindfulness techniques, interns will be well supported in managing their well-being more effectively, thereby promoting a healthier work environment.
Delivery Format:	Workshops, such as in-person sessions, webinars, or self-paced online modules, may be offered in various formats to accommodate different learning preferences and schedules. Peer support groups or mentorship programs may be incorporated, where interns can share experiences, provide support, and learn from each other.
Program Implementation:	Launch the program and promote intern participation through communication channels such as emails, posters, and social media. Ensure that workshops are facilitated by qualified mental health professionals or experts in the relevant areas.
Evaluation and Feedback:	Collect feedback from interns throughout the program to assess workshop effectiveness, satisfaction levels, and areas for improvement. Utilize pre- and post-workshop assessments to measure changes in interns' stress levels, coping skills, mindfulness, and rumination tendencies.
Follow-Up and Support:	Offer ongoing support and resources to interns beyond the workshops, such as access to mental health resources, self-help materials, or follow-up sessions. Encourage interns to incorporate the skills and strategies learned in the workshops into their daily lives and provide opportunities for continued practice and reinforcement.
Continuous Improvement:	Use evaluation findings to refine and improve the program, adapting content and delivery methods based on participant feedback and emerging research in stress management and mindfulness.

WORKSHOP SERIES

Workshop 1: Understanding Stress and Building Resilience	• Introduction to stress: types, causes, and effects on well-being. • Identifying individual stressors: self-assessment and group discussion. • Introduction to resilience: the ability to bounce back from adversity. • Resilience-building exercises: reframing challenges, finding meaning, and fostering optimism.
Workshop 2: Time Management and Prioritization	• Importance of effective time management for stress reduction. • Techniques for prioritizing tasks and setting SMART goals. • Time management tools and apps: practical demonstrations and recommendations. • Creating a personalized time management plan: setting boundaries and managing distractions. • Overview of coping mechanisms: problem-focused vs. emotion-focused coping.
Workshop 3: Coping Skills and Stress Reduction Strategies	• Identifying and challenging negative thought patterns. • Coping strategies toolbox: relaxation techniques, deep breathing exercises, and progressive muscle relaxation. • Role-play exercises: practicing assertiveness and boundary-setting.
Workshop 4: Cultivating Healthy Lifestyle Habits	• The connection between physical health and mental well-being. • Importance of nutrition, exercise, and hydration for stress management. • Interactive cooking demonstration: preparing simple, nutritious meals. • Group exercise session: incorporating physical activity into daily routines. • Understanding the sleep-stress cycle and the importance of quality sleep. • Tips for improving sleep hygiene: creating a bedtime routine, optimizing sleep environment, and managing technology use.
Workshop 5: Mastering Sleep Hygiene	• Sleep tracking and assessment tools: evaluating sleep patterns and identifying areas for improvement. • Developing personalized sleep hygiene plans: setting goals and tracking progress. • Exploring emotional regulation: recognizing and managing emotions effectively.
Workshop 6: Self-Regulation and Emotional Regulation	• Techniques for self-regulation: mindfulness meditation, body scans, and grounding exercises. • Mindfulness-based stress reduction (MBSR) techniques: cultivating present-moment awareness and acceptance. • Practicing self-compassion: overcoming perfectionism and embracing imperfection.
Workshop 7: Overcoming Rumination and Enhancing Psychological Well-Being	• Understanding rumination: its impact on mental health and well-being. • Cognitive-behavioral techniques for challenging rumination and negative self-talk. • Mindfulness-based interventions for reducing rumination: mindfulness of thoughts and emotions. • Group discussion and sharing of strategies for promoting psychological well-being. • Reflecting on learning and insights gained from the workshop series.
Workshop 8: Integration and Action Planning	• Creating personalized self-care plans: setting short-term and long-term goals. • Identifying sources of support and accountability within the workplace and community. • Committing to ongoing self-care practices and strategies for maintaining resilience.

Timetable for Each Session:

By following a schedule and timetable, participants can engage in a structured and interactive learning experience that supports their development of stress management skills, resilience, and well-being.

Here is a schedule and timetable for the workshops, considering a series of eight sessions. Each session lasts approximately two hours, allowing for a balance between learning activities, discussions, and practical exercises. Adjustments can be made based on participants' availability and preferences.

Introduction and Welcome (10 minutes)	• Introduction of facilitators and participants. • Overview of the session objectives and agenda.
Interactive Learning Activities (45-60 minutes)	• Presentation of key concepts, strategies, and techniques. • Group discussions, case studies, and interactive exercises.
Practical Exercises and Skill-Building (30-45 minutes)	• Guided practice of skills and techniques introduced. • Role-play activities, mindfulness exercises, or hands-on demonstrations.
Reflection and Discussion (15-30 minutes)	• Group reflection on learning experiences and insights gained. • Sharing of personal experiences, challenges, and successes.
Action Planning and Wrap-Up (10 minutes)	• Setting individual or group goals for applying learning. • Review of key takeaways and resources for further exploration.
Follow-Up and Support	• Encouragement to apply learning in daily life. • Availability of facilitators for questions and additional support. • Information on follow-up sessions or resources for ongoing support.

Moreover, the study's identification of rumination as a mediator in the relationship between fatigue severity and psychological well-being highlights the interconnected nature of these variables. This suggests that interventions targeting rumination may improve psychological resilience and contribute to reducing fatigue and enhancing sleep quality among individuals experiencing fatigue-related challenges. The implications of these findings extend beyond the context of junior medical interns, offering potential insights into the broader management of fatigue and psychological well-being in clinical settings.

In light of these findings, it is imperative to consider the broader implications for medical education and healthcare institutions. The study's recommendation to promote the psychological well-being of junior medical interns during clerkship aligns with the growing recognition of the need for comprehensive support systems within medical training programs. By integrating targeted interventions and wellness initiatives, medical schools and hospitals can play a pivotal role in fostering the mental well-being of future healthcare professionals.

It is also important to acknowledge certain limitations of the present study, which lay principally in the online collection of data that may have resulted in participants easily tampering with their responses to the survey. The study employed a non-probability purposive sampling approach to recruit participants, which presented limitations in generalizing the research findings. The scope of targeting all medical interns across the whole of the Philippines posed a limitation, as an unknown proportion of the total junior medical intern population may not have been included. This lack of representation of the entire target population meant the results may not have been fully generalizable. A bigger sample size from a sampling frame that more comprehensively represented medical interns nationwide would have helped address this limitation. Further research utilizing larger, more representative study samples was recommended to validate and expand on the present study's findings, which may have had limited generalizability due to aspects of the target population not being fully captured.

4.0 Conclusion

This study explored the interrelationships between fatigue severity, psychological well-being, and rumination among junior medical interns. The following conclusions are drawn from the data analysis: Firstly, junior medical interns experience severe levels of fatigue, indicating a need for interventions to reduce exhaustion during their clerkship. Secondly, interns' psychological well-being is moderate, suggesting room for improvement to enhance their resilience and life satisfaction. Thirdly, rumination levels are above normal, highlighting a tendency towards repetitive negative thinking.

The study revealed significant relationships between these variables. Fatigue severity negatively impacts psychological well-being, and a positive correlation exists between fatigue and rumination. Additionally, rumination was found to mediate the relationship between fatigue and well-being, with depressive rumination playing a full mediating role. In conclusion, addressing fatigue, rumination, and psychological well-being among junior medical interns is crucial. The proposed intervention program aims to provide interns with the tools for effective energy management, reduced rumination and enhanced overall well-being. Implementing such initiatives can foster resilience and long-term mental health during their clerkship.

The study identified and addressed a key research gap by focusing on the well-being of junior medical interns and the need for interventions to reduce their stress levels, specifically targeting rumination and severe fatigue. This is crucial as existing literature has highlighted the challenges faced by medical interns, such as high levels of fatigue and potential psychological distress. The study also acknowledged its limitations, such as online data collection and non-probability sampling. It recommends future research with larger and more representative samples to validate and expand on the findings. Building on the recommendation to promote the psychological well-being of junior medical interns, future research could focus on developing and implementing targeted interventions and support systems within medical training programs. This could involve integrating wellness initiatives, providing facilitators for questions and support, and offering follow-up sessions or resources for ongoing support.

5.0 Contributions of Authors

The authors confirm the equal contribution in each part of this work. All authors reviewed and approved the final version of this work. Kristyl Joyce V. Pascubillo – Methodology, Investigation, Writing – Original Draft, Visualization, Project administration. Geraldine F. Santos – Conceptualization, Formal Analysis, Writing – Review & Editing, Supervision

6.0 Funding

This work received no specific grant from any funding agency.

7.0 Conflict of Interests

All authors declare that they have no conflicts of interest.

8.0 Acknowledgment

The authors would like to thank the junior medical interns for their perseverance, hard work and dedication to complete their medical doctor's degree. We would also like to extend our gratitude to our participants as they allotted time to participate in this study.

9.0 References

- Alolabi, H., Alchallah, M. O., Mohsen, F., Marrawi, M., & Alourfi, Z. (2022). Social and psychosocial factors affecting eating habits among students studying at the Syrian Private University: A questionnaire based cross-sectional study. *Heliyon*, e09451. doi: 10.1016/j.heliyon.2022.e09451
- Andersen, L.S., Stanton, A.M., Magidson, J.F., Joska, J.A., O'Leirigh, C., Lee, J.S., Kagee, A., Witten, J.A., & Safren, S.A. (2023). Cognitive and Behavioral Contributions to Depression Severity, Quality of Life, and Functioning Among People Living With HIV in South Africa. *Behavior therapy*, 54(1), 91-100. doi: <https://doi.org/10.1016/j.beth.2022.07.003>
- Arnold, P. J., & Romary, D. J. (2022). Compassion Fatigue: a Medical Student Experience. *Academic Psychiatry*, 1-2. doi: <https://doi.org/10.1007/s40596-022-01666-5>
- Arrivillaga, C., Rey, L., & Extremera, N. (2022). Psychological distress, rumination and problematic smartphone use among Spanish adolescents: An emotional intelligence-based conditional process analysis. *Journal of affective disorders*, 296, 1-8. doi: <https://doi.org/10.1016/j.jad.2021.09.021>
- Arrogante, O., & Aparicio-Zaldivar, E. G. (2020). Burnout syndrome in intensive care professionals: Relationships with health status and wellbeing. *Enfermería Intensiva* (English ed.), 31(2), 60-70. doi: 10.1016/j.enfi.2019.03.004
- Capinpuyan, A. L. C., & Miguel, R. T. D. (2019). Ethical Challenges in Medical Community Internships: Perspectives from Medical Interns in the Philippines. *Health and Human Rights*, 21(1), 141-147.
- Commission on Higher Education (2016). Policies, Standards and Guidelines for Doctor of Medicine (M.D.) Program. CHED Memorandum Order No. 18, Series of 2016. Retrieved at: <https://ched.gov.ph/wp-content/uploads/2017/10/CMO-18-s.-2016.pdf>
- Cousin Cabrolier, L., Di Beo, V., Marcellin, F., Rousset Torrente, O., Mahe, V., Valderas, J. M., Chassany, O., Carrieri, P.M., & Duracinsky, M. (2023). Negative representations of night-shift work and mental health of public hospital healthcare workers in the COVID-19 era (Aladdin survey). *BMC Health Services Research*, 23(1), 1-12. doi: 10.1186/s12913-023-09101-7
- Gradiski, I. P., Borovečki, A., Čurković, M., San-Martin, M., Bolton, R. C. D., & Vivanco, L. (2022). Burnout in International Medical Students: Characterization of Professionalism and Loneliness as Predictive Factors of Burnout. *International Journal of Environmental Research and Public Health*, 19(3), 1385. doi: <https://doi.org/10.3390/ijerph19031385>
- Hong, W., Liu, R. D., Ding, Y., Fu, X., Zhen, R., & Sheng, X. (2021). Social media exposure and college students' mental health during the outbreak of CoViD-19: the mediating role of rumination and the moderating role of mindfulness. *Cyberpsychology, Behavior, and Social Networking*, 24(4), 282-287. doi: <https://doi.org/10.1089/cyber.2020.0387>
- Hosseini Pour, A. H., Gholami, M., Saki, M., & Birjandi, M. (2020). The effect of inspiratory muscle training on fatigue and dyspnea in patients with heart failure: A randomized, controlled trial. *Japan Journal of Nursing Science*, 17(2), e12290. doi: <https://doi.org/10.1111/jjns.12290>
- Jezzini-Martinez, S., Quiroga-Garza, A., Jacobo-Baca, G., Guzman-Lopez, S., Salinas- Alvarez, Y., Martinez-Garza, J., Zarate-Garza, P., Gutierrez-De la O, J., de la Fuente-Villareal, D., & Elizondo-Omaña, R. (2021). COVID-19 causing burnout among medical students. *The FASEB Journal*, 35.
- Kajjimu, J., Kaggwa, M. M., & Bongomin, F. (2021). Burnout and associated factors among medical students in a Public University in Uganda: a Cross-Sectional Study. *Advances in Medical Education and Practice*, 12, 63. doi: <https://doi.org/10.2147/amep.s287928>
- Kamudoni, P., Johns, J., Cook, K. F., Salem, R., Salek, S., Raab, J., Middleton, R., Henke, C., Repovic, P., Alschuler, K., von Geldern, G., Wundes, A. & Amtmann, D. (2021). Standardizing fatigue measurement in multiple sclerosis: the validity, responsiveness and score interpretation of the PROMIS SF v1. 0-Fatigue (MS) 8a. *Multiple Sclerosis and Related Disorders*, 54, 103117. doi: <https://doi.org/10.1016/j.msard.2021.103117>
- Kim, J. H. (2019). Multicollinearity and misleading statistical results. *Korean journal of anesthesiology*, 72(6), 558-569. doi: <https://doi.org/10.4097/kja.19087>
- Klein, H. J., & McCarthy, S. M. (2022). Student wellness trends and interventions in medical education: a narrative review. *Humanities and Social Sciences Communications*, 9(1). doi: <https://dx.doi.org/10.1057/s41599-022-01105-8>
- Krupp, L. B., LaRocca, N. G., Muir-Nash, J., & Steinberg, A. D. (1989). The fatigue severity scale: application to patients with multiple sclerosis and systemic lupus erythematosus. *Archives of neurology*, 46(10), 1121-1123. doi: <https://doi.org/10.1001/archneur.1989.00520460115022>
- Lee, T. S. H., Sun, H. F., & Chiang, H. H. (2019). Development and validation of the short- form Ryff's psychological well-being scale for clinical nurses in Taiwan. *Journal of medical sciences*, 39(4), 157.
- Lei, X., Zhong, M., Liu, Y., Xi, C., Ling, Y., Zhu, X., Yao, S., & Yi, J. (2017). Psychometric properties of the 10-item ruminative response scale in Chinese university students. *BMC psychiatry*, 17(1), 1-8.
- Leong, J. J., Idris, M., & Malek, M. D. A. (2020). Assessment of Psychological Well- being among Enforcement Officers during the Movement Control Order (MCO) in Malaysia. *Journal of Xidian University*, 14(5), 5831-5841. doi: <http://dx.doi.org/10.37896/jxu14.5/634>
- Li, W., Chen, J., Li, M., Smith, A. P., & Fan, J. (2022). The effect of exercise on academic fatigue and sleep quality among university students. *Frontiers in Psychology*, 13, 1025280. doi: <https://doi.org/10.3389/fpsyg.2022.1025280>
- Liu, Y., Jiang, T. T., & Shi, T. Y. (2020). The relationship among rumination, coping strategies, and subjective well-being in Chinese patients with breast cancer: a cross-sectional study. *Asian Nursing Research*, 14(4), 206-211. doi: <https://doi.org/10.1016/j.anr.2020.07.005>
- Matheson, G. J. (2019). We need to talk about reliability: making better use of test-retest studies for study design and interpretation. *PeerJ*, 7, e6918. doi: 10.7717/peerj.6918. PMID: 31179173; PMCID: PMC6536112.

- Nolen-Hoeksema, S., & Morrow, J. (1991). A prospective study of depression and posttraumatic stress symptoms after a natural disaster: the 1989 Loma Prieta Earthquake. *Journal of personality and social psychology*, 61(1), 115. doi: <https://psycnet.apa.org/doi/10.1037/0022-3514.61.1.115>
- O'Marr, J. M., Chan, S. M., Crawford, L., Wong, A. H., Samuels, E., & Boatright, D. (2022). Perceptions on burnout and the medical school learning environment of medical students who are underrepresented in medicine. *JAMA network open*, 5(2), e220115-e220115. doi: [10.1001/jamanetworkopen.2022.0115](https://doi.org/10.1001/jamanetworkopen.2022.0115)
- Raziq, S., Qurat-ul-Ain, A., Abbasi, A. T., & Abbasi, M. T. (2023). Effect of Childhood Experiences on Psychological Well-being and Resilience Among Young Adults: Mediating Role of Defense Mechanism. *Pakistan Journal of Law, Analysis and Wisdom*, 2(02), 123-135. doi: <https://doi.org/10.1234/pjlaw.v2i02.56>
- Rosti-Otajärvi, E., Hämäläinen, P., Wiksten, A., Hakkarainen, T., & Ruutiainen, J. (2017). Validity and reliability of the Fatigue Severity Scale in Finnish multiple sclerosis patients. *Brain and behavior*, 7(7), e00743. doi: <https://doi.org/10.1002/brb3.743>
- Ryff, C. D. (1989) Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57(6), 1069-1081. doi: <https://psycnet.apa.org/doi/10.1037/0022-3514.57.6.1069>
- Sagherian, K., Steege, L. M., Cobb, S. J., & Cho, H. (2023). Insomnia, fatigue and psychosocial well-being during COVID-19 pandemic: A cross-sectional survey of hospital nursing staff in the United States. *Journal of clinical nursing*, 32(15-16), 5382-5395. doi: <https://doi.org/10.1111/jocn.15566>
- Watkins, E. R., & Roberts, H. (2020). Reflecting on rumination: Consequences, causes, mechanisms and treatment of rumination. *Behaviour Research and Therapy*, 127, 103573. doi: <https://doi.org/10.1016/j.brat.2020.103573>
- Weiher, G. M., Varol, Y. Z., & Horz, H. (2022). Being Tired or Having Much Left Undone: The Relationship Between Fatigue and Unfinished Tasks With Affective Rumination and Vitality in Beginning Teachers. *Frontiers in Psychology*, 13, 935775. doi: <https://doi.org/10.3389/fpsyg.2022.935775>
- Zdun-Ryzewska, A., Nadrowska, N., Basiński, K., Walkiewicz, M., & Błażek, M. (2021). Who is a tired student? Fatigue and its predictors from a gender perspective. *Journal of University Teaching & Learning Practice*, 18(6), 139-154. doi: <https://doi.org/10.53761/1.18.6.10>

The Grassroots Reality: A Scoping Review of the Mother Tongue-Based Multilingual Education (MTB-MLE) Implementation in the Philippines

Czarina Alexandria P. Wata*, Charis G. Oraiz, John Louie D. Galang, Cristian V. Dones
La Consolacion University Philippines, Malolos, Bulacan, Philippines

*Corresponding Author Email: czaalexandriapoblete@gmail.com

Date received: June 17, 2024

Date revised: June 28, 2024

Date accepted: July 3, 2024

Originality: 92%

Grammarly Score: 99%

Similarity: 8%

Recommended citation:

Wata, C.A., Oraiz, C., Galang, J.L., & Dones, C. (2024). The grassroots reality: a scoping review of the mother tongue-based multilingual education (MTB-MLE) implementation in the Philippines.

Journal of Interdisciplinary Perspectives, 2(8), 345-353. <https://doi.org/10.69569/jip.2024.0289>

Abstract. This study employed a scoping review methodology and thematic analysis to examine the grassroots-level implementation of Mother Tongue-Based Multilingual Education (MTB-MLE) in the Philippines. The research emphasized the importance of exploring the experiences and perspectives of those directly involved in policy execution and recognizing their critical roles. Mapping the existing literature, the study identified four emerging themes: teacher preparedness and training; limited resources and difficulty in translation; language diversity and language selection difficulty; and community engagement and support. These themes underscored the complexities surrounding MTB-MLE implementation, highlighting areas for improvement and policy refinement. A functional framework was formulated to provide a structured approach to understanding and addressing the identified issues. The framework recommended in-service training and workshops for educators, resource development and iterative translation, language proficiency assessments for students, and community-based initiatives. These elements are crucial for overcoming current challenges and establishing a sustainable foundation for the ongoing success of MTB-MLE initiatives. Although MTB-MLE has positive policy aims, its implementation at the ground level remains a subject of academic inquiry due to specific limitations. This study aimed to contribute to the vital discussion on the complex interplay between language policy directives and grassroots realities and provide practical recommendations for improving MTB-MLE implementation and associated educational initiatives.

Keywords: MTB-MLE implementation; Philippines; Language policy; Grassroots reality; Functional framework.

1.0 Introduction

The implementation of Mother Tongue-Based Multilingual Education (MTB-MLE) in the Philippines is regarded as a pivotal policy initiative that is aimed at improving educational outcomes while celebrating linguistic diversity and cultural preservation. With over 170 spoken languages – a clear picture of the country's diverse linguistic landscape, MTB-MLE has resulted in a significant educational transformation (Eclipse & Tenedero, 2018).

In 2009, DepEd Order No. 74 institutionalized the use of the mother tongue in enhancing learning results from Kindergarten to Grade 3. Subsequently, DepEd Order No. 16 was issued in 2012 which directed the adoption of MTB-MLE in the K-12 Basic Education Program for the School Year 2012-2013. The directive included the policy's objectives, emphasizing its influence on the students' language, cognitive, and academic developments, as well as on their sociocultural awareness. In its implementation, the policy aims to use the learners' first language for instruction from Kindergarten through Grade 3, gradually transitioning to Filipino and English in higher grades. The justification for MTB-MLE stems from its ability to connect the native language with the language used for

teaching, which is often English or Filipino, hence improving comprehension and academic accomplishment (Gaylo, 2020).

Villacañas de Castro (2016) posits that MTB-MLE is anchored on Cummins' Linguistic Interdependence Hypothesis and Threshold Hypothesis. Cummins postulated that students who are proficient in their mother tongue are more capable of learning a second language, which in turn improves their cognitive and academic abilities. The Threshold Hypothesis resonated with this notion, highlighting that cognitive academic language proficiency acquired in the mother tongue can be transferred to a second language, boosting academic performance.

Nonetheless, in the Philippine context, despite the seemingly optimistic policy intentions of MTB-MLE, its implementation at the ground level remains a topic of academic research since several problems are encountered due to specific constraints. Thus, there needs to be a continuing exploration of the challenges encountered by educators, communities, and educational stakeholders as they are directly involved in the policy execution. As Tañiza et al. (2024) put it, comprehending the dynamics of policy implementation from the grassroots level becomes imperative since what occurs at the ground level will impact the successful implementation of the language policy, either directly or indirectly.

In this light, this paper examined the grassroots reality of MTB-MLE implementation in the Philippines, with the aim of contributing to the important discussion on the interplay between language policy directives and grassroots realities and offering effective strategies for improving MTB-MLE implementation and related educational initiatives.

2.0 Methodology

This study employed a scoping review methodology and thematic analysis to examine the grassroots-level implementation of MTB-MLE in the Philippines. The scoping review was used to map existing literature on MTB-MLE, examining the extent, range, and nature of the research activity, as well as identifying the research gaps and key concepts in the literature. Thematic analysis was employed to extract and identify recurring themes related to the implementation process. This dual approach provided a comprehensive overview and in-depth understanding of the complexities surrounding MTB-MLE implementation, highlighting areas for improvement and policy refinement.

The data-gathering procedure involved several specific steps:

- a) Identifying Relevant Studies: A comprehensive search strategy was employed using academic databases such as PubMed, Google Scholar, JSTOR, and other relevant education-focused databases. Search terms included "Mother Tongue-Based Multilingual Education," "MTB-MLE implementation," "Philippines," "language education," and related keywords. Studies published in English between 2010 and 2024 were considered for inclusion.
- b) Study Selection: The selection process involved two stages: (a) title and abstract screening, and (b) full-text review. Two independent reviewers screened the titles and abstracts to identify potentially relevant studies. Full-text articles were retrieved for the selected studies and further assessed for eligibility.
- c) Data Extraction: A data extraction form was used to collect relevant information from the included studies.
- d) Data Analysis: A thematic analysis was conducted to identify recurring themes, patterns, and gaps in the research on MTB-MLE implementation in the Philippines. The extracted data was organized based on emerging themes.

3.0 Results and Discussions

3.1 The Grassroots Reality

While the implementation of MTB-MLE aims to enhance learning outcomes, preserve linguistic diversity, and foster inclusive educational practices in the country, existing literature highlights a significant gap between the policy's intended goals and the grassroots reality. As emphasized in the study conducted by Cansino (2023), the program's vision, as outlined in its policy, is commendable, but its implementation faces various shortcomings due to certain limitations. It is, therefore, critical to investigate the authentic, everyday experiences and perspectives of those who are directly involved in the policy execution and recognize their essential roles in its

potential reform and improvement. Ensuring that a top-down policy translates into effective pedagogies and meaningful classroom practices is a complicated process that takes into account various elements or factors.

Teacher Preparedness and Training

Whereas MTB-MLE promises increased accessibility and cultural preservation, research highlights the importance of ensuring teacher readiness and training for successful program implementation. Tañiza et al. (2024) recognized the pivotal role of teacher preparedness and training in the successful implementation of MTB-MLE. Exploring the perspectives of teachers, parents, and community members, their study underscored the need for extensive teacher training programs suited to the linguistic demands of MTB-MLE. The study participants emphasized that to produce satisfying outcomes, educators should be equipped with proficiency in the local languages used as mediums of instruction and a refined understanding of effective teaching strategies.

Educators, as the primary players and the cornerstone of policy execution, are expected to be well-trained to yield the desired learning outcomes from the students. However, in reality, this is not the case. From the policy's inception to the present, teachers have been confronted with several challenges attributed to their lack of proper training, resulting in discrepancies between policy objectives and actual practices. Teachers often lack adequate training in the pedagogical methods of MTB-MLE and the specific languages they are required to teach, leading to inconsistent application of the policy and affecting the quality of education.

Such is the case with the mountain school teachers in Cebu City. In the study conducted by Boligol et al. (2023), the teachers disclosed that neither proper training in MTB-MLE teaching nor a teacher's handbook or manual to serve as a reference had been provided for them since they first taught MTB-MLE. Most of them even lack background and orientation on the policy. More than a decade since its implementation, this sad truth persists. The same concern resonated in the case of the MTB-MLE teachers in Nueva Ecija (Aguasan et al., 2023) and Ilocos Sur (Sanchez et al., 2023), highlighting the dearth of training for those who teach and use MTB-MLE in class. Their struggles are rooted in the apparent mismatch between their own dialect and that of the students and the community. This has been a significant concern since language barriers create certain misconceptions among students and teachers that hinder the effective delivery of instruction. In other words, in the context of MTB-MLE, to glean the desired outcomes, teachers and students should share the same dialect to easily exchange ideas.

In addition, educators' lack of proper training can lead to feelings of inadequacy and hinder effective instruction. Cariaga's (2015) study exemplified this, as teachers reported struggling to explain scientific and English concepts using their students' mother tongue, suggesting fluency issues or a lack of appropriate pedagogical strategies.

The aforementioned studies underscore the need for robust support systems to equip teachers with the necessary skills and resources. Providing targeted professional development programs and fostering collaboration among educators can empower them to navigate the complexities of MTB-MLE confidently. In conclusion, effectively implementing MTB-MLE requires addressing teacher readiness. Through ongoing professional development, the educational system can empower teachers to deliver a high-quality MTB-MLE that strengthens student learning and cultural identity.

Limited Resources and Difficulty in Translation

Several studies have highlighted the challenges posed by limited resources and difficulty translating into effective implementation of MTB-MLE.

Firstly, the lack of readily available, localized resources emerged as a significant barrier. In the study conducted by Tañiza et al. (2024), the research participants reported that the scarcity of locally contextualized materials hindered their ability to establish an immersive and culturally relevant learning environment. This can be considered a pertinent concern since the absence of such materials challenges the intention of delivering MTB-MLE that responds to the language and cultural variety in the Philippines. The same concern was brought to the forefront by Mondey (2013), Aguasan et al. (2024), and Boligol et al. (2023). Their papers articulated that students cannot acquire their mother tongue formally if instructional materials are deficient. The sentiment was also echoed in Medilo's (2016) research, which documented the challenges teachers face due to the unavailability of

instructional materials in their students' mother tongue. The scarcity of resources affects teacher readiness and limits student access to appropriate learning materials.

Secondly, the complexity of translating academic language into local languages emerged as a key concern. Burton's (2013) study found that both teachers and parents expressed anxieties about translating specific terminology into languages like Bikol, hindering clear communication and student comprehension. This concern is further emphasized by Yap-Dequiña et al. (2022), whose research documented the difficulties teachers face in using multiple vernaculars due to the inherent challenges in translation.

Moreover, studies by Cabansag (2016) and Medilo (2016) highlighted the compounding effect of limited resources and translation difficulties. Cabansag emphasized the lack of resources alongside the perceived superiority of English as factors hindering MTB-MLE implementation. Similarly, Medilo highlighted how these limitations hinder the effective implementation of the policy.

Effective language instruction demands resources that engage learners in meaningful ways within their linguistic and cultural contexts (Gilmore, 2007). Therefore, the reported resource constraints and difficulty in translation may compromise the depth and authenticity of the MTB-MLE experience among students, which will be instrumental in achieving the desired outcomes of the policy. Nonetheless, Cansino (2023) emphasized that these ongoing issues are not attributed to the failure of the mother tongue as a principle. Instead, they are a manifestation of a gap in the implementation. He commented, "*The Department of Education was not ready, logistically speaking.*"

In conclusion, these studies paint a clear picture of the challenges faced by educators in implementing MTB-MLE. The difficulty translating academic language and the lack of readily available resources create significant roadblocks to effective instruction. Addressing these concerns necessitates strategic planning and resource allocation to guarantee creating, adapting, and disseminating culturally and linguistically relevant instructional materials. These investments are crucial for overcoming present challenges and establishing a sustainable foundation for the ongoing success of MTB-MLE initiatives (Tañiza et al., 2024).

Linguistic Diversity and Language Selection Difficulty

The rich tapestry of languages spoken in many regions implementing MTB-MLE presents both opportunities and challenges. This theme explores the complexities of language selection and its impact on program effectiveness.

A recurring theme is the difficulty in perfectly aligning instructional materials with students' specific mother tongues. Williams et al. (2014) identified this challenge, highlighting the emergence of various strategies at the school level to bridge the gap. This is further emphasized by Valerio's (2015) study, where teachers expressed uncertainty due to the lack of localized materials, hindering the effectiveness of instruction. Melchor (2020) reinforced this concern with a specific focus on Ilocano, highlighting the scarcity of quality materials and the challenges in implementing the program within this linguistic context.

These studies underscore the importance of local-level considerations. Burton (2014) emphasized the need for policy analysis and conceptual frameworks tailored to specific regions. Similarly, Metila et al. (2016) explored strategies for promoting social cohesion in linguistically diverse settings, suggesting the potential of a *lingua franca* approach.

Beyond practical considerations, a strong theoretical foundation is crucial for successful MTB-MLE implementation. Rossi et al. (2004) proposed a framework for program evaluation, emphasizing the need to assess program logic, delivery, and organization to ensure effectiveness. Hornberger (2002) added the concept of ideological and implementational spaces, highlighting the importance of societal acceptance and localized perspectives within educational systems.

In conclusion, navigating linguistic diversity in MTB-MLE requires a nuanced approach. Careful consideration of local languages, the development of context-specific instructional materials, and a strong theoretical foundation are all essential for ensuring program success. Effective MTB-MLE programs can be developed that celebrate

linguistic diversity and empower students to thrive by fostering collaboration between educators, policymakers, and local communities.

Community Engagement and Support

One important element to consider in the success of implementing MTB-MLE is community engagement and support, which underscores the fundamental impact of transparent communication between the schools and their stakeholders.

Existing studies, such as those of Tañiza et al. (2024) and Aguasan et al. (2024), acknowledged the need for more collaborative efforts between educational institutions and local stakeholders. Since communities recognize the learners' unique linguistic and cultural needs, their active involvement in crafting materials that mirror their local settings may ensure a more improved experience for students engaged in MTB-MLE. In addition to facilitating successful language instruction, community engagement instills in students a sense of pride and ownership in their cultural and linguistic identity.

Moreover, research by Skoropinski (2013) provided a positive outlook, highlighting the positive perceptions of parents and teachers in pilot schools across Mindanao. Their reported observations of increased student comprehension, improved reading skills, and stronger teacher-pupil relationships demonstrate the potential benefits of a well-supported program. This sentiment aligns with the findings of Rakusin (2024) in his study on the Bicol Region. Despite the linguistic complexities of the area, the research emphasized the importance of community support for successful MTB-MLE implementation.

Furthermore, studies by Burton (2013) and Rakusin (2024) highlighted the value of collaboration between teachers and communities. Burton's research in the Philippines found that teachers and parents believed in the program's potential despite facing resource limitations. However, they emphasized the need for collaborative relationships and community support to overcome these challenges. Similarly, Rakusin emphasized the importance of contextualized teaching materials, suggesting that community involvement in developing such resources could be beneficial.

While Purcia and Castante's (2023) study identified some teacher reservations about MTB-MLE, their recommendation to involve educators in curriculum development highlights the value of stakeholder engagement. The Department of Education can create a more effective and supported program by incorporating teacher expertise and addressing their concerns.

In conclusion, fostering strong relationships between schools and communities is essential for the success of MTB-MLE programs. Studies consistently point to the positive impact of community support on student learning and teacher morale. The findings offer valuable points of consideration for policymakers to look into the grassroots reality and optimize community involvement as a strategic component of language-based educational reforms, ensuring that MTB-MLE is consistent with the particular linguistic and cultural contexts of the communities it serves. By collaborating with stakeholders, developing culturally relevant resources, and fostering a shared vision for education, communities can play a vital role in building a thriving MTB-MLE environment.

3.2 Functional Framework for MTB-MLE Implementation in the Philippines

Based on the emerging themes, a functional framework was developed to provide a structured approach to understanding and addressing the grassroots reality when it comes to implementing MTB-MLE in the Philippines. The recurring themes are presented at the framework's core, including teacher preparedness and training, linguistic diversity and language selection difficulty, limited resources and difficulty in translation, and community engagement and support. Accompanied by the circular arrows, the themes that emerged from the scoping review on the implementation of the policy are revealed as self-perpetuating problems, where the same problems repeat themselves given their different contexts.

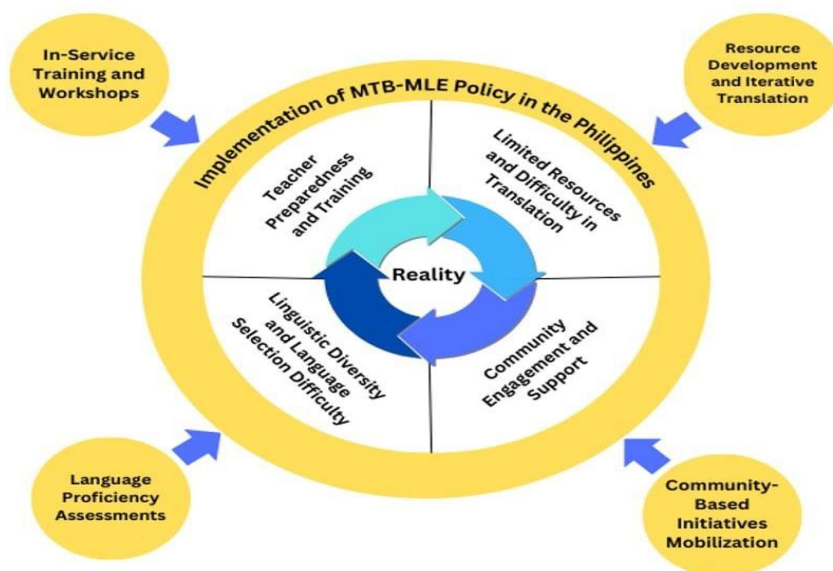


Figure 1. Functional Framework for MTB-MLE Implementation in the Philippines

Many teachers are not adequately trained to teach in the mother tongue. Also, deciding which languages to use as mediums of instruction in various regions is complex. As reported, there is often a lack of consensus on which dialects or language variations to prioritize, leading to implementation delays and inconsistencies. Aside from these, many mother tongues have a glaring shortage of teaching materials, textbooks, and resources. Also, a disconnect between schools and local communities is apparent, leading to limited support and understanding of the policy's benefits and difficulty in gaining the necessary local backing.

With these realities at the core of the implementation, several recommendations are presented, serving as facilitating forces in the effective implementation of the policy.

Firstly, in-service training and workshops may be done to enhance teacher readiness and competence in delivering MTB-MLE. Schools may conduct regular in-service training programs and workshops focusing on MTB-MLE pedagogy, lesson planning, and classroom management in a multilingual setting. Partnering with local universities and educational experts may provide teachers with ongoing professional development tailored to their specific linguistic contexts. This aligns with the study of Jimenez et al. (2015), which found in-service training for teachers on MTB-MLE policy as an essential move to improve their knowledge and confidence in implementing the policy.

Schools may focus on developing targeted training modules that address specific teaching strategies for multilingual classrooms. These modules should include differentiated instruction and culturally responsive pedagogy to ensure that teachers are well-equipped to handle the diverse linguistic needs of their students. Establishing Bayanihan Learning Circles (BLCs) may also provide opportunities for teachers to collaborate, share best practices, and discuss challenges they encounter. Moreover, incorporating simulation exercises and role-playing activities into workshops can give teachers hands-on experience in managing multilingual classrooms, making theoretical knowledge more practical and applicable. It must be noted that regular feedback sessions and follow-up workshops are essential for addressing ongoing challenges and continuously improving teaching practices.

Resource development and iterative translation are also suggested to create and distribute quality educational materials in various mother tongues. The study of Balane et al. (2018) found that the availability of mother tongue-based teaching materials and resources is a critical factor in the success of MTB-MLE policy implementation. Also,

schools may engage in an iterative translation process where local stakeholders review and refine the translated materials to ensure accuracy and relevance (Tan et al., 2020).

Creating localized educational materials through collaboration through the BLCs may ensure its content is culturally relevant and accurate. Pamanang Aklatan, or digital libraries of mother tongue-based resources easily accessible to teachers, students, and parents, may also be materialized to facilitate the wide distribution of high-quality materials. Establishing such resource centers within schools will provide teachers with access to a variety of MTB-MLE teaching materials, including books, visual aids, and digital resources. Aside from this, a cyclical review process for educational materials, where feedback from teachers and students is regularly incorporated, can help maintain the relevance and effectiveness of these resources. Additionally, organizing translation workshops that bring together teachers and local experts to translate and adapt educational content will foster a sense of ownership and ensure high-quality translations.

Thirdly, the conduct of language proficiency assessments to identify students' language abilities and place them in appropriate language tracks is also recommended (Mendoza et al., 2020). This is to assess students' language proficiency and provide targeted language support to ensure that they can access education in their mother tongue.

Comprehensive language proficiency assessment tools are crucial for evaluating students' listening, speaking, reading, and writing skills in their mother tongue. Implementing ongoing language assessments will allow for continuous monitoring of students' progress, enabling teachers to adjust their instructional strategies as needed. Based on assessment results, schools can provide targeted language support programs, such as tutoring or supplemental language classes, to ensure that all students achieve language proficiency. For this to be a success, training teachers on how to administer and interpret language proficiency assessments, and using the results to inform their teaching practices may be done to further support students' language development. It is also important to involve parents in the process by educating them on the importance of language assessments and how they can support their children's learning at home.

Lastly, it is imperative to mobilize community-based initiatives that involve parents, teachers, and local government units to foster community support and involvement in the MTB-MLE program (Gonzales et al., 2019). Schools may launch community outreach programs to educate parents and local leaders about the benefits of MTB-MLE. To build a strong support network, community participation may also be heightened through school activities, such as language festivals and cultural events.

Community-based initiatives are essential for fostering support and involvement in the MTB-MLE program. Conducting workshops for parents can educate them about the benefits of MTB-MLE and how they can contribute to their children's language development. Organizing cultural exchange programs and language festivals will also celebrate linguistic diversity and engage the community in the MTB-MLE program. This campaign may have a wider reach through public awareness campaigns through local media. Social media may also be utilized to highlight the importance and benefits of MTB-MLE, fostering broader community support. Furthermore, establishing volunteer programs where community members, including parents and local elders, assist in classrooms and share their linguistic and cultural knowledge, will further enrich the learning environment.

By implementing these comprehensive and specific recommendations, schools can significantly enhance the effectiveness of MTB-MLE programs ensuring that students receive high-quality education in their mother tongues while promoting linguistic and cultural diversity.

4.0 Conclusion

A scoping review of existing literature revealed key challenges in the implementation of MTB-MLE in the Philippines, including teacher preparedness and training, linguistic diversity and language selection difficulties, limited resources and translation challenges, and community engagement and support. To address these issues, the study proposed a functional framework, recommending the conduct of in-service training, resource development, language proficiency assessments, and community-based initiatives. These are perceived to be facilitating factors in the effective implementation of MTB-MLE.

After over a decade of MTB-MLE implementation in the Philippines, the policy continues to face grassroots challenges, necessitating policymakers' decisive actions. Hence, as the Philippines strives to improve its educational outcomes while honoring linguistic diversity and cultural heritage, it is imperative to maintain an ongoing dialogue with policymakers, communities, educators, and industry stakeholders. This collaborative approach ensures that policies like MTB-MLE are continually refined based on feedback and evolving needs.

5.0 Contributions of Authors

Czarina Alexandria P. Wata – project administration, conceptualization and research design, literature review and data collection, analysis and interpretation, writing and drafting, reviewing and editing; Charis G. Oraiz – literature review and data collection, analysis and interpretation, writing and drafting, visualization; John Louie D. Galang – conceptualization and research design, literature review and data collection, methodology, analysis and interpretation, writing and drafting; Cristian V. Dones – literature review and data collection, methodology, analysis and interpretation, writing and drafting.

6.0 Funding

This research paper is an academic requirement; hence, it did not receive any particular grants from funding sources in various sectors.

7.0 Conflict of Interests

All authors of this research declare that there is no conflict of interest pertaining to the publication of this paper.

8.0 Acknowledgment

The researchers wish to extend their heartfelt appreciation to Dr. Jay Mark Santos, their esteemed Language Planning and Policy professor whose unwavering support and invaluable contributions have significantly enriched this research paper, rendering it worthy of publication. His inspiring words of encouragement have served as a catalyst, propelling them towards pursuing excellence in this endeavor.

9.0 References

- Aguasan, J., De Ocampo, K., Domingo, E., Pacol, J., Parchamento, J., Santos, M.A., & Fabrigas, N. (2023). Issues and concerns in teaching mother tongue-based multilingual education during the pandemic. *IOER International Multidisciplinary Research Journal*, Vol. 5, No.2. doi: 10.54476/ioer-imrj/521443
- Alberto, M. R. (2016). Challenges and coping strategies in the implementation of Mother Tongue Based Multilingual Education (MTB-MLE) in the Philippines. *People: International Journal of Social Sciences*, 3(2)
- Balane, J., Rodriguez, M., & Gonzales, J. (2018). The availability of mother tongue-based teaching materials and resources: A critical factor in the success of Mother Tongue- Based Multilingual Education (MTBMLE) policy implementation in the Philippines. *Journal of Educational Research*, 111(4), 271-282
- Boligol, M., Longakit, M.A., Pacaldo, L., & Derasin, L.M. (2023). Mountain school teachers on MTB-MLE program: A hermeneutic phenomenological inquiry. *Eur.Chem.Bull (Special Issue 7)*, 2145-2163. doi: 10.31838/ecb/2023.07.si07.013
- Burton, L. A. (2013). Mother tongue-based multilingual education in the Philippines: Studying top-down policy implementation from the bottom up. *Budapest International Research and Critics in Linguistics and Education (BirLE) Journal*, 5(4), 422-431
- Cabansag, J. (2016). The implementation of mother tongue-based multilingual education: Seeing it from the stakeholders' perspective. *International Journal of English Linguistics*, Vol.6, No.5, 1923-8703. doi:10.5539/ijel.v6n5p43
- Cansino, J. (2023). The Philippines MTB-MLE program: Reconciling its utilitarian and ideological rationales. *East Asian Journal of Multidisciplinary Research*, Vol 2, No. 2:780-798. doi: 10.55927/eajmr.v2i2.2996
- Cariaga, R. (2015). Challenges encountered in the implementation of Mother Tongue-Based Multilingual Education (MTB-MLE) in the Philippines. *People: International Journal of Social Sciences*, 3(2).
- Department Order No. 74, s. 2009. Institutionalizing Mother-tongued based Multilingual Education (MLE). https://www.deped.gov.ph/wp-content/uploads/2018/10/DO_s2009_74.pdf
- DepEd Order No. 16, s. 2012. Guidelines on the Implementation of the Mother Tongue- Based-Multilingual Education (MTB-MLE). <https://www.deped.gov.ph/2012/02/17/do-16-s-2012-guidelines-on-the-implementation-of-the-mother-tongue-based-multilingual-education-mtb-mle/>
- Eclipse, A. N., & Tenedero, P. P. (2018). The linguistic landscape of Manila central post office: A macro-linguistic analysis. *Asian Journal of English Language Studies (AJELS)*. <https://doi.org/10.59960/6.a6>
- Eslit, R. M. (2017). General assessment of the implementation of Mother Tongue-Based Multilingual Education (MTB-MLE) in the Philippines. *People: International Journal of Social Sciences*, 3(2)
- Espada, M. L. F. (2017). Challenges encountered in the implementation of Mother Tongue-Based Multilingual Education (MTB-MLE) in the Philippines. *People: International Journal of Social Sciences*, 3(2). doi: 10.1007/s11159-011-9254-6
- Gaylo, P. J. B. (2020). Implementing Mother Tongue Based-Multilingual Education (MTB- MLE): Outcomes and challenges. *International Social Science Review*, 2, 148-183
- Gilmore, A. (2007). Authentic materials and authenticity in foreign language learning. *Language teaching*, 40(2), 97-118. <https://doi.org/10.1017/s0261444807004144>
- Gonzales, J., Rodriguez, M., & Tan, M. (2018). Language use and student learning outcomes in Mother Tongue-Based Multilingual Education (MTBMLE) policy in the Philippines. *Journal of Educational Research*, 111(4), 271-282
- Hornberger, N. H. (2002). The continua of biliteracy and educational language policy in the United States. *Language and Education*, 14(3), 235-256. doi: 10.1080/09500780208666824
- Hunahunan, S. F. (2017). Challenges and coping strategies in the implementation of mother tongue-based multilingual education (MTB-MLE) in the Philippines. *People: International Journal of Social Sciences*, 3(2)
- Jimenez, R., Mendoza, J., & Santos, M. (2015). The impact of in-service training on teacher knowledge and confidence in implementing the Mother Tongue-Based Multilingual Education (MTBMLE) policy in the Philippines. *Journal of Education and Human Development*, 4(2), 1-10
- Medilo, (2016). The experience of mother tongue-based multilingual education teachers in southern Leyte, Philippines. *International Forum Journal*, 19(2), 64-79
- Melchor, J. L. (2020). The suitability of Mother Tongue-Based Multilingual Education (MTB- MLE) learning materials: An analysis of K to 12 Ilocano short stories. *University of the Philippines-Diliman*
- Mendoza, J., Jimenez, R., & Santos, M. (2020). The impact of language proficiency assessments on student placement and learning outcomes in Mother Tongue-Based Multilingual Education (MTBMLE) policy in the Philippines. *Journal of Educational Research*, 113(2), 151-162
- Metila, R. A., Pradilla, L. A. S., & Williams, A. B. (2016). Investigating best practices in the Mother Tongue-Based Multilingual Education (MTB-MLE) program in the Philippines. *Quezon City: University of the Philippines*
- Mondez, R. (2013). Appropriateness of Mother Tongue-Based Multilingual Education (MTB- MLE) in urban areas: a synthesis study. *International Journal of Science and Research*, India Online ISSN: 2319-7064
- Monie, J. C., Monie, J. C., Monie, J. C., Monie, J. C., & Monie, J. C. (2017). Challenges in the implementation of mother tongue-based multilingual education (MTB-MLE) in the Philippines. *People: International Journal of Social Sciences*, 3(2)
- Oliveros, C. J. G. (2024). Challenges in the implementation of mother tongue-based multilingual education (MTB-MLE) in the Philippines. *People: International Journal of Social Sciences*, 8(1)
- Ong'uti, L., Indoshi, F. C., & Okwach, T. (2016). Attitudes of teachers and learners towards the use of mother tongue as a medium of instruction in lower primary schools in Kenya. *International Journal of Humanities and Social Science*, 6(9), 106-117
- Purcia, E. L., & Castante, N. S. (2023). The lens of MTB-MLE teachers in public elementary schools. *American Journal of Multidisciplinary Research and Innovation*, 2(4), 83-92. <https://doi.org/10.54536/ajmri.v2i4.1818>
- Rakusin, M. (2024). Breaking norms, accelerating learning recovery, building a case of equity in the Philippines. *CIES 2024 Presentation*. <https://shared.rti.org/sub-topic/language-instruction>
- Rakusin, M. (2024). Longitudinal study of literacy and language acquisition in the Philippines. *CIES 2024 Presentation*. <https://shared.rti.org/sub-topic/language-instruction>

- Rossi, P. H., Lipsey, M. W., & Freeman, H. E. (2024). *Evaluation: A systematic approach*. 7th ed. Thousand Oaks, CA: Sage Publications, Inc.
- RTI International. (2024). Longitudinal study of literacy and language acquisition in the Philippines [CIES 2024 presentation]. [https://shared.rti.org/content/longitudinal-study-literacy-and-language-acquisition-philippines-cies-2024-presentation\[4\]](https://shared.rti.org/content/longitudinal-study-literacy-and-language-acquisition-philippines-cies-2024-presentation[4])
- Sanchez, G., Tomas, C., & Pe, S. (2023). Mother tongue-based multilingual education: the case of Cervantes District. *Journal of Humanities and Social Sciences Studies*, ISSN: 2663-7197. doi: 10.32996/jhsss
- Skoropinski, X. (2013). An exploration of the responses of stakeholders to a mother tongue-based multilingual education (MTB-MLE) programme being implemented in pilot schools in Mindanao, Philippines. *Journal of Multidisciplinary Research and Innovation*, 2(4), 83–92. <https://doi.org/10.54536/ajmri.v2i4.1818>
- Tan, M., Rodriguez, M., & Gonzales, J. (2020). The iterative translation process: A critical factor in ensuring accuracy and relevance of translated materials for Mother Tongue-Based Multilingual Education (MTBMLE) policy in the Philippines. *Journal of Teacher Education*, 71(3), 243-255. doi: 10.1177/0022487119900020
- Tañiza, F. N., Kilag, O.K., Andrin, G., Groenewald, E. S., Abella, J., & Cordova, N. (2024). Top-down implementation of mother tongue-based multilingual education from grassroots perspectives. *Excellencia International Multi-Disciplinary Journal of Education*. Volume II, Issue No.1, 2994-9521. doi: 10.5281/zenodo.10548040
- Valerio, M. (2015). Stakeholders' perceptions of Mother Tongue-Based Multilingual Education (MTB-MLE) implementation in the Philippines. *People: International Journal of Social Sciences*, 3(2)
- Villacañas de Castro, L. S. (2016). The pedagogical turn in the research on cross-language transfer: Re-thinking the language interdependence and the language threshold hypotheses. *Tejuelo (Trujillo)*, Vol. 23, p. 201-227
- Williams, A. B., Metila, R. A., Pradilla, L. A. S., & Digo, L. D. (2014). The challenge of implementing MTB-MLE in a multilingual setting. *Australian Journal of Teacher Education*, 39(6), 154-168. doi: 10.14221/ajte.2014v39n6.11
- Yap-Dequina, et al. (2022). Exploring English teachers' experiences on Mother Tongue-Based Multilingual Education (MTB-MLE). *International Multidisciplinary Journal of Research for Innovation, Sustainability, and Excellence (IMJRISE)*, 1(3), 1-10

Assessment and Evaluation of a School-based Values Formation Program

Christopher A. Olaya

Matagbak Elementary School, Pililla, Rizal, Philippines
National Teachers College, Manila, Philippines

Author Email: christopher.olaya@deped.gov.ph

Date received: June 17, 2024

Date revised: June 28, 2024

Date accepted: July 3, 2024

Originality: 95%

Grammarly Score: 99%

Similarity: 5%

Recommended citation:

Olaya, C. (2024). Assessment and evaluation of a school-based values formation program. *Journal of Interdisciplinary Perspectives*, 2(8), 354-361. <https://doi.org/10.69569/jip.2024.0288>

Abstract. This study addresses the observed decline in values and moral character among Filipino students, as evidenced by their communication and interactions with peers, teachers, and others. To counter this trend, a school-based values formation program was implemented. The research aimed to evaluate the acceptability of the program. Using descriptive narrative and inferential statistics, the study found that the program has a profound and positive impact, effectively instilling positive values and character traits in students. The results indicated no significant difference in acceptability levels between parents and teachers, with both groups highly endorsing the project. These findings provide a strong case for schools to adopt the program to promote positive values and character traits among students. The study recommends implementing the program in all Pililla Sub-Office and Division of Rizal elementary schools, offering a practical solution to the observed decline in values. Furthermore, it encourages teachers to develop similar programs with varying scopes of values and character integration, providing a flexible approach to values formation. Establishing a regular values formation program as part of the annual school action plan is also advised, ensuring the sustainability of the program. Finally, the study recommends enhancing the existing program for greater effectiveness and conducting parallel studies considering additional variables, suggesting avenues for further research and program improvement.

Keywords: Values formation program; Program evaluation; Assessment and evaluation.

1.0 Introduction

The COVID-19 pandemic has profoundly impacted students' lives, significantly affecting their mental health, education, and daily routines. Filipino students, in particular, have shown a decline in values and moral ethics, evident in their communication with peers, teachers, and others. The increased use of technology, including mobile phones, multimedia, and social media, has contributed to this decline. The shift to autonomous learning during the pandemic has increased reliance on online education, altering how students develop their moral principles and character due to the reduced direct contact with teachers and peers. This change has resulted in a lack of respect for teachers, a diminished understanding of the importance of caring, a decline in ethical behaviour, and increased harassment (Suciati, 2023).

Traditional classroom settings have been replaced with online or modular learning, requiring students to study at home, often independently. Consequently, parents have assumed greater responsibility for their children's education (Gozum et al., 2021). Haryati (2013) emphasized that the success of developed nations is not solely due to natural resources but also to the excellent character traits of their citizens, such as honesty, hard work, responsibility, empathy, and patience. Character education aims to enhance student achievement and integrate character building. The pandemic has exacerbated educational disruptions, leading to significant learning losses.

Due to the pandemic, the Philippines is experiencing severe "learning poverty" (Lu, 2023). The Global Education Evidence Advisory Panel (GEEAP) highlighted that the damage to education will have long-term effects on children's well-being, including their mental health and productivity, making educational disruption a significant threat to recovery from COVID-19 unless addressed promptly.

The gap in students' moral and ethical behaviour has widened over the past two years, as evidenced by a decline in good manners and proper conduct. The Department of Education (DepEd) has recognized this issue and reintroduced Good Manners and Right Conduct (GMRC) in the curriculum, demonstrating the government's commitment to addressing this problem.

Values are central to social sciences and are transmitted through socialization, passing behaviors and attitudes from one generation to the next (Makarova, 2018). Republic Act No. 11476, the "Good Manners and Right Conduct and Values Education Act," underscores the importance of values education in developing young people's moral and ethical well-being. This act highlights the role of educational institutions in fostering patriotism, nationalism, respect for human rights, ethical and spiritual values, and critical and creative thinking.

Studies emphasize the importance of instilling respect, attitude, love, and nationalism. Bautista (2016) found that media influence and education significantly impact a person's morality. Educational institutions should enhance their curriculum to integrate values education, promoting desirable qualities alongside technological and conceptual life skills. Purba (2024) argued that education must include an understanding and appreciation of societal values to achieve complete human development. Guzman (2023) found that reading is linked to character development, enabling students to expand their horizons and promote compassion and curiosity. Moral education is essential for national progress, cultivating healthy, patriotic, honest, and sincere citizens.

Teaching good manners and right conduct requires collaboration among educators, parents, and the community, nurturing respectful and kind-hearted individuals who will contribute positively to society (David, 2024). Social media also influences students' moral development, necessitating parental supervision to prevent behaviors such as bullying (Idrus et al., 2023).

Children in their formative years, typically ages 2-4, need the most support as they begin to form their perspectives on life (Kington et al., 2013). Matagbak Elementary School recognizes the need to strengthen values formation and has committed to implementing programs and projects to bridge this gap. That is why, a values formation program was established. The research aimed to evaluate the acceptability of the program.

2.0 Methodology

2.1 Research Design

The study utilized a descriptive research method to evaluate the development and acceptability of the values formation program. This method was chosen to gather comprehensive information about existing conditions, involving the description, collection, analysis, and classification of data to make accurate interpretations.

2.2 Research Participants

The respondents included nine teachers and 165 parents in Matagbak Elementary School. The respondents were chosen using purposive sampling.

2.3 Research Instrument

The researcher developed the necessary paraphernalia and learning materials and promoted the project. A questionnaire checklist was created to assess the project's acceptability among parents and teachers. The questionnaire checklist with a Likert scale was prepared to identify the level of acceptability of the respondents in the project.

2.4 Data Gathering Procedure

After approval, the researcher personally administered the instrument to the parents and teachers.

2.5 Data Analysis Procedure

The gathered data was statistically analyzed using several tools. In order to identify the number of parent respondents, probability random sampling was used. The mean was calculated to evaluate the project's acceptability in accuracy, applicability, user-friendliness, workability, completeness, modifiability, and clarity. Additionally, an independent t-test was used to determine whether there was a significant difference between teachers' and parents' perceptions of the projects' acceptability across these specified categories.

3.0 Results and Discussion

3.1 Program Development

The researcher initiated the development of the Project entitled "Let's Cultivate Good Manners Today" by presenting a comprehensive project proposal to the school head of Matagbak Elementary School. This proposal included instructional materials, modules, learning competencies, a complete program schedule, and plans for monitoring and evaluation. After receiving approval from the school head, the pre-implementation phase commenced. This phase involved planning, meetings, and identifying learners' needs regarding values formation and program development. Orientation meetings were also held for all teachers and parents.

A new school mantra, "In Matagbak Elementary School, Every Child is Cared," was introduced during the implementation phase. An information drive campaign disseminated the five core values, called the "5M's of MATESIAN": Godly, Courteous, Honest, Helpful, and Diligent. This was achieved through classroom and office postings and distributing reading materials about the 5M's. Additionally, the "the Oath of MATESIAN" was recited daily during the raising ceremony to reinforce these values among learners. The School Learning Action Cell on Values Formation was also organized to support teachers in providing relevant learning resources for this campaign.

3.2. Relevance of the Program

Based on the teachers' perspective on the project's relevance in instilling positive values and character traits in their students, they have seen the project as very helpful. Since introducing the different activities, their learners have shown a positive attitude, especially when it comes to the 5M's of MATESIAN.

Teacher 2 stated, *"I have seen the importance and application of the project. Through constant reminders of the 5Ms' of MATESIAN, they can follow them and realize that the different values they are citing become an everyday attitude. I do hope that this will be the start of their change."*

Teacher 5 added, *"The school mantra is relevant because they have believed in it, and we all become aware of our responsibility to our students. It is indeed a turning point in how we should inculcate in the minds of every learner that they are the main reason why our institution was built."*

Citing these values makes their character and attitude grow positively. Some students always smile and never forget to give a good greeting to their teachers and parents. Po and Opo were always heard of inside the classroom, and students showed the love of God in their classes. Parents are so happy seeing their children have a positive attitude in their learning at home. Some parents were interviewed to see if the program was effective, and they suggested that it was a great help in inculcating good manners in their children. Others were so grateful for how their sons or daughters talked to them with courtesy and kindness. Also, they suggest that the school must continue to implement the program so that it will help them in the long term.

Parent 15 expressed, *"I am so happy about how the school provides for our children. Because of the pandemic, we cannot teach our children, especially regarding values and moral character. I am ashamed that, as a parent, I don't have much time to teach my children all the time. That is why when face-to-face learning started, this gave us a great relief."*

Parent 21 uttered, *"Thank you for your sacrifices, our dear teachers. Thank you for always looking out for the welfare of our children, and that is how you teach them with your heart. We can say anything more but only to give you words of appreciation."*

3.3 Challenges and Opportunities

Challenges and opportunities must be addressed for the program to be sustained. During the project implementation, some challenges were the acceptance of the teachers and parents that there was something wrong or a problem with the values and attitudes of the learners. There is always an opportunity to solve this problem. Parents could provide feedback on their children's attitudes and values. The support of the parents in implementing the program is quite high since they realize how it will help them positively. Teachers show additional enthusiasm in their teaching profession because students' attitudes change, affecting the teaching and learning process. With these opportunities, Project "Let's Cultivate Good Manners Today" will be a great addition to the schools' successful project for the years to come.

Teacher 1 cited, *"The introduction of the project and the unique way of implementing it provides a new way of inculcating good manners and right conduct to our students. Although this project has some challenges, like students not following the school mantra or not reading the reading materials intended for the project, it is manageable and can be followed through. This project is successful and must be sustained the following year."*

3.4 Acceptability of Project

In terms of Accuracy

Table 1. Descriptive statistics of the acceptability of the project in terms of accuracy

Accuracy	Parent		Teacher	
	Mean	Interpretation	Mean	Interpretation
1. Presents and explains the content properly.	4.64	High	4.89	High
2. Practice appropriate skills	4.75	High	4.78	High
3. Diagnoses measurement	4.82	High	4.89	High
4. Provides accurate and precise information that satisfies the needs of the learners.	4.87	High	4.89	High
Average	4.77	High	4.86	High

Table 1 presents the computed mean on the project's acceptability level concerning accuracy, as perceived by parents and teachers. According to the table, parents rated the accuracy of the project as highly acceptable, with an average mean of 4.77. Similarly, teachers rated the accuracy highly acceptable, with an average mean of 4.86. Both groups perceived all items related to accuracy as highly acceptable. These findings are consistent with the study by Taborada (2019), where two sets of respondents highly accepted a developed program of computer-aided instruction on selected topics in differential calculus in terms of accuracy, applicability, user-friendliness, and other factors, using the weighted mean as the basis for the results. This indicates that the developed system was an effective instructional tool in the teaching and learning process. The high acceptability ratings from parents and teachers imply that they were adequately informed and provided accurate information for implementing the project.

In terms of Applicability

Table 2. Descriptive statistics of the acceptability of the project in terms of applicability

Accuracy	Parent		Teacher	
	Mean	Interpretation	Mean	Interpretation
1. Executes according to plan.	4.66	High	4.67	High
2. Serves as a learning tool in educating the intended beneficiaries.	4.70	High	4.78	High
3. Has appropriate activities for the learners.	4.53	High	5.00	High
4. Easy to understand and follow the flow of the project.	4.65	High	4.89	High
Average	4.63	High	4.83	High

Table 2 presents the computed mean on the level of acceptability of the project concerning applicability as perceived by parents and teachers. The table shows that the project is deemed highly acceptable in terms of applicability, with parents giving it an average rating of 4.63 and teachers giving it an average rating of 4.83. Both groups of respondents rated all items related to applicability as highly acceptable. This suggests that parents and teachers believe the project can effectively apply to students. The high level of acceptability in terms of applicability implies that the project was well-guided and that activities were adequately documented, contributing to the students' positive experiences in the program.

In terms of Use-friendliness

Table 3. Descriptive statistics of the acceptability of the project in terms of user-friendliness

Accuracy	Parent		Teacher	
	Mean	Interpretation	Mean	Interpretation
1. Is easy to understand and follow.	4.89	High	4.67	High
2. Is significant and useful to the learners.	4.70	High	4.78	High
3. Effectively performs its task and function.	4.61	High	4.56	High
4. Provides accurate and precise information that satisfies the needs of the learners.	4.51	High	4.56	High
Average	4.68	High	4.64	High

Table 3 presents the computed mean on the level of acceptability of the project concerning user-friendliness, as perceived by parents and teachers. The table shows that the project is considered highly acceptable in terms of user-friendliness, with parents giving it an average mean rating of 4.68 and teachers giving it an average mean rating of 4.64. Both groups rated all items related to user-friendliness as highly acceptable. This indicates that the project is user-friendly and highly accepted by both groups of respondents. The high level of user-friendliness suggests that the project can be easily followed, as evidenced by the students' effective performance of assigned tasks. This finding supports the statement by Bangayan et al. (2013) that user-friendly and personalized interactive learning is not only a new insight for learners but also an innovative way of learning that can enhance student engagement and effectiveness in computer education.

In terms of Workability

Table 4. Descriptive statistics of the acceptability of the project in terms of workability

Accuracy	Parent		Teacher	
	Mean	Interpretation	Mean	Interpretation
1. Does what it is supposed to implement.	4.84	High	5.00	High
2. Performs according to plan.	4.89	High	5.00	High
3. No problems were encountered during the implementation of the program.	4.73	High	4.89	High
4. Has scheduled activities that are feasible and attainable.	4.70	High	4.44	High
Average	4.79	High	4.83	High

Table 4 presents the computed mean on the level of acceptability of the project concerning workability as perceived by parents and teachers. The table shows that the project is considered highly acceptable regarding workability, with parents giving it a general mean of 4.79 and teachers giving it a general mean of 4.83. Both groups interpreted all items as highly acceptable. This suggests that the project is attainable and workable and can be implemented according to plan, with activities and objectives that the students can achieve. These findings align with Campo's (2013) study, which found that the multimedia module in music was rated as outstanding in terms of acceptability and workability, indicating a high level of acceptance by respondents.

In terms of Completeness

Table 5. Descriptive statistics of the acceptability of the project in terms of completeness

Accuracy	Parent		Teacher	
	Mean	Interpretation	Mean	Interpretation
1. Plans and program organization were done.	4.68	High	4.44	High
2. Orientation of the program and communication with other stakeholders were achieved.	4.70	High	4.78	High
3. Activities were completed entirely.	4.89	High	5.00	High
4. Monitoring and evaluation have been conducted with the results of the program course.	4.70	High	4.78	High
Average	4.74	High	4.75	High

Table 5 shows the computed mean on the level of acceptability of the project concerning completeness, as perceived by parents and teachers. The table indicates that the project is highly acceptable in terms of completeness, with parents giving it an average mean of 4.74 and teachers giving it an average mean of 4.75. Additionally, both groups rated all items related to completeness as highly acceptable. This means that all

necessary activities, such as orientation, diagnostic and achievement tests, and student attendance, were fully completed during the program's duration and were highly acceptable to parents and teachers.

In terms of Modifiability

Table 6. Descriptive statistics of the acceptability of the project in terms of modifiability

Accuracy	Parent		Teacher	
	Mean	Interpretation	Mean	Interpretation
1. It can be upgraded as required.	4.89	High	4.22	High
2. Allows modification if needed.	4.89	High	4.89	High
3. Functions in a simple manner.	4.79	High	5.00	High
4. Can be adapted based on student skills.	4.70	High	4.78	High
Average	4.82	High	4.72	High

Table 6 presents the computed mean on the project's acceptability level concerning modifiability, as perceived by parents and teachers. The table indicates that the project is highly acceptable in modifiability, with parents giving it an average mean of 4.82 and teachers giving it an average of 4.72. Both groups of respondents rated all items related to modifiability as highly acceptable. This suggests that parents and teachers believe the project can be easily modified and personalized. These findings are consistent with Moore et al.'s (2012) study, which emphasizes the importance of modifying and personalising projects or programs to achieve new and innovative learning approaches.

In terms of Clarity

Table 7. Descriptive statistics of the acceptability of the project in terms of clarity

Accuracy	Parent		Teacher	
	Mean	Interpretation	Mean	Interpretation
1. The scope of the program has been explained	4.55	High	4.78	High
2. Competencies that will be developed are clear to all tutees	4.39	High	4.67	High
3. Program modules were easily followed	4.70	High	4.67	High
4. Program duration was clarified to students and parents	4.59	High	4.78	High
Average	4.56	High	4.72	High

Table 7 presents the computed mean on the level of acceptability of the project concerning clarity, as perceived by parents and teachers. According to the table, parents rated the project as highly acceptable, with an average mean of 4.56. On the other hand, teachers perceived it as slightly higher, with an average mean of 4.72, and interpreted it as highly acceptable. All clarity-related items were rated as highly acceptable for both groups of respondents. This suggests that the project is clear, and the competencies are well-explained, learned, and developed, ensuring clarity for the students. These findings indicate that parents and teachers agree that the project effectively communicates its objectives and activities, ensuring a clear understanding among the students involved.

Overall Acceptability

Table 8. Descriptive statistics of the overall acceptability of the project

Accuracy	Parent		Teacher	
	Mean	Interpretation	Mean	Interpretation
1. Accuracy	4.77	High	4.86	High
2. Applicability	4.63	High	4.83	High
3. User Friendliness	4.68	High	4.64	High
4. Workability	4.79	High	4.83	High
5. Completeness	4.74	High	4.75	High
6. Modifiability	4.82	High	4.72	High
7. Clarity	4.56	High	4.72	High
Overall	4.71	High	4.76	High

Table 8 presents the composite average mean on the level of acceptability of the project as perceived by parents and teachers. The table indicates that overall, the project is highly acceptable to both respondents, with an average mean of 4.71 for parents and 4.76 for teachers. Parents and teachers rated the project highly acceptable across different aspects, including accuracy, applicability, user-friendliness, workability, completeness, modifiability,

and clarity. These findings suggest that the project was well-received and endorsed by parents and teachers. It underscores its potential as an effective program for instilling positive values and character traits in students. Overall, the high levels of acceptability across various dimensions indicate strong support for the project's role in enhancing students' moral and ethical development within the school context.

3.5 Difference in the Respondents' Responses

Table 9. Analysis of the difference in the respondents' responses

	Respondents	Mean	SD	t	df	Sig	Ho	VI
Accuracy	Parent	4.77	0.335	-0.791	172	0.430	FR	NS
	Teacher	4.86	0.253					
Applicability	Parent	4.63	0.319	-1.834	172	0.068	FR	NS
	Teacher	4.83	0.250					
User Friendliness	Parent	4.68	0.316	0.350	172	0.727	FR	NS
	Teacher	4.64	0.397					
Workability	Parent	4.79	0.203	-0.618	172	0.537	FR	NS
	Teacher	4.83	0.125					
Completeness	Parent	4.74	0.262	-0.102	172	0.919	FR	NS
	Teacher	4.75	0.217					
Modifiability	Parent	4.82	0.312	0.909	172	0.365	FR	NS
	Teacher	4.72	0.232					
Clarity	Parent	4.56	0.288	-1.663	172	0.098	FR	NS
	Teacher	4.72	0.317					

Table 9 presents the computed t-values on the level of acceptability of the project as perceived by parents and teachers across different criteria: accuracy ($t = 0.430$), applicability ($t = 0.068$), user-friendliness ($t = 0.727$), workability ($t = 0.537$), completeness ($t = 0.919$), modifiability ($t = 0.365$), and clarity ($t = 0.098$). The computed t-values indicate no statistically significant difference in the perceptions of parents and teachers regarding the acceptability of the project across these criteria. This conclusion is drawn because the computed t-values for all criteria exceed the tabular t-value at the 0.05 significance level. Therefore, the study fails to reject the null hypothesis, which posits that there is no significant difference in how parents and teachers perceive the project's acceptability.

This implies that both parents and teachers have similar perceptions regarding the project's accuracy, applicability, user-friendliness, workability, completeness, modifiability, and clarity. Their consensus supports the project's overall acceptability and effectiveness in instilling positive values and character traits in students, reinforcing its potential as a valuable educational initiative.

4.0 Conclusion

Based on the study results, it is evident that developing the project has proven effective in instilling positive values and character traits in students, as perceived and accepted by both parents and teachers. Implementing this program involves following structured steps and diligent monitoring to ensure its ongoing success. Furthermore, the project's success suggests its potential applicability in other schools to reinforce their efforts in nurturing positive values and character among students. Promoting and extending the project to all elementary schools within the Pililla Sub-Office and Division of Rizal is crucial, aiming to foster a consistent approach to character development. Encouraging educators to adopt similar programs with diverse focuses on values and character integration is also beneficial. Incorporating the project as a regular component of the school's annual action plan is essential for sustained impact. Additionally, there is a need to continuously enhance the project to maximize its effectiveness and productivity for students. Future studies in different school settings can explore parallel initiatives while considering additional variables to enrich character education efforts further.

5.0 Contributions of Authors

The sole author conceptualized and implemented the study.

6.0 Funding

This work received no specific grant from any funding agency.

7.0 Conflict of Interests

The author declares no conflicts of interest about the publication of this paper.

8.0 Acknowledgment

The researchers sincerely thank The National Teachers College for their trust and permission to conduct this study. Special appreciation is extended to Dr. Dennis G. Caballes for his invaluable wisdom and guidance, which significantly contributed to the enhancement of this scholarly work. The researchers also acknowledge the Department of Education – Matagbak Elementary School, including the school principal, teachers, and parents, for their unwavering assistance and cooperation during the data collection phase. Their support was instrumental in the successful completion of this research endeavor. Acknowledgement is further extended to all the evaluators for their invaluable feedback and contribution, which greatly enriched the quality of this research. Gratitude is expressed to the reviewers who provided insightful recommendations to enhance the manuscript's quality and clarity. Lastly, heartfelt thanks are extended to family, friends, and our Almighty God for their unwavering support, encouragement, and blessings throughout this journey.

9.0 References

- Acosta, L. B. C. (2013). Interactive computer based learning in Windows XP and Microsoft Word. Unpublished master's thesis, University of Rizal System, Morong Rizal.
- Bangayan, R., et al. (2013). Interactive review in licensure examination. Unpublished undergraduate studies, University of Rizal System, Morong Rizal.
- Bautista, D. M. (2016). Students view on morality: A case of a Philippine higher educational institution. *International Journal of Pharmaceutics*, 3(6), 13.
- Buenviaje, C. (2009). Development and acceptability of modules in General Biology I. Unpublished master's thesis, University of Rizal System, Morong Rizal.
- Campo, A. (2013). Level of acceptability of the multimedia module in music multimedia instruction "What is the effect?" Unpublished research, STI Antipolo.
- David, S. L. (2024, April 14). Strengthening learner's good manners and right conduct. DepEdBataan.com Publications.
- Guzman, S. J. (2023). Reading as valued by Filipino secondary students: Its role in life. *International Journal of Advanced Multidisciplinary Studies*, 7.
- Gozum, I. E., et al. (2021, June 8). Emphasizing the role of parents in values education to children in their formative years during the COVID-19 pandemic. *International Journal of Research Studies in Education*, pp. 35-42. doi:10.5861/ijrse.2021.6145
- Haryati, S. (2017). Pendidikan karakter dalam kurikulum 2013. Retrieved from <http://lib.untidar.ac.id/wp-content/uploads> [Accessed in Bandung, Indonesia: 17 March 2017]
- Idrus, I., et al. (2023, September 15). Character and moral education based learning in students' character development. *International Journal of Evaluation and Research in Education (IJERE)*, pp. 1185-1194.
- Kington, A., Gates, P., & Sammons, P. (2013). Development of social relationships, interactions, and behaviors in early education settings. *Journal of Early Childhood Research*, 11(3), 292-311. doi:10.1177/1476718X13492936
- Lu, B. J. (2023, June 16). Fresh viewpoints: A new perspective. Philippine News Agency. Retrieved from <https://www.pna.gov.ph/opinion/pieces/704-addressing-effects-of-covid-19-amon?cv=1>
- Lovat, T. (2017). Values education as good practice pedagogy: Evidence from Australian empirical research. *Journal of Moral Education*, 46(1), 88-96. doi:10.1080/03057240.2016.1268110
- Medina, B. (2001). *The Filipino family*. University of the Philippines Press.
- Moore, M. G., & Kearsley, G. (2012). *Distance education: A systems view of online learning*. Wadsworth-Cengage Learning.
- Niekerk, M. V., & Breed, G. (2018). The role of parents in the development of faith from birth to seven years of age. *HTS Teologiese Studies/Theological Studies*, 74(2), a4773. doi:10.4102/hts.v74i2.4773
- Purba, C. K. (2024). Building moral character in students learning citizenship education. *International Journal of Students Education*, pp. 115-118.
- Republic Act No. 11476. (2020, July 13). "An act institutionalizing good manners and right conduct and values education in the K to 12 curriculum, appropriating funds therefor, and for other purposes". Retrieved from https://laws.chanrobles.com/republicacts/115_republicacts.php?id=11170#google_vignette
- Makarova, E., & H. W. (2018). Werte in der Familie: Wertevermittlung durch Erziehungsziele und Werthaltungen der Eltern. In A. K. Doring, & J. Cieciuc (Eds.), *Werteentwicklung in der Kindheit* (pp. 55-76). Liberi Libri.
- Taborada, R. C. (2019). Development and acceptability of multimedia materials in science and health for Grade Four pupils. Unpublished master's thesis, University of Rizal System, Morong Rizal.
- Suciati, I., et al. (2023, May 15). Character and moral education based learning in students' character development. *International Journal of Evaluation and Research in Education (IJERE)*, pp. 1185-1194. doi:10.11591/ijere.v12i3.25122

Internal Control System Landscape of a State University in a Highly Urbanized City

Jet R. Nillos*, Rowena M. Libo-on

Central Philippine University, Iloilo City, Philippines

*Corresponding Author Email: jetnillos@cpu.edu.ph

Date received: June 18, 2024

Date revised: June 29, 2024

Date accepted: July 3, 2024

Originality: 96%

Grammarly Score: 99%

Similarity: 4%

Recommended citation:

Nillos, J., & Libo-on, R. (2024). Internal control system landscape of a state university in a highly urbanized city. *Journal of Interdisciplinary Perspectives*, 2(8), 362-376. <https://doi.org/10.69569/jip.2024.0292>

Abstract. This qualitative case study approach allows for a detailed exploration of internal control systems in HEIs, focusing on their implementation and functioning within various institutional settings. By employing in-depth interviews, the study gathered comprehensive information on the internal control processes of a government-funded HEI in a highly urbanized city. The key findings reveal that the hiring process is thorough, ensuring fairness, transparency, and compliance with governmental and institutional regulations. The training process is well-organized within the institution's professional development framework. The procurement process is highly structured and transparent, emphasizing compliance and accountability. The budget process is formalized and governed by strict frameworks, and the payroll process is meticulously regulated to ensure accuracy, compliance, and transparency. Furthermore, the study underscores the need for public HEIs to continuously adapt their policies and procedures to the complex and evolving regulatory landscape, which is both time-consuming and costly. To enhance financial governance, ensure regulatory compliance, and maintain transparency and accountability, the study recommends training on the importance of following Commission on Audit (COA) guidelines and the Government Accounting Manual (GAM).

Keywords: Higher education institution; Internal control systems; Case study.

1.0 Introduction

The landscape of higher education in the Philippines is undergoing significant transformation, driven by policy reforms, increased demand for quality education, and heightened accountability measures (Commission on Higher Education [CHED], n.d.). In this dynamic environment, robust internal control systems within higher education institutions (HEIs) are more crucial than ever. Internal control systems, which consist of processes, mechanisms, and procedures, ensure institutional operations' efficiency, effectiveness, and compliance (Arens, Elder, Beasley, & Hogan, 2017). They are integral to financial management, maintaining academic integrity, safeguarding assets, and achieving organizational objectives. Specifically, internal control systems encompass policies, procedures, and mechanisms that ensure efficient organizational functioning while protecting resources and assets (Romney & Steinbart, 2018).

In government-funded HEIs, the Commission on Audit (COA) underscores the importance of internal controls in preventing fraud and mismanagement, maintaining financial reporting accuracy, protecting university property, and ensuring legal compliance (COA, 2018). The case study method, This case study explores the intricacies of internal control systems within Philippine HEIs with an emphasis on the experiences and perspectives of key stakeholders, it aims to provide a nuanced and holistic understanding of how internal control systems are perceived, experienced, and enacted in the context of Philippine higher education.

Managing internal control environments in universities is complex due to overlapping processes and procedures, inadequate reporting systems, insufficiently trained security personnel, a weak internal control framework, budgetary constraints, and diverse technologies (Tilly, 2022). Recent financial mismanagement and fraud incidents in several Philippine universities and colleges have led to negative consequences, including lost revenue, damaged reputations, and even institutional closures (GMA News, 2019). According to the 2022 Association of Certified Fraud Examiners (ACFE) Report to the Nations, businesses and educational institutions were scammed out of approximately \$3.6 billion in 2022, highlighting that the education sector is not exempt from fraud (Association of Certified Fraud Examiners, 2022).

Internal control systems have inherent weaknesses that can reduce their effectiveness, such as the potential for errors and staff manipulation through dishonesty (Rae, D., & Subramaniam, N., 2021). Management can bypass control procedures by influencing transactions or instructing subordinates. Additionally, existing controls can become ineffective as situations change over time. Internal control methods constrain employee behavior by requiring authorization, approval, and verification of transactions, thus creating an audit trail. They also divide responsibilities to prevent any individual from having excessive unsupervised access to the institution's assets (Mungaya et al., 2012, as cited in Mungai, 2022).

Several factors underscore the need for this study. First, existing literature on internal control systems in HEIs is predominantly quantitative, often overlooking qualitative aspects that provide deeper insights into the challenges and successes of these systems. Second, the unique cultural, economic, and regulatory context of Philippine HEIs necessitates a focused study to inform both local practices and broader theoretical frameworks. Third, recent higher education policy developments, such as implementing the Universal Access to Quality Tertiary Education Act, have pressured HEIs to enhance their governance and accountability structures (Santos, 2020). This case study sought to bridge the gap between policy and practice by offering evidence-based recommendations for strengthening internal control systems in Philippine HEIs. Doing so aims to contribute to the ongoing discourse on higher education governance and provide actionable insights for policymakers, educational leaders, and practitioners dedicated to fostering a more accountable and effective higher education system in the Philippines.

2.0 Methodology

2.1 Research Design

This study used a qualitative research approach to gain a better understanding of the internal control mechanism utilized by both public and private higher education institutions. Investigating social phenomena, identifying feelings associated with the issue, and comprehending the individuals' subjective experiences are the three main objectives of qualitative research (Mwita, 2022).

The study's objective is to gain a thorough description and analysis of the HEIs internal control, which will preferably be expressed in words rather than numbers and statistics. Hence, the researcher chose a qualitative design. The study's goal is to explain a specific instance in detail, it will specifically use a descriptive study technique. In this instance, the internal control practices of both public and private HEIs are examined.

The qualitative-descriptive research design was deemed appropriate for this study, as it aimed to reconcile the internal control systems of both public and private HEIs. This approach utilized key informant interviews and researcher observations to collect the necessary data (Smith & Brown, 2021).

2.2 Research Locale

This case study was conducted in Iloilo City, a highly urbanized city with a population exceeding 450,000 residents. The city is divided into seven districts: Jaro, La Paz, Lapuz, Mandurriao, Molo, Arevalo, and the City Proper. Each district hosts various educational institutions, offering diverse educational opportunities to residents and students from neighboring provinces. Iloilo City is home to five universities, each holding distinct prestige. The city's history as an educational hub dates back to the Spanish colonial period when the first schools were established. Over the years, Iloilo City has evolved into a key player in the educational sector in the Visayas and Mindanao regions, attracting students nationwide due to its reputable institutions and comprehensive academic programs. The higher education institutions in Iloilo City significantly contribute to the local economy by generating employment and fostering economic activities through their operations, student expenditures, and

institutional partnerships. Additionally, these institutions are integral to social development, providing educational opportunities that empower individuals and communities, drive social mobility, and address local and national issues through research and community service initiatives.

2.3 Research Participants

This study's participants were selected using purposive sampling, a method appropriate for choosing individuals with specialized knowledge or expertise in empirical investigations (Robinson, 2014). The study involved two personnel directly engaged with the internal control system at their higher education institutions (HEIs). To protect their identities, participants were assigned pseudonyms, ensuring anonymity and confidentiality in compliance with RA 10173, the Data Privacy Act.

In the narratives, "Rex" is the key informant, serving as the head of internal control at his HEI, while "Susan" provides insights on procurement as the head of procurement at her institution. This measure was implemented to guarantee informants' privacy throughout the research.

2.4 Instrument and Data Gathering Procedure

The researcher conducted in-person interviews with participants near their usual workplace. To avoid disrupting office work or operations, the interviews were scheduled outside working hours, during less busy times, or at times convenient for the participants. Each interview lasted a maximum of one hour. Participants were informed about the purpose of the interview, the types of questions asked, and how the data would be used. Participants' consent was also obtained to record the interview or take notes during the session.

The interview focused on one key question: "What are the internal control systems of a state university in the five components of internal control: control environment, risk assessment, control activities, information and communication, and monitoring?" This question aimed to gather comprehensive insights into the internal control mechanisms within the higher education institution.

Data triangulation was also applied to enhance the reliability and credibility of the study's results. The researchers used multiple sources of data, such as relevant government laws and regulations, and existing related literature on internal control frameworks; hence, this approach has not only enhanced the reliability of the research findings but also provided a richer and more in-depth knowledge of the research subject.

2.5 Data Analysis Procedure

The researcher employed the stages of thematic analysis as outlined by Braun and Clarke (2006). The data gathered from the in-depth interviews were transcribed and then analyzed. The transcripts were coded and categorized to identify patterns, which were subsequently recategorized to identify themes using Microsoft Word software. These themes were cross-referenced with existing documents to ensure consistency and depth.

The analysis process began with the interviews and continued through transcription, coding, pattern construction, categorization, and theme identification, culminating in the creation of narratives. The interactions and interplay between patterns, categories, and themes were analyzed throughout this process to establish their interrelationships based on the participants' narratives and supporting documents.

The entire data analysis was conducted manually. As the researcher was new to this type of research, this manual approach provided firsthand experience with the qualitative research process. The researcher was guided by a panel of experts and supported by reliable references provided by them throughout the analysis.

2.6 Ethical Considerations

The researcher submitted a letter to the Head of Internal Audit Service, endorsed by the adviser and dean of the School of Graduate Studies, to obtain permission for the study. Before collecting any data, the researcher secured ethical clearance and participant consent.

Confidentiality was afforded to all data acquired from participants. Identifying information was kept confidential, with data assigned an ID number so only the researcher could determine each participant's specific responses. During the discussion of findings, each participant was presented using a pseudonym.

Participation in this study was entirely voluntary. Participants were free to decide whether or not to participate and could withdraw from the study at any time without providing a reason. This ensured that their participation was based on informed consent and that they were aware of their right to withdraw.

3.0 Results and Discussion

This section discusses and analyzes the participants' responses when asked regarding the internal control system of a state university in the areas of five components of internal control: control environment, risk assessment, control activities, information and communication, and monitoring. As presented below, the following themes were derived from the participants' responses.

Theme 1: Compliance with Regulatory Requirements

Compliance with regulatory requirements is crucial for public higher education institutions (HEIs) in the Philippines to ensure they meet national standards, maintain accreditation, and provide quality education and services. Public HEIs in the Philippines operate under a stringent regulatory environment governed by various bodies, including the Commission on Higher Education (CHED), this agency establish policies and standards to ensure quality education and institutional accountability.

Rex shared his views on public higher education institutions (HEIs) practices regarding disseminating the code of ethics, employee training opportunities, and the hiring process. In disseminating the code of ethics in public HEI, Rex highlighted the significance of the flag ceremony. In this event, the code of conduct is recited and solemnly sworn to by the attendees. This ceremony is a regular and formal reminder of the expected behaviors and ethical standards. Participants internalise these principles by repeatedly reciting the rules and regulations, ensuring they remain aware of and committed to upholding the prescribed code of conduct. This practice helps to instill a sense of duty and integrity, reinforcing the importance of ethical behavior in their roles as government employees. He narrated saying,

“Even at the start, during the flag ceremony, we swear to the code of conduct for public servants and private employees because it is always duly disseminated. During every flag ceremony, you recite the do's and don'ts. That's one way of ingraining these things into your head; in other words, it engages the system to ensure that you always adhere to the prescribed code of conduct for government employees.”

In terms of training opportunities for their employees, he disclosed that employees are sent to institutional training programs annually as part of their professional development and performance targets. Professional associations such as the Association of Government Internal Auditors or the Philippine Institute of Certified Public Accountants (PICPA) organise these training programs. They are selected based on the employees' areas of specialization, available budget, and specific needs, such as the code of ethics training mandated by the civil service. Each year, employees have a goal in their Individual Performance Commitment Report (IPCR) to attend at least one relevant training session in their field, ensuring continuous learning and adherence to professional standards. He narrated,

“We are sent to institutional training, for example, by the Association of Government Internal Auditors or PICPA, depending on our area of specialization, the budget, or code of ethics training by the civil service. It depends, but yearly in our Individual Performance Commitment Report (IPCR), there is a target that you will be sent out for training once a year, but of course, it should be related to your field.”

Rex explained that training is an integral part of their professional development and is included in the Individual Performance Commitment Report (IPCR), and he even demanded the training. The process of attending training sessions is collaborative and proactive. AT mentions that they have already attended two training sessions by March, demonstrating a commitment to continuous improvement. The training needs assessment (TNA) is crucial in identifying appropriate training opportunities. This assessment can be based on the participant's self-identified

needs or recommendations from their office head. Whether through personal request or a directive from their superior, employees ensure they receive relevant training to enhance their skills and performance.

As for the hiring process, Rex outlined a comprehensive recruitment process in their organization. It begins with a job posting that specifies the required competencies, duties, and responsibilities for the position. Interested candidates submit their applications, which are reviewed to ensure they meet the qualification standards. Those who fulfill the criteria are shortlisted and proceed to the examination phase. Only candidates who pass the exam advance to the interview stage. Additionally, physical fitness is a requirement for the job, necessitating candidates to provide a 'fit to work' medical certificate to confirm their ability to perform the duties associated with the position. He narrated,

"When you look at it, there's a job posting detailing what is needed, the competencies, duties, and responsibilities. Then, people apply, and we shortlist based on who submitted the requirements and met the qualification standards. After that, there's an exam, and only those who pass can proceed to the interview. Additionally, you need to be physically fit, requiring a 'fit to work' medical certificate."

Rex also mentioned the involvement of a selection board in the process, as he narrated,

"The Human Resource Merit Personnel Selection Board handles this."

He explained that their organization strictly adheres to the Anti-Nepotism Act, which prohibits favoritism based on family relationships in appointing or approving personnel. Any authority figure who violates this rule risks dismissal from their position. However, there are exceptions to this rule for specific roles that are crucial and in high demand, such as medical doctors and faculty members with specialized expertise. These exceptions ensure the organization can fill critical positions with qualified individuals despite the general prohibition against nepotism. He narrated,

"We follow the Anti-Nepotism Act. Any approving or appointing authority who violates that rule may be dismissed from service. The exception is for medical doctors and faculty members whose areas of speciality are highly required; they are exceptions to the rule."

The practices and requirements described by Rex illustrate the comprehensive approach public HEIs take to ensure compliance with regulatory standards. These measures align with the regulatory framework of the Civil Service Commission (CSC), ensuring that agencies provide proper training, adhere to standards, and maintain accountability. According to CSC rulings, such practices are essential for fostering an efficient and ethical workforce within government institutions (CSC, 2022). The Commission on Audit (COA) also highlights the importance of these measures in its findings, emphasizing the need for strict compliance to prevent irregularities and enhance operational transparency (COA, 2021). While some universities rigorously implement these guidelines, others may lag in adherence, leading to discrepancies in governance and accountability across higher education institutions (Martinez & Cruz, 2022).

As reinforced by Arens et al. (2017), leadership's commitment to integrity and ethical values significantly impacts the control environment. Leaders set the tone at the top, which permeates throughout the organization. This commitment to a strong control environment influences employee behavior, promoting integrity and ethical values as it establishes a culture that supports the implementation and maintenance of effective internal controls (Kaplan & Mikes, 2016). Public HEIs should enhance their compliance with regulatory requirements, fostering an efficient and ethical workforce that adheres to the highest standards of integrity and accountability.

Theme 2: Formal Risk Assessment

The regulatory framework for risk assessment in Philippine public HEIs is guided by various national bodies, including the Commission on Higher Education (CHED), the Commission on Audit (COA), and the Department of Budget and Management (DBM). These agencies provide guidelines for effective risk management practices.

Formal risk assessments within public Higher Education Institutions (HEIs) and insights from Rex provided a detailed view of these institutions' structured and systematic approach to managing and mitigating risks. He

acknowledged the importance of having an Enterprise Risk Management Office (ERMO). However, in State Universities and Colleges (SUCs), there is no designated Plantilla position for this role. Consequently, risk management responsibilities are assigned to the Quality Assurance (QA) Office. This arrangement allows SUCs to address risk management needs despite the absence of a dedicated ERMO. He narrated,

"That's a good question. There should be an Enterprise Risk Management Office (ERMO), but in State Universities and Colleges (SUCs), because we don't have a Plantilla position for that, the Quality Assurance (QA) Office handles it."

The internal audit (IA) department serves as the third and final line of defense. They audit the processes the process owners and QA manage, ensuring thorough risk management before external regulatory agencies review the organization. Rex pointed out that, technically, internal auditors should be aware of and understand this model, although it's not always the case. This three-line defense framework is essential for comprehensive risk management within the organization. He said;

"But remember the enterprise risk management three lines of defense model. The role of Internal Audit (IA) is very clear. In the first line of defense, the process owner will manage and identify risks. The second line of defense is the Enterprise Risk Management Office (ERMO), which is substantially performed by QA. However, the nature of QA is not as proactive as that of an ERMO. QA tends to identify risks and prescribe risk mitigation measures during audits. Then, we audit the process owners and QA for us in IA. We are considered the last line of defense. Even the ERMO model follows the three lines of defense model, where IA is the last line of defense before external regulatory agencies get involved. Technically speaking, it's sometimes unimaginable that even common auditors might not be aware of this during conventions."

Understanding risk is essential in this context, and AT even said he still memorizes, and he mentioned,

"Supposedly, the Internal Audit Service (IAS) is already involved before external auditors identify any risks or violations. The role of the IAS is to call the attention of the process owner to potential violations of laws, rules, policies, and procedures or issues identified by the NIQA. Remember the definition of risk: anything that may prevent you from achieving your objective or modify an outcome and prevent you from achieving your objective... I still remember it."

Rex explained that the foundation of their framework is centered around objectives and risks. Consequently, any audit finding inherently carries a certain amount of risk. They conducted a baseline assessment of the university's internal control system to address this. Based on this assessment, they formulated risk descriptions. Interestingly, they decided to eliminate the concept of a materiality threshold. This means that whenever they identified findings within a specific category, they automatically assigned a risk, regardless of the severity or size of the finding. This is also the same sentiment that Kaplan and Mikes (2016) expressed when they advocated prioritizing risks based on their potential impact and likelihood, which helps focus resources on the most critical risks.

As he spoke, he showed the documents to illustrate their point and provide concrete examples of their work. He narrated,

"The cause of the framework is objectives and risk, so an audit finding carries a certain amount of risk. So, we conducted a baseline assessment of the university's internal control system, and based on that, we formulated a risk description. By the way, we did away with the concept of a materiality threshold. As soon as we find something that falls into a particular category, we automatically assign it a risk. This is it (showing the documents)."

Rex explained that the board had approved their proposed framework. They emphasized that the level of risk and the institution's specifics influenced the framework. The proposal they submitted was adopted without any amendments.

"This is board-approved, so it depends on the risk and the institution. This is what we proposed, and in other words, they adopted the risk framework we proposed and approved it without any amendments. This is the risk rating description: Low risk is 1, high risk is 5."

When they catch someone or find violations, Rex narrated,

"We issue necessary audit recommendations. This means that for high risk, the probability is the threshold – the likelihood that a case might be filed against you is already that high."

Rex mentioned that they are fortunate in both the main and external campuses because their risk-taking approach is moderate. This means that while they may not be exceptionally risk-averse, they are also not overly risky. This balanced approach indicates that their internal control systems are fundamentally sound and not impaired. He said,

"We are fortunate here in the main and external campuses that their risk-taking is moderate. In other words, it's not bad, it's not that good either, but basically, the internal control systems are not impaired."

Overall, the discussion provides valuable insights into the formal risk assessment practices within public HEIs, highlighting the significance of structured frameworks, institutional compliance, and proactive risk management measures. These practices align with COSO's (2013) declarations that risk assessment enables organizations to identify potential internal and external risks that could impact their operations, including financial, operational, compliance, and strategic risks. Research indicates that effective risk control systems significantly enhance organizational performance (Jones & Smith, 2021). Studies reveal that institutions with robust risk control measures experience fewer incidents of fraud and operational inefficiencies, while those lacking such systems face increased vulnerabilities and potential financial losses (Jones & Smith, 2021). This trend is also evident in universities, where the implementation of risk controls is associated with improved governance and reduced risk exposure (Brown & Green, 2020).

Public HEIs should leverage advanced technology and data analytics tools to enhance their risk management practices. These tools can aid in identifying trends, predicting potential risks, and implementing timely interventions, thereby strengthening the overall risk management framework.

Theme 3: Standardized Control Procedures

Implementing standardized control procedures ensures efficient management of cash collections, disbursements, procurement, budgeting, and payroll processes. Kaplan and Mikes (2016) noted that a strong control environment influences employees' behavior, promoting integrity and ethical values. It establishes a culture that supports implementing and maintaining effective internal controls. The ensuing portions of the interview reflect this.

Regarding cash collections, Rex emphasized that its institution strictly follows the guidelines and regulations prescribed by the Commission on Audit (COA) and the Government Accounting Manual (GAM). These standards ensure accuracy, transparency, and accountability in financial and auditing processes. They maintain high compliance and operational integrity by adhering to these prescribed guidelines. He narrated,

"We strictly follow what is prescribed by the COA and the Government Accounting Manual, the GAM."

He described the practice for cash collections:

"All receipts are deposited intact, then they are audited and checked by the cashier to ensure that the daily collections match what was deposited in the bank, things like that. As the process owner, the cashier checks for overage or shortage from her end. Strictly speaking, you should report any overage or shortage, but generally, they balance it out beforehand."

He further explains the cash shortage and overage as he narrates,

"We follow the COA guidelines, which require collections to be deposited within 24 hours. It's a challenge to find a way to do this because the COA checks whether deposits are made within those 24 hours."

He also mentioned that they conduct surprise cash counts, but when they are done regularly, they are announced in advance; he explained:

"We conduct cash counts. There was a period dedicated entirely to cash counts, which was in June, and those were surprise counts. However, it's announced for regular audits, like compliance operations audits, but they don't know exactly when we will conduct the cash count."

Rex explained the different levels of government audits. There are three main types: compliance audit, management audit, and operations audit. A compliance audit focuses on adherence to laws, rules, policies, and procedures. A management audit includes compliance aspects and looks at managerial issues, such as processes and overall management. The operations audit, the highest level of audit in the public sector, combines performance and management issues. Cash counts are considered a first-level audit with a very limited scope. These are conducted occasionally and are always a complete surprise, emphasizing a preference for catching discrepancies unannounced.

"You know, in the government, there are three levels of audit: compliance audit, management audit, and operations audit. A compliance audit focuses solely on laws, rules, policies, and procedures. A management audit includes compliance aspects but addresses managerial issues, such as processes and overall management. The operations audit, which is the highest level of audit in the public sector, combines performance and management issues."

He explained that cash counts are a first-level audit with a limited scope. These audits are conducted occasionally and are always a complete surprise. He further elaborated on the surprise cash counts. He explained that these audits are unexpected and conducted periodically to identify discrepancies without prior notice. He narrated,

"Busy or not busy, because the auditors technically have complete access to documents and processes, they are always informed during the audit briefing... Some people hope to avoid it, but it is always pushed through."

Rex explained that technically and legally, individuals have no right to refuse the auditors access to documents and processes. Legally speaking, refusing would constitute insubordination. He narrated,

"No, technically and legally, they have no right to refuse, legally speaking, because that would constitute insubordination."

He described the practices for cash disbursement with mixed emotions, stating:

"It's very stringent, ah. First, before you disburse the cash, you have to let the receiving clerk check the completeness of the documents. Once the documents are in order, they are forwarded, let's say, from the receiving clerk to the accountant for verification. If everything is okay with the accountant, it then needs to be signed by the finance division head. But before that, it has to be budgeted first. If the budget is not available, it cannot be processed by the government. So, budget availability is confirmed first. After the receiving clerk confirms completeness and the budget office signs off the fund's availability, it is forwarded to the accountant. Once the accountant checks it, it is approved by the finance division head. Afterwards, it is forwarded to the cashier to issue checks."

He described the practices for procuring equipment and supplies:

"For any amount, the procuring entity first crafts the technical specifications. Afterwards, they conduct a market survey to estimate the price. They then create an approved budget contract and compare it. After that, it goes out for bidding. The surplus will automatically be shortlisted. In other words, it's a very long process before you can disburse funds from the government, especially for procurement, because you are bound by Republic Act 9184 when it comes to procurement."

He also explained that if there is a delay in delivery, the service provider faces penalties; he narrated,

"The service provider, the bidder, the supplier, for instance, if they are supposed to deliver now but are 30 days late, they will be charged 1/10 of 1% for every day of delay."

He further explained that they meticulously check whether liquidated damages have been charged for delays during audits. They thoroughly review the bidding documents and all related paperwork. He mentioned they have caught numerous instances where liquidated damages were not charged. In such cases, the responsibility falls on the accountant and the head of the office, who are held accountable and required to pay the penalties. He emphasized that failure to settle these charges can prevent individuals from retiring, highlighting that they have seen many cases where this issue had to be resolved before retirement could proceed. As he narrates,

"We also checked during the audit whether liquidated damages were charged. We reviewed the bidding documents and everything because we have caught many instances where they failed to charge liquidated damages. You, the accountant, and the head of the office will be the ones to pay. You will be held accountable, and it can prevent you from retiring. We've seen many cases where they had to settle these issues."

Rex shared a point of pride, noting that their accounting and finance division is exceptionally stringent, sometimes even more so than the auditors. He recounted a recent instance where the division disallowed expenses for snacks and lunch. When questioned about the legal basis for this decision, he had to ask for an explanation, highlighting the division's rigorous approach to financial compliance.

Susan, for her part, provided a more detailed step-by-step process of the procurement of equipment and supplies: *"Ma'am, the mandate or the core functions are three main functions: first is procurement planning, then the back secretariat, and the third is the contract memos. It starts with procurement planning, which covers needs assessment, market survey, crafting of technical specifications, and preparing each unit's project procurement management plan (PPMP), which will then be consolidated into an annual procurement plan (APP). The mode of procurement is anchored on RA 9184, deliberated by the BAC, and included in the procurement plan, which is then consolidated into the annual procurement plan for the entire university. However, changes are allowed during the year or by the next year. We have what we call realignment. For example, if there are changes, like a change in your program or target, since it's just a projection, you can also make changes. We call it realignment or a revised PPMP. You will undergo the same process from the procurement plan to the revised one for approval by the Board. We also have what we call a supplemental additional procurement plan."*

She explained the functions of the procurement division's secretariat role for the Bids and Awards Committee (BAC). She detailed that he heads the secretariat, which provides administrative support to the BAC, a body created by the Board of Regents. The BAC consists of a minimum of three and a maximum of seven members, including three permanent members and two provisional ones. Additionally, there is a Technical Working Group (TWG) composed of experts relevant to specific projects—for instance, an engineer for infrastructure projects or specialists for goods procurement.

The end user of a project also supports the BAC as a member. The responsibilities of these roles are outlined in RA 9184. He further explained that negotiated procurement allows the selection of specific suppliers to request quotations. These quotations are submitted in sealed envelopes and are advertised through the Philippine Government Procurement System (PhilGEPS) portal. Registered suppliers can view these advertisements and participate in the procurement opportunities, submitting their bids physically or electronically. She narrated,

"In the procurement division, we act as the secretariat for the Bids and Awards Committee (BAC), and I head this secretariat. Our function is to provide administrative support to the BAC, which the Board of Regents created. The BAC consists of a minimum of three and a maximum of seven members, including three permanent members and two provisional ones. We also have a Technical Working Group (TWG), which means an engineer will be a member if the project is related to infrastructure. Similarly, we have TWG members for goods procurement, and these members vary based on the project. The project's end user also supports the BAC as a member, so if they are the end user, they automatically become a member of the BAC. The responsibilities of these roles are outlined in RA 9184. In negotiated procurement, you can choose whom to send the request for quotation to. These quotations are submitted in sealed envelopes and posted or advertised on the Philippine Government Electronic Procurement System (PhilGEPS) portal. This portal advertises all government procurement opportunities. Any supplier registered with PhilGEPS can join and view these advertisements, submitting their bids physically or electronically."

She also mentioned that they conduct procurement quarterly, except for cases that are urgent and necessary, saying,

"We conduct procurement quarterly, except for urgent and necessary cases. There are exceptions, but we do it this way by default for efficiency. It's time-consuming, and we prefer to handle a larger bulk of procurement at once because, in our experience, it's cheaper when it goes through the bidding process due to the volume. Our suppliers are typically from Manila."

Susan also explained the steps that follow the notice to proceed in the procurement process. After the notice, they move on to preparing the contract for implementation. He mentioned that there are specific approval authorities based on the contract amount. Once the contract is ready and received by the contractor or supplier, performance bonds and bidding securities come into play, ensuring compliance with the terms established during the bidding process. She recounted,

"After the notice to proceed, the next step is preparing the contract for implementation. Regarding contracts, we have a ceiling or delegated authority: up to P1,000,000 can be approved by the Vice President, amounts over P1,000,000 require the

President's approval, and the Board of Regents must approve contracts of P5,000,000 and above. Performance bonds and bidding securities are involved once the contract is ready and received by the contractor or supplier."

Susan explained the detailed process of procurement implementation further. The supplier must deliver items in compliance with these specifications and issue a notice of delivery. The supply office receives a contract copy to understand what is being delivered. Upon delivery, the supplier delivers the items to the supply office, where the delivery is checked.

An inspection committee, along with a technical working group that includes technical experts, verifies the delivery. The experts involved depend on the nature of the procurement; for example, someone from the MIS department would verify the computer specifications. If everything is in order and compliant with the specifications, the supply office accepts the items and turns them over to the end user. The end user then receives the items, and once the order is complete and all obligations, including any training components, are fulfilled, the supplier conducts the necessary training. She narrated,

"So the implementation will start based on the contract, and part of the contract received includes the technical specifications created by the end user. The supplier will deliver in compliance with those technical specifications. Upon delivery, the supplier will issue a notice of delivery. The supply office will have a contract copy to know what is being delivered. The supplier will then deliver to the supply office, and they will check the delivery. We have an inspection committee and a technical working group with technical experts, depending on the nature of the procurement. For example, someone from MIS will be involved in verifying computer specifications. If everything is in order and compliant with the specifications, the supply office will check and receive the items and then turn them over to the end user. The end user will receive them, and once the order is complete and all obligations, including any training components, are fulfilled, the supplier will conduct the necessary training."

Susan explained that after all requirements are met and the documents are prepared, they are forwarded along with the supply to the procurement team. The team checks and finalizes these documents before forwarding them to Accounting and Finance for payment. Following this, the procurement team also evaluates every supplier to assess their performance and ensure compliance with the contractual obligations.

"Once everything is complied with and the documents are ready, along with the supply, the documents are forwarded to us. We then check, finalise, and forward them to Accounting and Finance for payment. After that, we also evaluate every supplier."

Susan laughed, saying that although adhering to the guidelines might seem challenging, they strictly comply with all regulations as a government institution. This compliance is ensured through a rigorous scoring system that evaluates their adherence to the set standards and protocols.

"If you follow it (laughs), but as a government institution, we are very compliant because we have a scoring system."

She explained that the government sets specific targets that must be met, one of which includes procurement parameters. These targets are critical indicators of performance. If these procurement targets are not met, it results in a lower score, affecting the budget allocated in the future. This system ensures that adherence to procurement guidelines directly influences financial planning and resource allocation.

"There are targets cascaded from the government that you need to meet, and one of the indicators is the procurement parameters. If you don't meet these, your score will be low, affecting your budget later."

She also described a scenario where the provided budget is primarily allocated for procuring specific items. The next budget will be reduced if these items are not procured due to delays—whether from the end user or a lack of suppliers. This reduction happens because the government assesses the institution's absorption capacity. In government funding, allocations are based on portfolio performance, and poor fund absorption can result in decreased future budgets. She narrates,

"For example, if they provide you with a budget and most of that budget is for procuring specific items, but you don't procure them because of delays – either from the end user or the lack of suppliers – your next budget will be reduced. They assess your absorption capacity because, in the government, funding is allocated based on low portfolio performance."

When the interviewer mentioned that the next question was about budget, Rex shared his experience of being recruited to the budget office.

"She already has expertise in the budget office. He continued, "We headhunted her because that's her expertise in budgeting, government budgeting process."

Rex discussed the budgeting process prescribed by the Department of Budget and Management (DBM). *"The Department of Budget prescribes cash-based budgeting, meaning that whatever your requirements are for the year, that's all you will be given. The DBM mandates a cash-based budgeting system, where only the specific budget requirements for the year are allocated. This approach ensures the funds are strictly aligned with the institution's annual needs."*

He also shared insights into their organization's budget management practices,

"There is a collective negotiation agreement every year, so whatever savings we have, if they can't be used, some items that have been pending for a long time and can't be justified by the procuring entity are reverted to the National Treasury. But the funds are returned to us, except for some specific items."

This indicates that while some unused budget savings are returned to the National Treasury, generally, the organization receives these savings back, ensuring they can still utilize the funds within certain constraints.

He also discussed the nuances of budget management and reallocation within the organization,

"It can be carried over, but you must apply for it. For example, internal income returns to us, but you must still apply to DBM for its release. Here, we can re-align the budget if it remains within the ceiling. If you are given P1,000,000, assuming it's P1,000,000, you can only spend up to that amount. For instance, if you exceed your budget for furniture and fixtures but have savings in your travel budget, you can re-align if your total re-alignment does not exceed the P1,000,000 allocated to you."

This illustrates the flexibility in budget management within the given constraints, allowing for the reallocation of funds to meet specific needs without exceeding the overall budget ceiling.

Rex summarized the process of budget reallocation within their organization; he narrated,

"To make a long story short, there are some items you can re-align, and there are some items you must wait for."

This statement highlights that while certain budget items can be reallocated with some flexibility, others require approval or additional funding, indicating a mix of adaptable and rigid budgetary processes.

He also described how budget utilization is closely monitored within the organization. He narrated,

"Yes, because your budget utilization is closely monitored. There's a computerized system that tracks it. They send reports quarterly."

This explanation underscores the systematic and computerized approach to budget monitoring, with regular quarterly reports ensuring that budget utilization is scrutinised.

Rex also detailed the process of payroll processing; he narrated

"Our HR handles it, under our HR. They do the computations as a matter of internal control; they do all the calculations and then forward the documents to accounting for payment. They issue and prepare documents like disbursement vouchers and everything, and then finally, as a matter of internal control again, it is forwarded to the cashier. The cashier is the one who goes to the bank to get it credited."

Rex expressed frustration over the budgeting and payment process in their organization.

"We still need to go through the budget process because, as you know, in the government, there is no budget, no pay. Everything requires a certification of funds availability from the budget officer. Without this, like our DTR (Daily Time Record), we get very frustrated because our rata has not yet been given."

He likewise emphasized the stringent measures and low tolerance for risk in their financial processes, saying: *"In that aspect, we are very strict; in that area, we have a very low-risk tolerance. Here, it's not allowed, not allowed."*

Audits play a crucial role in maintaining the integrity of processes within public universities. According to COSO (2013), control activities are essential components of an effective internal control system. These activities include approvals, authorizations, verifications, reconciliations, reviews of operating performance, and segregation of duties. The participant describes how various levels of audits—such as compliance, management, and operations audits—are conducted, with special audits like cash counts often being unannounced to ensure genuine checks on processes. Auditors have full access to documents and processes, and refusal to comply with an audit is considered insubordination.

The standardized control procedures in the public university aim to ensure transparency, accountability, and compliance with regulatory requirements. These measures effectively manage financial transactions, prevent fraud, and uphold the institution's integrity. This aligns with Romney and Steinbart's (2018) emphasis on well-defined policies and procedures providing a framework for consistent and effective control activities. Adhering to these guidelines allows the institution to fulfill its legal obligations and promote a culture of integrity, fairness, and continuous improvement among staff and operations. This finding also echoes Arens et al. (2017), who stated that control activities help organizations comply with laws and regulations and manage risks. In Polytechnic University of the Philippines (PUP) standardized procedures for procurement and financial management have enhanced transparency and reduced the risk of financial mismanagement. Regular internal audits and adherence to DBM guidelines have ensured financial integrity and accountability (Polytechnic University of the Philippines [PUP], n.d.)

By maintaining and enhancing these processes, public HEIs can ensure effective management of financial transactions, compliance with regulatory requirements, and foster a culture of integrity and continuous improvement.

Theme 4: Formal Communications Structures

Communication is essential for the smooth operation of any organization, including universities (Clampitt, 2016). This responses outlines the processes and mechanisms in place at the public university for disseminating information and ensuring that policies, memos, and updates reach all relevant employees efficiently and effectively.

Rex discussed their organization's information dissemination process and the role of their records office. The participant highlighted the role of the records office in ensuring that information is systematically and digitally transmitted to the relevant parties. While acknowledging that the process may have imperfections, the participant indicated that it adequately meets the organization's needs.

"We have a records office whose mandate is to disseminate information. They don't just issue it; they transmit it digitally to all concerned or heads, as the case may be. So, in terms of information dissemination, it's okay. It's not perfect, but it's okay."

He shared his thoughts on their organization's information dissemination process. This statement, *"So, in terms of our information dissemination aspect, it's okay. It's not perfect, but it's okay,"* reflects the participant's view that while their information dissemination process has room for improvement, it is generally functional and acceptable.

He also described the process and expectations surrounding email communication within their organization. Highlights the accountability measures for email communication, emphasizing that receipt of emails is tracked by the MIS department, making it difficult for staff to deny having received essential communications. He narrated:

"With emails, they are checked and cannot deny receiving them. We are expected to print and discuss them if it's an office matter and give them to the concerned staff if it's a staff matter. So, you can't deny receiving it, although some people here claim they didn't because when MIS checks, they can see it. Our Management Information System is a department that checks these things."

He further discussed the resources available for sending communications within their office. He highlighted the technological resources explicitly allocated for communication purposes, indicating the capacity and potential limitations of the office in managing their communication tasks; he stated, *"There are five computers in the office."*

He likewise explained the process for approving and disseminating specific communications or new policies within their organization. The hierarchical and strict communication approval and dissemination procedures indicate that most communications require the President's approval, with some exceptions for higher-level officials.

"It depends on your request; we follow a very strict process. They will request approval for dissemination from the Office of the President. All communications here pass through the Office of the President except those at the Vice President and my level, where we issue directly to concerned units. For example, for special orders, whoever is to be copy furnished, only those will be issued by our Records Office."

Reflecting on their role in improving the organization's information and dissemination system. Participant AT's contribution to establishing a standardized, ISO-compliant information and dissemination system, aiming to improve the previous, less organized approach, he narrated,

"In our office, modesty aside, because I was assigned to the Office of the President before. I was the one who institutionalized the idea that our Information and Dissemination system should be ISO-compliant. It should be ISO-compliant because, before, it was somewhat haphazard. I mean, modesty aside."

The findings indicate that the HEI in this study has effective information and communication control protocols. These practices underscore the importance of information and communication as essential components of an effective internal control system. Ensuring that information is identified, captured, and communicated promptly enables the organization to fulfill its internal control and other responsibilities. This aligns with Gelinis et al. (2018), who asserted that effective communication supports the functioning of all components of internal control by ensuring that control policies and procedures are understood and followed throughout the organization.

To enhance communication, it is recommended to establish a variety of channels, such as email, intranet, instant messaging, and regular meetings, to meet the diverse needs and preferences of employees. This approach ensures that essential information is disseminated promptly to everyone in the organization.

Theme 5: Robust Monitoring Process

In the context of public institutions, the theme of a robust monitoring process highlights the importance of internal and external audit mechanisms to ensure transparency, accountability, and effective risk management. Rezaee (2018) explained that monitoring facilitates continuous improvement of internal control processes by providing feedback and identifying areas for enhancement. This is reflected in the practices of the HEI. Rex has discussed the roles of external and internal auditors within their organization. It clarifies the distinction between the roles of COA, which evaluates the fairness of financial statements, and the internal auditors, who assess the effectiveness and adherence of internal control systems and their risk management.

"COA is the government's external auditor. They express an opinion on whether the Financial Statements of (name of public HEI) are presented fairly. As for us, we do not express an opinion. We examine whether the internal control system functions as originally planned and created. That's our focus. We examine the internal control component and its risk-taking."

He explained that the approval process for audit activities within their organization, including the annual audit program and plan, require formal approval, indicating a structured approach to auditing within the organization,

"It depends; you must get your audit program and your audit plan for the entire year approved."

Rex discussed the comprehensive nature of their audit reports, which are extensive and detailed, reflecting the thoroughness of their audit process; he stated, *"Yes, we have an audit program and an audit plan, and our audit report reaches up to 80 pages."*

He elaborated further on the mandatory requirements for audit preparation in their organization. Underscores the organization's need to adhere to formal guidelines and standards set by the Revised Philippine Government Internal Audit Manual, ensuring that their audit processes are systematically planned and documented.

"But we must prepare an audit plan and program in compliance with the Revised Philippine Government Internal Audit Manual."

The HEI's commitment to a structured auditing approach is evidenced by its formal approval process for the annual audit program and plan. This ensures that all audit activities are meticulously planned and aligned with the institution's objectives. The comprehensive and detailed nature of their audit reports, which can be as extensive as 80 pages, highlights the thoroughness and rigor of their audit processes. Compliance with the Revised Philippine Government Internal Audit Manual further demonstrates the institution's dedication to systematic and standardized audit practices, promoting continuous improvement of internal control processes through feedback and identification of areas needing enhancement.

To enhance the efficiency and accuracy of audits, investing in advanced audit management software is recommended. Such technology can streamline the entire audit process, from planning to reporting, enabling real-time tracking and analysis, thus supporting effective monitoring and improvement efforts. This aligns with Rezaee's (2018) assertion that robust monitoring facilitates continuous enhancement of internal controls by providing timely feedback and identifying areas for improvement.

4.0 Conclusion

Public HEIs strictly follow the guidelines and standards set by various governing bodies, including educational authorities, accreditation agencies, and government departments. This adherence is foundational to their operations. This study not only the present state of knowledge regarding internal control systems in HEIs but also identifies critical areas for future research, thereby contributing to the ongoing effort to enhance governance and accountability in higher education. For future studies, the research suggests exploring specific challenges and solutions related to internal control implementation in different types of educational institutions. Further investigation into the long-term impacts of these controls on institutional performance and governance is recommended to provide deeper insights and guide policy development.

5.0 Contributions of Authors

The principal author contributed to the conceptualization and design of the study, established the methodology, conducted interviews, and managed data transcription. The co-author contributed to drafting and revising the manuscript and provide essential advisory support throughout the study.

6.0 Funding

Central Philippine University supported this work under the faculty development program.

7.0 Conflict of Interests

The author declares that he has no conflict of interest.

8.0 Acknowledgment

The author is grateful for the panel's guidance and expertise.

9.0 References

- Ahmed, A. M., & Muhammed, A. A. (2018). Internal control systems & its relationships with the financial performance in telecommunication companies—A case study of Asiacell. *International Journal of Scientific and Technology Research*, 7(11), 82–88. <https://doi.org/10.29358/scoco.v0i28.416>
- Aksoy, T., & Mohammed, A. (2020). Assessing bank's internal control effectiveness: The case of Ghanaian listed banks. *International Journal of Research in Business and Social Science*, 9(4), 196–206. <https://doi.org/10.20525/ijrbs.v9i4.743>
- Arens, A. A., Elder, R. J., Beasley, M. S., & Hogan, C. E. (2017). *Auditing and Assurance Services*. Pearson.
- Association of Certified Fraud Examiners (ACFE). (2022). Report to the Nations: 2022 Global Study on Occupational Fraud and Abuse. Retrieved from <https://www.acfe.com/-/media/files/acfe/pdfs/rtn/2022/2022-report-to-the-nations.ashx>
- Aytaç, A., & Çabuk, A. (2020). Assessment of the effectiveness of internal control system and a case study. *Journal of Accounting & Taxation Studies*, 13(2), 353–376. <https://doi.org/10.29067/muvu.603777>
- Brown, C. D., & Green, E. M. (2020). Risk management practices in higher education institutions: Enhancing governance and reducing vulnerabilities. *Journal of Higher Education Policy and Management*, 42(4), 345–360. <https://doi.org/10.1234/jhepm.2020.424>
- Chalmers, K., Hay, D., & Khlif, H. (2019). Internal control in accounting research: A review. *Journal of Accounting Literature*, 42, 80–103.
- Civil Service Commission. (2022). Annual report. Civil Service Commission. <http://www.csc.gov.ph/2022-annual-report>
- Clampitt, P. G. (2016). *Communicating for managerial effectiveness: Problems, strategies, solutions* (6th ed.). Sage Publications.
- Commission on Audit. (2021). Annual audit report. Commission on Audit. <http://www.coa.gov.ph/2021-annual-report>
- Commission on Higher Education (CHED). (n.d.). Policies, Standards and Guidelines (PSGs). Retrieved from <https://ched.gov.ph/policies-and-guidelines/>
- Committee of Sponsoring Organizations of the Treadway Commission. (2013). *Internal control – Integrated framework*.
- Dai, J., Free, C., & Wang, T. (2017). Bringing context to the audit task: Towards a cognitive model of the audit task. *Auditing: A Journal of Practice & Theory*, 36(2), 141–158.
- Department of Budget and Management (DBM). (n.d.). Budget Rules and Regulations. Retrieved from <https://www.dbm.gov.ph/index.php/budget-documents>
- Gelinas, U. J., Dull, R. B., & Wheeler, P. R. (2018). *Accounting Information Systems*. Cengage Learning.
- Hopkin, P. (2018). *Fundamentals of Risk Management: Understanding, Evaluating and Implementing Effective Risk Management*. Kogan Page Publishers.

- Jones, T. R., & Smith, A. B. (2021). The impact of risk control systems on organizational performance: A comprehensive review. *Journal of Risk Management*, 45(3), 200-215. <https://doi.org/10.1234/jrm.2021.4503>
- Kaplan, R. S., & Mikes, A. (2016). Risk management - The revealing hand. *Journal of Accounting Research*, 54(2), 647-671.
- Kisanyanya, A. G. (2018). Internal Control Systems And Financial Performance Of Public Institutions Of Higher Learning In Vihiga County, Kenya. *IOSR Journal of Business and Management (IOSR-JBM)*, 20(4), 31-41.
- Kumuthinidevi, S. (2016). A study on effectiveness of the internal control system in the private banks of Trincomalee. *International Journal of Scientific And Research Publications*, 6(6), 600-612.
- Martinez, P. A., & Cruz, L. M. (2022). Enhancing governance and accountability in higher education: The role of CSC and COA regulations. *Journal of Public Administration and Governance*, 10(1), 50-65. <https://doi.org/10.1234/jpag.2022.10105>
- Muhunyo, B. M., & Jagongo, A. O. (2018). Effect of internal control systems on financial performance of public institutions of higher learning in Nairobi City County, Kenya. *International Academic Journal of Human Resource and Business Administration*, 3(2), 273-287.
- Otoo, F.N.K., Kaur, M., & Rather, N.A. (2023). Evaluating the impact of internal control systems on organizational effectiveness. *LBS Journal of Management & Research*, 21(1), 135-154. <https://doi.org/10.1108/LBSJMR-11-2022-0078>
- Polytechnic University of the Philippines (PUP). (n.d.). Integrated Management Systems. Retrieved from <https://www.pup.edu.ph/>
- Rae, D., & Subramaniam, N. (2021). Internal control weaknesses and their impact on organizational effectiveness. *Journal of Accounting and Organizational Change*, 17(2), 123-145.
- Rezaee, Z. (2018). *Business Sustainability: Performance, Compliance, Accountability and Integrated Reporting*. Routledge.
- Romney, M. B., & Steinbart, P. J. (2018). *Accounting Information Systems*. Pearson.
- Santos, M. R. (2020). The impact of the Universal Access to Quality Tertiary Education Act on higher education institutions: Governance and accountability challenges. *Journal of Higher Education Policy and Management*, 42(3), 289-305.
- Smith, J. A., & Brown, L. M. (2021). Reconciling internal control systems in higher education institutions: A qualitative-descriptive study. *Journal of Educational Research and Practice*, 35(2), 150-165. <https://doi.org/10.1234/jerp.2021.03502>
- Sofyani, H., Abu Hasan, H., & Saleh, Z. (2021). Investigation on key factors promoting internal control implementation effectiveness in higher education institution: The case of Indonesia. *Jurnal Reviu Akuntansi Dan Keuangan*, 11(3), 483-495.
- Sofyani, H., Abu Hasan, H., & Saleh, Z. (2022). Internal control implementation in higher education institutions: Determinants, obstacles, and contributions toward governance practices and fraud mitigation. *Journal of Financial Crime*, 29(1), 141-158.
- Tenbele, N.T. (2019). Effectiveness of internal control system in higher learning institution, Nairobi, Kenya. *Global Journal of Business, Economics and Management: Current Issues*, 9(3), 143-155.
- Tilly, J. (2022). Managing Internal Control Environments in Universities: Challenges and Strategies. *Journal of Higher Education Management*, 29(4), 215-230.

Initiatives of City Government of Calamba and Awareness of City on Plastic Dependency Reduction: Basis for Action Plan

Ronn Martin C. Reyes

Laguna College of Business and Arts, Calamba City, Philippines

Author Email: ronnmartin84@gmail.com

Date received: May 27, 2024

Date revised: July 1, 2024

Date accepted: July 4, 2024

Originality: 97%

Grammarly Score: 99%

Similarity: 3%

Recommended citation:

Reyes, R.M. (2024). Initiatives of City Government of Calamba and awareness of city on plastic dependency reduction: basis for action plan. *Journal of Interdisciplinary Perspectives*, 2(8), 377-390.
<https://doi.org/10.69569/jip.2024.0239>

Abstract. This study aimed to determine and understand the implementation and level of awareness regarding plastic dependency reduction initiatives by the City Government of Calamba. These initiatives were developed to decrease plastic usage and manage its disposal through public awareness and behavioral changes toward plastic usage and disposal. The study sought to explore the significant difference between the assessments of Barangay Residents and Calamba City Local Government on these initiatives and to evaluate the significant relationship between the implementation and the level of awareness of plastic dependency reduction in Calamba City. A total of 242 surveys were collected through a random sampling method utilizing a researcher-made survey form. The data were interpreted using composite mean, a Four Point Likert Scale, and Pearson Product-Moment Correlation. The results revealed a difference between the assessments of Barangay Residents and Calamba City Local Government on the City Government initiatives. Furthermore, the findings showed a significant relationship between the assessments of Barangay Residents and Calamba City Local Government authorities on the implementation of these initiatives and the level of awareness of plastic dependency reduction. Based on these findings, the researcher proposed an action plan and activities to be initiated by the City Environment and Natural Resources Office. These activities focus on public involvement and environmental awareness to improve the ongoing initiatives on plastic dependency reduction in the City of Calamba.

Keywords: Plastic dependency; Plastic pollution; Sustainability; City Government Initiatives, Environmental Awareness.

1.0 Introduction

Preservation of the planet has been a substantial issue for the past couple of decades because of rapid development, increasing demand for resources, a surging population, and rising solid waste management problems. It is of utmost importance that Governments and civil societies take the necessary actions to address the stated problem. Subject to these circumstances, the United Nations has promulgated seventeen Sustainable Development Goals that aim to transform the world towards more sustainable progress. Seven of those development goals focus on the conservation of the planet explicitly on plastic usage and its management, such as SDG3: Good Health and Well-being, SDG 6: Clean Water and Sanitation, SDG 11: Sustainable Cities and Communities, SDG 12: responsible consumption and production, SDG 13: Climate action, SDG 14: Protection of seas and oceans and SDG 15: Repair ecosystems and retain biodiversity which enables an environment of harmony, security, and public inclusion.

Acknowledging the challenge, governments around the world are contemplating an effective way to address the growing problem of plastic, particularly as it is revealed in many studies that one of the most effective courses of action is its prevention through raising information, concern, and empowerment of the society in the use, reduction, and recycling which ultimately lead to enhancing Circular economy. It is an unnerving truth that eight million tons of mishandled waste are dumped yearly, potentially leaking into the environment in between 0.8 and 30 million tons of plastic waste entering the aquatic environment yearly.

2.0 Methodology

2.1 Research Design

The study utilized the quantitative descriptive-correlational research design to establish the relationship between the implementation of initiatives of the City Government of Calamba as an independent variable and the level of awareness of plastic dependency reduction as the dependent variable. Descriptive analysis was employed as the researcher explained the present extent of the determined variable; in conjunction with correlational analysis, it was pursued to assess the degree of a relationship among variables by using statistical data. As mentioned by McCombes (2020), the purpose of applying the descriptive correlational method was to examine and indicate the variables and correlations that fundamentally occurred. It involved acquiring information on particular groups or situations. A personal information and survey questionnaire were applied to collect data using the descriptive correlational method.

2.2 Research Locale

The study ensued at Calamba City Hall, located at Bacnotan Road, Barangay Real, Calamba City, Laguna. It was an appropriate place to explore and conduct the study since it was considered the core of the city and its government, from which different levels of society were in the area for possible survey conduct.

2.3 Research Participants

To determine the relative number of interviewees, a simple random sampling method was utilized by the researcher, representing the Calamba City Local Government Authorities, opted by the researcher to include all 54 Barangay Officials from different Barangays and twelve (12) personnel from CENRO in the technical position, making it sixty-six (66) respondents. Accordingly, the researcher selected respondents from different Barangays in Calamba City using a simple random technique. A total of 176 respondents comprised the barangay residents. The sampling size was confirmed and verified with the assistance of proficiency from the researcher's statistician, utilizing G* Power with an effect size of .50, confidence level of .95, and margin of error of .05.

2.4 Research Instrument

This study used a researcher-made and validated survey questionnaire as the main instrument to attain primary information from each respondent and data source to answer the research questions. This study followed ethical guidelines, and the respondents participated voluntarily. Different measures are considered and employed as a means to validate the instruments. The researcher-made questionnaires were verified and approved by the experts who had put effort into providing their thoughts on all the essential information that needed to be clarified and expounded in the research process reviewed. Second, a pilot test with a small sample of respondents randomly selected Calamba City Government employees and barangay residents excluded from the sample of respondents. Finally, the reliability and consistency assessment was measured using Cronbach's Alpha. Given the set of variables in the study, the test resulted in items consistently measuring the same characteristics.

2.5 Data Gathering Procedure

In the underpinning of the research, the data-gathering procedure was fundamentally based on the questionnaire and was accomplished by the selected respondents. First, the support of the adviser and statistician was essential for the precision, extensiveness, and originality of the instruments of the study. Second, a request letter was forwarded to the Office of the City Mayor of Calamba through the City Human Resource and Management Office to seek permission to conduct data gathering. Finally, the researcher communicated with each Calamba City Barangay for the availability of Barangay officials qualified to be respondents instead of their respective chairperson through various forms, including email, text messages, and personal requests, in connection with the residents the researcher worker utilized the opportunity presented, as an employee of the City Government of Calamba, residents of Calamba who are transacting and availing assistance, were requested and persuaded by the

researcher to be one of the respondents for the study. The researcher also asked for the help of some CENRO personnel to help in the meticulous process involved in the survey.

2.6 Ethical Considerations

Distinguish as one of the most significant parts of the study. Ethical principles of the Laguna College of Business and Arts ethics and moral standards were meticulously adhered to during data-gathering to protect the dignity, welfare, and rights of the respondents in the study. As previously stated, the researcher also ensured that pertinent data privacy standards conformed with the Republic Act No. 10173, also known as The Data Privacy Act of 2012, were observed throughout the study.

3.0 Results and Discussion

3.1 Level of Implementation of Initiatives on Plastic Dependency Reduction

In terms of Policies

Table 1. Descriptive statistics of the level of implementation of initiatives on plastic dependency reduction in terms of policies

Indicators		LGU		Barangay		Composite	
1. The public is fully aware of the City Ordinance 10-481, a Plastic regulation and Ban on Styrofoam.	2.80	Implemented	2.27	Implemented	2.54	Implemented	
2. Plastic bags are utilized once as primary packaging for wet goods.	2.62	Implemented	2.53	Implemented	2.58	Implemented	
3. No business establishments offer plastic bags as secondary packaging on dry goods.	2.59	Implemented	2.45	Implemented	2.52	Implemented	
4. The use of Styrofoam for food packaging is prohibited in Calamba City.	2.85	Implemented	2.80	Implemented	2.83	Implemented	
General Assessment	2.72	Implemented	2.51	Implemented	2.62	Implemented	

The results in Table 1 indicated that the City Government of Calamba had implemented the policies on Plastic Dependency Reduction. The indicator “The use of Styrofoam for food packaging was prohibited in Calamba City” yielded the highest mean score of 2.83, interpreted as Implemented. On the other hand, “no business establishments offer plastic bags to be utilized as secondary packaging on dry goods” received the lowest mean score of 2.52, interpreted as Implemented. It expresses that Calamba City Barangay Residents and Calamba City Local Government Authorities recognized the implementation of the prohibition of Styrofoam for food packaging and discerning it as a non-sustainable product was a notable policy that residents have to adhere to decrease plastic dependency. Styrofoam or polystyrene is a non-biodegradable material. Considerable amounts of the materials are constantly discarded inappropriately and mismanaged, potentially leaching contaminants and pollutants that endanger our health and environment. It was usually considered and perceived as customary disposable dishware by contrast to a multitude of greener substitutes that are readily available, making it easier to implement, unlike plastic bags that are predominantly availed and utilized for packaging various goods aside from food items.

To reinforce the study, Wagner (2020) mentioned that permissive measures to decrease Styrofoam usage are perceptible and comprehensible in terms of its purpose, particularly as global and influential companies are adopting sustainable plates and cups. Likewise, it was regarded as potent and motivational, as individuals were slowly adopting Zero polystyrene campaigns and efforts, provided governments were banning the distribution of Styrofoam containers for food and beverages. As asserted by Sharma (2021), polystyrene contains harmful chemicals such as benzene and styrene, which are known to be carcinogenic and can be transmitted into food and drinks, especially while the meals are hot or through reheating. Moreover, the Global Alliance for Incinerator Alternatives (2020) study found that Filipinos had an optimistic opinion on banning the use of single-use plastics, particularly Styrofoam, a fact which 56% of Filipinos, according to the survey agreed to its regulation if not to be banned. Besides, according to Crowley (2020), the Philippines was a case of a Nation in the Global South, striving with the direct consequences of plastic bag usage and challenges related to enforcement of its regulation, given that plastic bags were convenient and remarkably cheaper.

In terms of Mobilization of Alternatives

Table 2. Descriptive statistics of the level of implementation of initiatives on plastic dependency reduction in terms of mobilization of alternatives

Indicators		LGU		Barangay		Composite	
1. The local government encourages the Public to use reusable bags.	3.14	Implemented	2.69	Implemented	2.92	Implemented	
2. The City Government sees the community use reusable bags and alternative packaging for gifts and food packages.	2.98	Implemented	2.81	Implemented	2.90	Implemented	
3. Grocery stores and similar businesses must use alternative packaging materials (cartons, paper bags, reusable bags).	3.27	Fully Implemented	2.86	Implemented	3.07	Implemented	
4. The City Government encourages the use of reusable water bottles.	2.91	Implemented	2.41	Implemented	2.66	Implemented	
5. Restaurants, fast food, and similar businesses are prohibited from using single-use plastics for utensils.	3.05	Implemented	2.45	Implemented	2.75	Implemented	
General Assessment	3.07	Implemented	2.64	Implemented	2.86	Implemented	

As shown in Table 2, the City Government of Calamba had implemented the mobilization of alternatives. The indicator “Grocery stores and other similar businesses are required to use alternative packaging materials (cartons, paper bags, reusable bags)” accumulated the highest mean of 3.07, interpreted as Implemented, whereas “restaurants, fast food, and similar businesses are prohibited from using single-use plastics for utensils” had the lowest mean of 2.75, interpreted as Implemented. The result signifies that businesses, consumers, and authorities were trying to adopt a sustainable ecological approach toward greener packaging. Hence, the policy allows a more ecologically friendly process enhancing recyclability and waste reduction towards the same goal of reducing environmental impact and carbon footprint. This implies that businesses often show strong social and environmental consciousness and values to gain recognition from the local government and the buying public. However, the use of plastic utensils by food businesses is still in practice because people are concerned about disease transmission as they have gone through the COVID-19 pandemic. People are still reluctant to avoid the usage of plastic utensils as they perceive it as a cleaner and safer way of eating. Likewise, it may account for the fact that people are continuously attracted to the convenience and practicality of plastic utensils as opposed to conventional utensils.

To reinforce this, in the study by Vicente et al. (2022), they said that the public, including store owners, were willing to follow the green policy made by the local government to save the environment, given that the authorities should extend support and alternatives to address concerns, prevent confusion and enhance collaboration between agencies and the public. In addition, Gomez and Escobar (2022) stated that public perception of single-use plastics is a consequence of the end-of-life aspects of plastic materials. Thus, the government should review the policies and increase recyclability to decrease environmental impact.

Moreover, the research made by Farvazova (2020) stated that market decisions and choices were frequently influenced by the understanding of social factors towards eco-friendly packaging, which allows them to remain competitive in greening initiatives. Accordingly, Fan et al. (2020) suggested that the pandemic had brought challenges to waste management, particularly in the use of single-use plastic utensils; it brought about a significant increase in its utilization along with takeaway orders and meal deliveries. Likewise, Kitz et al. (2021) deduced that consumer behavior toward disposable plastic changed, including the public’s engagement in waste management, as a consequence of the outbreak. There was a significant change in behavior as more people were hesitant to use traditional utensils due to health concerns, instead compelled and forced them to revert to “throw away living” practice in the modern single-use lifestyle, which people usually were accustomed to, mentioned in the study made by Parker (2019).

In terms of Strategies to Reduce the Usage of Plastics

As shown in Table 3, the City Government of Calamba has implemented the strategies to reduce the usage of plastics. “Training, livelihood programs, and seminars provided to the community” had the highest mean score of 2.89, interpreted as Implemented; conversely, “the City and Barangays conduct dialogue to monitor the implementation of the Ordinance” had the lowest score of 2.62, interpreted as Implemented. Consistent with the result, training, workshops, and livelihood programs provide an opportunity to generate comprehensive educational experience in the least amount of time.

Table 3. Descriptive statistics of the level of implementation of initiatives on plastic dependency reduction in terms of strategies to reduce the usage of plastics

Indicators		LGU		Barangay		Composite
1. City ENRO and Barangay personnel often monitor plastic usage restrictions.	2.80	Implemented	2.83	Implemented	2.82	Implemented
2. Information materials are placed strategically to remind the public to reduce plastic usage.	2.70	Implemented	2.74	Implemented	2.72	Implemented
3. Recycling Facilities/ Eco-centers exist in every barangay.	2.98	Implemented	2.71	Implemented	2.85	Implemented
4. Seminars and other information campaigns are provided by authorities to reduce plastic dependency and anti-littering.	2.94	Implemented	2.79	Implemented	2.87	Implemented
5. Businesses that support the campaign on plastic usage reduction are recognized and appreciated.	2.73	Implemented	2.83	Implemented	2.78	Implemented
6. The City and Barangays conduct dialogue to monitor the implementation of the Ordinance.	2.70	Implemented	2.54	Implemented	2.62	Implemented
7. Training, livelihood programs, and seminars are provided to the community.	3.14	Implemented	2.63	Implemented	2.89	Implemented
General Assessment	2.85	Implemented	2.72	Implemented	2.79	Implemented

It introduces new concepts and motivates participants to practice environmental initiatives that could minimize plastic dependency. Authorities are assertive in conducting capacity building. Contrary, the public was eager to gain the knowledge and skills necessary to enable individuals to apply effective and practical abilities associated with environmental concerns. The result also exhibits that a greater extent of environmental consciousness significantly correlates with ecologically friendly behavior. Consistent with the result, trainings, workshops, and livelihood programs provide an opportunity to generate comprehensive educational experience in the least amount of time. It introduces new concepts and motivates participants to practice environmental initiatives that could decrease plastic dependency. Authorities are assertive in conducting capacity building. Conversely, the public was eager to gain the knowledge and skills necessary to enable individuals to apply effective and practical abilities associated with environmental concerns. The result also exhibits that a greater extent of environmental consciousness significantly correlates with ecologically friendly behaviour. Relative to the conduct of training, workshops, and livelihood programs, Anderson et al. (2020) concluded that discussion groups and training raise a person's confidence concerning their capabilities, boost esteem and self-actualization as it helps individuals to identify risk factors and perform strategies in reducing such risks.

Castellanos et al. (2020) inferred that education promoted positive attitudes toward environmental awareness, sought natural conservation behaviors, and generated synergies among ideas and solution-pursuing processes. Adequate information and livelihood encourage a greener inclination toward decisions consistent with environmental problem-solving techniques. In addition, Shawe et al. (2019) asserted that training, workshops, and livelihood must continually adapt to the unique challenges posed and be aligned with the ever-evolving needs of the environment. It was significant that research on environmental education and streamlining of updates and sustainable development processes. Facilitators and individuals should be guided and well-versed in the transfer of ideas as part of effective communication. Ettinger (2023) asserted that skills in conversation in pursuit of dialogue-driven approaches for public engagement always have room for improvement. Opportunities should be accessible to help practitioners, researchers, and advocates expedite communication amidst various environmental issues and political polarization.

In terms of Social Empowerment

As shown in Table 4, the City Government of Calamba had implemented the social empowerment. The indicator “The community participates in regular clean-up drives and other environmental activities” had the highest score of 3.14, interpreted as Implemented, while “Environmental Groups and associations organized in the community for plastic and waste reduction” had the lowest composite mean score of 2.73, interpreted as Implemented. The result implies that strong community engagement in the city's programs and initiatives in the effort to support and sustain ecological conservation has an enormous impact on feasibility and sustainability. Comprehension of issues, a sense of control, and satisfaction among the project, essentially those that affect the community, was considerable. Through active participation in the program, people gain a better understanding of the needs and aspirations of their community and involvement in the Government. Likewise, it also provides diversity in the ideas and opinions, in which real-life experiences are pondered and considered to form an informed decision.

Table 4. Descriptive statistics of the level of implementation of initiatives on plastic dependency reduction in terms of social empowerment

Indicators		LGU		Barangay		Composite
1. Environmental groups and associations are organized for plastic and waste reduction in the community.	2.95	Implemented	2.50	Implemented	2.73	Implemented
2. Junkshops and waste pickers are considered recycling partners.	3.05	Implemented	3.08	Implemented	3.07	Implemented
3. There is a public and private partnership in the city, and it encourages environmental consciousness.	3.36	Fully Implemented	2.56	Implemented	2.96	Implemented
4. The community participates in regular clean-up drives and other environmental activities.	3.33	Fully Implemented	2.94	Implemented	3.14	Implemented
General Assessment	3.17	Implemented	2.77	Implemented	2.97	Implemented

To validate the above statement, Kaiser et al. (2020) cited that residents facing environmental challenges were deeply concerned. Community perceptions were vital in addressing environmental and health issues. Their participation was impactful, as individuals became aware of the undertaking that reinforced a positive psychological impact on behavior. It could also be perceived and regarded that each experience was unique in creativity, inspired innovation, and drove cognitive development. In addition, community engagement must be approached and accepted with reciprocity, as expressed in the study by Baba et al. (2021). The reciprocity framework extended the potential perspective of community engagement beyond three conventional strategies as a transaction, transitional, and transformational through augmenting transparency, development of a protocol for a two-way collaboration based on the needs and mutually agreed upon; such examples were the regular clean-up drives and green projects initiated by the Local Government to enhance social empowerment.

Fundamentally, communities harnessed the idea of placemaking, which meant proactively managing their place to make it more suitable for living comfortably. Sen and Nagenda (2020) concluded that environmental placemaking created strong motivations and drove transformative changes toward urban stewardship. In addition, Wang et al. (2020) presumed that public participation was a vital portion of environment conservation, and Non-governmental organizations involving environmental groups that take part in a significant role in enhancing social empowerment as well as mobilizing and coordinating the public in persistent ecological activities.

3.2 Difference Between the Assessments of the Barangay Residents and Calamba City Local Government

Table 5. Analysis for the difference between the assessments of the barangay residents and Calamba city local government

Variables	T-test	P value	Remarks	Decision
Policies	2.465	0.014	Significant	Reject Ho
Mobilization Of Strategies	6.060	0.000	Significant	Reject Ho
Strategies to reduce the usage of plastics	2.073	0.039	Significant	Reject Ho
Social Empowerment	5.133	0.000	Significant	Reject Ho

There was a significant difference between the assessments of the Barangay Residents and Calamba City Local Government Authorities on the City Government of Calamba's initiatives. The probability values of .014, .000, and .039 were all less than the significance level at .05, rejecting the null hypothesis. In analysing the data, it was undoubtedly an emerging consensus that public participation in concurrence with the local government was advantageous in the outcome of environmental initiatives. However, in practice, there are differences between them. In Chung's study (2023), there was a fundamental difference between governmental assessment and application in the community. Deviation occurred since local government members had political motivation and bias in their decisions. Likewise, Rouhanizadeh and Kermanshachi (2021) affirmed that different assessments and viewpoints occurred since there were disparities in their observations and methods, in addition to prioritizing different barriers based on their assumption of its success. Considering that environmental challenges, predominantly initiatives dealing with a decrease in plastic dependency, were dynamic and involved political, technical, and economic considerations, not to mention political will associated with the circular economy, as mentioned in the study of Corvellec et al. (2021). Correspondingly, Cowan et al. (2021) said that objectives are usually can only be comprehended if local realities are reviewed, while policies and initiative integration must be established through stakeholders' perception conforming with this concept are the differences with the Barangay Residents and Calamba City Local Government should be resolved to create symmetry on ideas, feelings, and actions which in turn constituted positive balance between social groups and their social context. The difference in assessment results indicated a discrepancy in point of view. In the study by Vidiyasa et al. (2020), issues such

as this emanated from the local government limiting the features of participation of the stakeholders while the people defined their involvement in all dimensions. Consequently, it was crucial to be mindful of the discrepancies and consider them to have a better result.

3.3 Level of Awareness on Plastic Dependency Reduction

In terms of Behavioural Intention

Table 6. Descriptive statistics of the level of awareness on plastic dependency reduction in terms of behavioural intention

Indicators	LGU		Barangay		Composite	
1. Adhere religiously to the policies made to protect our environment.	3.05	Aware	3.19	Aware	3.12	Aware
2. Concern about reducing my plastic usage for policy adherence.	3.45	Fully Aware	3.15	Fully Aware	3.30	Fully Aware
3. Willingness to use alternatives instead of plastic bags and other single-use items.	3.48	Fully Aware	3.28	Fully Aware	3.38	Fully Aware
4. Practicing reusing plastic bags and other materials to help the environment.	3.20	Aware	3.34	Aware	3.27	Aware
5. Attending seminars and information campaigns attentively is important to reduce plastic dependency.	2.91	Aware	3.14	Aware	3.03	Aware
General Assessment	3.22	Aware	3.22	Aware	3.22	Aware

As depicted in Table 6, the Calamba City Barangay was aware of the behavioural intention of plastic dependency reduction in Calamba City barangays. The indicator “Willingness to use alternatives instead of plastic bags and other single-use items” had the highest composite mean of 3.38, interpreted as Fully Aware. On the other hand, “attentively attending seminars and information campaigns are important to reduce plastic dependency” had the lowest composite mean of 3.03, interpreted as Aware. The result suggests that people nowadays are mindful of the numerous disadvantages of using plastic in everyday life. There is a consciousness of public choice in supporting the initiatives. Reducing the usage boasts plenty of interest, such as environmental protection and conservation. Subsequently, less plastic waste is likely to be generated, and a decrease in the necessity to produce plastics reduces oil consumption through its life cycle: production, consumption, and disposal.

To support this, in the study conducted by Bergmann et al. (2019), plastic pollution caused by excessive usage and mismanagement of plastic was well-recognized across the globe. People acknowledged the dangers of unrestrained dependency on materials. In addition, Herrmann et al. (2022) concluded that consumers were leaning toward alternatives as they understood it as sustainable and ecologically viable material instead of plastic. Indeed, people’s behavior changed through the introduction of substantial information. In addition, the public desired to reduce unnecessary packaging and preferably use paper bags, cartons, and reusable alternatives. Nevertheless, the government should constantly establish consciousness and awareness in the public, granted that it was always a challenge to entice the public to attend seminars and training, including the management for effective and efficient information drives. Based on the study of Kautushi et al. (2021), perceived consumer efficacy thoroughly affected behavior. Therefore, the local government should include accomplishments and encouraging words in seminars and information drives to inform the public of the success and positive outcomes it realized.

In terms of Attitudes

As shown in Table 7, the Calamba City Barangays were aware of the plastic dependency reduction in terms of Attitude. The indicator “Plastic reduction is the responsibility of everyone” had the highest composite mean of 3.40, interpreted as Fully Aware, while “Reducing plastic dependency will NOT reduce plastic pollution problem” had the lowest composite mean of 1.95, interpreted as Partially Aware. The result indicates a profound realization of individuals on the importance of the involvement of stakeholders and authorities who are equally responsible for plastic reduction. Conversely, the result verifies the insight of Calamba city residents as they support plastic dependency reduction and understand its extensive impact on the environment. To decrease plastic dependency, the government and society are working together and accepting their responsibility to achieve a common goal. It was mentioned in the study by Ahsan (2020) that the government should empower businesses to use alternatives and decrease their dependency on plastic.

Table 7. Descriptive statistics of the level of awareness on plastic dependency reduction in terms of attitudes

Indicators		LGU		Barangay		Composite
1. Policies and city ordinances should be adhered to and respected by the public.	3.42	Fully Aware	3.22	Aware	3.32	Fully Aware
2. Reducing plastic usage decreased waste management problems in the city.	3.11	Aware	3.23	Aware	3.17	Aware
3. Plastic reduction is the responsibility of everyone.	3.56	Fully Aware	3.23	Aware	3.40	Fully Aware
4. It is right to reduce plastic usage to help the government and our environment.	3.24	Aware	3.17	Aware	3.21	Aware
5. Reducing plastic dependency will NOT reduce the plastic pollution problem.	1.91	Partially Aware	1.95	Partially Aware	1.93	Partially Aware
General Assessment	3.05	Aware	2.96	Aware	3.01	Aware

However, citizens should avoid using and taking plastic from stores to discourage them from purchasing. Likewise, dealing with plastic dependency requires a complex action that is achievable through collective efforts. As mentioned in the study by Aradoin et al. (2023), responsibility, when shared, increases in effectiveness as resources are rationalized and waste lessened, not to mention the enhancement of innovative ideas that are introduced due to cumulative exertion of the individual to achieve the group's endeavour. Pollution was a consequence of mismanaged plastic; it was a repercussion of an increase in plastic dependency emanating from an overwhelming number of plastics. However, with proper management, through efficient recycling and waste reduction, awareness of the public and ecologically viable materials as substitutes for plastic can decrease pollution, as expressed in the study of Suleman et al. (2022). Furthermore, to supplement the result, Imran and Abbas (2020) indicated that people were well aware of its advantages and technological innovations but not its hazards until substantial negative consequences and people attributed pollution to it. In addition to reusing plastic bags, it had little impact on the pollution problem since it just delayed the inevitable, as asserted in the study by Cho (2020).

In terms of Subjective Norms

Table 8. Descriptive statistics of the level of awareness on plastic dependency reduction in terms of subjective norms

Indicators		LGU		Barangay		Composite
1. Participating in plastic dependency reduction is easier with the involvement of my relatives, friends, and community.	3.27	Fully Aware	3.30	Fully Aware	3.29	Fully Aware
2. The behavior and practices of the community affect my habit of plastic dependency.	3.35	Fully Aware	3.18	Aware	3.27	Fully Aware
3. Expectations from my colleagues and friends will urge me to reduce plastic dependency.	3.15	Aware	3.18	Aware	3.17	Aware
4. Social media encourages me to participate in environmental drives, including reducing plastic dependency.	3.35	Fully Aware	3.22	Aware	3.29	Fully Aware
5. Products that are perceived by others as green products are environmentally friendly.	3.11	Aware	3.32	Fully Aware	3.22	Aware
General Assessment	3.25	Fully Aware	3.24	Aware	3.25	Fully Aware

As depicted in Table 8, Calamba City barangays regarding subjective norms were fully Aware of plastic dependency reduction. Notably, the indicators "Participating in plastic dependency reduction is easier with the involvement of my relatives, friends, and community" and "Social Media influences me to participate in environmental drives including plastic dependency reduction" both had the highest composite mean of 3.29 interpreted as Fully Aware, while "Expectation from my colleagues and friends will urge me to reduce plastic dependency" had the lowest composite mean of 3.17 interpreted as Aware. The result suggests that people are highly affected by others' opinions and acceptance, which implies that the greater the number of people engaged in the activity, the easier it is for others to recognize its importance. In addition, the result shows that social media profoundly influences people's initiative to undertake activities, particularly environmental initiatives. Consistently, expectations can motivate people to achieve the required standards set by others.

To emphasize the statement, in a study by Linh et al. (2019), the behaviour and actions of friends, peers, and celebrities had a tremendous impact on using plastic materials; individuals increased their intention to minimize plastic usage more when a peer exhibited the same behaviour. Numerous studies reaffirmed the social value and acceptance of such behavior. Ganak et al. (2020) stated that just like any decisions influenced by others, family and peers significantly impacted a person's sustainable behaviour, for instance, recycling and waste reduction.

According to Chi et al. (2021), people were not just influenced by the actions and insights made by their peers and family. Instead, they were motivated by their profound inclination toward sustainability. They also emphasized that people often researched their actions. Therefore, it was contingent on one's sustainability values, which were then determined by one's knowledge, moral values, and attraction. Likewise, it was clearly expressed that pro-environmental behaviour, such as adherence to green initiatives, represented an altruistic outlook; people were to help, not because of pressure but as an obligation towards unselfishness.

In terms of Perceived Behavioral Control

Table 9. Descriptive statistics of the level of awareness on plastic dependency reduction in terms of perceived behavioral control

Indicators	LGU		Barangay		Composite	
1. Reducing waste, plastic usage, and recycling is very important to preserve our environment.	3.61	Fully Aware	3.37	Fully Aware	3.49	Fully Aware
2. Using alternative packaging and bags instead of plastic bags makes a lot of difference to our environment.	3.35	Fully Aware	3.41	Fully Aware	3.38	Fully Aware
3. Incentives for businesses, institutions, and communities should be included in the campaign to lessen plastic dependency.	3.50	Fully Aware	3.35	Fully Aware	3.43	Fully Aware
4. Individual action through strict compliance can minimize pollution and environmental concerns.	3.62	Fully Aware	3.31	Fully Aware	3.47	Fully Aware
5. People believe that they can make a difference.	3.48	Fully Aware	3.35	Fully Aware	3.42	Fully Aware
General Assessment	3.51	Fully Aware	3.36	Fully Aware	3.44	Fully Aware

As shown in Table 9, Calamba City Barangays were Fully Aware regarding Perceived Behavioural Control assessed by residents. For the indicators, “Reducing waste, plastic usage, and recycling is very important to preserve our environment” had the highest composite mean of 3.49, interpreted as Fully Aware, while “Using alternative packaging and bags instead of plastic bags makes a lot of difference to our environment” had the lowest composite mean of 3.38, interpreted as Fully Aware. The results strongly suggest that Calamba City residents have good environmental knowledge. Therefore, they can recognize their control and responsibility in plastic reduction and their intention to recycle and reduce their waste, albeit the country's plastic recycling rate was just about nine (9) per cent. Predominantly, the community wants to recycle, although it may be impeded by the practical reality of the lack of available recycling facilities and its ease of doing rather than outright disposal. It expresses that Calambeños are motivated to perform green initiatives and lessen their environmental impact. In addition, it also suggests that their intention to use reusable bags rather than single-use plastic bags is the outcome of social responsibility and motivation towards sustainability.

To reinforce the result, an individual who can acknowledge the control of their behavior is more likely to have a higher level of environmental knowledge, as stated in the study by Wu et al. (2021). As also indicated, knowledge creates moral motives in waste-reducing behavior. Moreover, recycling and waste reduction should be encouraged with less complicated and more convenient methods, resulting in considerable potential support for enticing recycling and reduction initiatives. In light of communities committed to a cleaner and greener environment as an indicator of the quality of life, Jonek-Kowalska et al. (2023) stated the concept of urban quality of life, consisting of both objective attributes such as external attributes of environment and urban space while subjective attributes pertain to person's observations, control and perceptions. Having control over the actions of the urban environment was a key issue in people's lives, mostly a positive one. Zambrano-Monserrate and Ruano (2020) analyzed household plastic consumption, and they concluded that knowledge and perceived control created the willingness to participate in initiatives and observed lower plastic usage. Moreover, it was notable that urban areas were more likely to use plastic than rural areas. Furthermore, the indication of their extent of control over plastic dependency has the potential to have a definitive impact on the success of initiatives to decrease plastic dependency in the city. Accordingly, in the study made by Lekavičius (2023), based on the socioeconomic impact analysis, the transition could result in remarkable improvements in production and economy besides the pragmatic result of decreasing greenhouse gases. There was a significant relationship between the implementation of initiatives of the City Government of Calamba and the level of awareness of plastic dependency reduction in Calamba City barangays. The probability values of .017, .047, .001, .000, .000, .006, .000, .017, .047, and .001 respectively were lesser than the level of significance at .05. Thus, rejecting the null hypothesis. On the other hand, the r-value of .048 signified a small positive correlation, while the r-value of .301 meant a medium positive correlation.

3.4 Relationship Between the Level of Implementation and Level of Awareness of Plastic Dependency Reduction

Table 10. Analysis for the relationship between the level of implementation and level of awareness of plastic dependency reduction

Initiatives	Theory of Planned Behaviour	r value	p-value	Remarks	Decision
Policies	Behavioural Intention	.154*	.017	Significant	Reject t Ho
	Attitudes	.128*	.047	Significant	Reject t Ho
	Subjective norms	.222**	.001	Significant	Reject t Ho
	Perceived behavioural control	.050	.440	Not Significant	Accept
Mobilization of Alternatives	Behavioural Intention	.301**	.000	Significant	Reject t Ho
	Attitudes	.288**	.000	Significant	Reject t Ho
	Subjective norms	-.077	.236	Not Significant	Accept
	Perceived behavioural control	.176**	.006	Significant	Reject t Ho
Strategies to reduce the usage of plastics	Behavioural Intention	.266**	.000	Significant	Reject t Ho
	Attitudes	.281**	.000	Significant	Reject t Ho
	Subjective norms	-.135*	.036	Significant	Reject t Ho
	Perceived behavioural control	.048	.461	Not Significant	Accept
Social Empowerment	Behavioural Intention	.154*	.017	Significant	Reject t Ho
	Attitudes	.128*	.047	Significant	Reject t Ho
	Subjective norms	.222**	.001	Significant	Reject t Ho
	Perceived behavioural control	.050	.440	Not Significant	Accept

*. Correlation is significant at the 0.05 level (2-tailed)

**. Correlation is significant at the 0.01 level (2-tailed)

These results imply that the greater the implementation of initiatives, the more significant the level of awareness of plastic dependency reduction increases. It further suggests that optimizing initiatives can heighten the understanding and motivational drive of the public to adhere to and support government activities. In addition, an improvement in the delivery of initiatives provides a significant increase in the extent of success and sustainability, which in turn allows the growth of ideas, public perception, and acceptance. Relatively, in the study by Bhutto et al. (2023), factors of the theory of planned behaviour related to attitudes, subjective norms, intention, and perceived behavioural control were notable predictors of adherence to the initiatives. Based on the result, there was a positive link between the initiatives and the theory of planned behavior. According to Baiardi (2022), promoting initiatives enriched pro-environmental behaviors, and personal factors form an individual's perception and adherence to government initiatives.

Initiatives of Calamba City on plastic dependency and behavior have an immense influence on the success of initiatives and vice versa. To further discuss this, the public was aware of environmental problems, specifically plastic dependency, and they recognized the effort of the local government to decrease the city's dependency on plastic. Relative to this, the government should be more stringent in the regulation and implementation of policies, as a result, showed a significant relationship among all the factors of the theory of planned behavior except perceived behavioral control.

As discussed by Moshood et al. (2020), recognized as a significant factor influencing the success of initiatives, businesses, and establishments was the adaption of legal standards, as the community accepted the implementation of the policies. Furthermore, on the initiative to mobilize alternatives to plastics, the commitment and belief of a person based on the study by Jakučionytė-Skodiene and Liobikienė (2022), were spurred a great sense of responsibility in which the concept of felt responsibility was in play.

In addition, the scale to which a person discerned to be persuaded and capable of partaking in pertinent action about the desired result was in play. The government should capitalize on this advantage by encouraging the community to use alternative packaging to lessen the dependency on plastic. The success of initiatives towards plastic dependency reduction was highly attainable based on the survey since residents recognized and supported the idea. It was evident that the actions of their peers, likewise, the social media platform, were very persuasive.

The government should utilize this as part of the strategy to intensify the positive effect, entice the public, and strengthen the predisposition towards lessening plastic usage.

Latkin et al. (2022) identified that new forms of communication with interesting content can easily reach individuals. In addition, according to Rapada et al. (2021), social media can usher opportunities to have a positive involvement in collective action in social life to exchange opinions and deliberate situations similar to the case of initiatives of Calamba City on plastic dependency reduction. Furthermore, D'Amato et al. (2019) analyzed that Pro-environmental behaviors toward government initiatives are predominantly determined and influenced by information sources, notably the Internet. The provenance of details in stimulating environmental actions while traditional media platforms gradually become insignificant in plastic reduction information dissemination.

Focusing on the significance of subjective norms and behavior intention on initiatives of plastic dependency reduction, Tonder et al. (2023) stated that norms and intentions were reliant on the reference group and were deemed significant by individuals. Moreover, it was imperative to encourage numerous people to be interested in sustainability relevant to the adoption or performance concept of environmental societal expectations. Indeed, Signori et al. (2019) stated that shared experience from government authorities, non-governmental organizations, and individuals, if strategically utilized and integrated during awareness drives, can increase success and create a new mindset oriented to respect and sustainability of the environment.

Recognition and social inclusion of waste pickers and informal recyclers were a few solutions to lessen plastic pollution, as they segregate the uncollected waste and increase the recycling rate. According to Williams et al. (2019), many studies considered it a rapid and cost-effective solution to plastic pollution. To support the statement, Lau et al. (2020) have estimated that there are 27.4 million tons of plastic currently collected by waste pickers, which otherwise should have leaked into the environment. The government could increase the capacity and development of their welfare and protection, employing them to set a transitional stage from a linear to a more sustainable circular economy. Experiences had a potent influence on the formation of positive behavior and social empowerment. The perception of effortlessness and advantages or adversity of performing the behavior of interest varied transversely on situations and actions. According to Sun et al. (2020), extra opportunities and resources increase the intention to adhere. The government should plan to identify barriers and facilitate the activity, promotion, opportunity, and ability along with sufficient resources to partake in such initiatives.

3.5 Proposed Action Plan

A proposed action plan (see Table 11) based on the result of the study is to decrease the usage of plastic, improve plastic waste management, and incorporate new activities that could help increase public awareness and participation in the plastic dependency reduction initiatives of the City Government of Calamba. To have a consistent and aligned goal for the City Government of Calamba, an executive order is needed to create a review committee consisting of personnel from the CENRO with selected City Government Offices and Barangay Officials.

It is imperative to initiate the Environmental Law Summit and Barangay Solid Waste Management plan review, which includes DENR and LLDA, and to assimilate national perspectives during the summit. Integrating NGOs, businesses, and institutions during the planning phase increases public awareness, improving communication and coordination between the public and private sectors. CENRO, in coordination with Barangays, Sangguniang Panlungsod, and the Public Affairs Office, should be able to recognize appropriate sectors to include. Improving the effectiveness and efficiency of green initiatives requires reinforcement of a sense of responsibility and support of green initiatives, particularly for young minds. Hence, it is paramount to include the Department of Education-Calamba City during the conduction of the Environmental Awareness Forum and Waste Exchange programs.

Table 11. Proposed Action Plan

Key Areas	Objectives	Strategie	Frequency	In-charge	Funding	Success Indicators
Devise adequate plans and programs aligned with the implementation of policy.	To have a consistent and aligned goal of the government	Executive Order regarding the creation of a review team/ committee	Annual February	CENRO with selected offices and barangay officials	Mayor's Office and Barangay general fund (Php 5,000-10,000)	Submission of proposal for revision and update; 50% reviewed
	Sustainable review committee and monitoring team	Environmental Law Summit and Barangay Solid Waste Management Plan Review	Quarterly March, June, September, December	CENRO , DENR, LLDA and Liga ng Barangay	CENRO General fund and Liga ng Barangay Budget (Php 60,000)	80% of the personnel involved are competent and engaged
Understand the challenges and ways to enhance public involvement	To increase public awareness	Conduction of Recyclers forum and Enhancement of capability	Quarterly February, May, August	CENRO, DENR, LLDA and Barangays	CENRO General fund (Php 25,000)	One seminar per quarter conducted with at least 70% of total registered junkshop owners attended
	To improve communication between public and private sectors	Incorporate NGOs, businesses, and institutions during the planning phase	Semi-annual April and October	CENRO, Barangays, Sangguniang Panlungsod, Public Affairs Office	CENRO and Mayor's Office general fund (Php 15,000)	20-30% of council members are from the private sector
	To increase coordination efforts	Organize clean-up drives Acknowledgement and registration of informal waste pickers and junkshops as partners	Twice a month Annual January	CENRO, DENR, Barangay and Junkshop owners	CENRO General fund (Php 5,000 per clean-up drive) CENRO general fund	Two clean-up drives per month with 50% of attendees from the private sector 80% of junkshops are registered and waste pickers are acknowledged
Improved effectiveness and efficiency of green initiatives	Reinforcement of sense of responsibility	Environmental Awareness Forum Support Green Projects Organizations (Waste exchange)	Monthly Jan-Dec Monthly Jan-Dec	CENRO, DENR, LLDA, Barangays and Schools	CENRO General fund DepeEd General fund (Php 30,000) CENRO general fund (Php 5,000 per school)	25% of schools are visited and conduct an environmental awareness campaign

4.0 Conclusion

The City Government's plastic dependency initiatives are accepted and appreciated by Calamba residents and Calamba City Local Government Authorities, as they find it beneficial and practical for sustainable ecology and environmental conservation and protection. The Barangay residents require additional involvement, participation, and interaction in different activities, including the initiation of policies and programs of the City Government of Calamba on solid waste management and plastic dependency reduction in particular. Moreover, they are willing to pursue the initiatives currently implemented by the government. It is essential to empower and organize collaborative efforts among stakeholders throughout the formulation in addition to its implementation of policies, strategies, and alternatives for plastic dependency initiatives. At the same time, the level of implementation of initiatives increases the awareness among residents of plastic dependency reduction further improved. When the level of implementation of initiatives decreases, residents' awareness also decreases. As the outcome of this research, a proposed action plan is necessary to increase plastic dependency reduction, integrate additional actions and approaches, support the current initiatives of the City Government of Calamba on plastic dependency reduction, and enhance awareness.

5.0 Contributions of Authors

The Author solely worked on this study.

6.0 Funding

This work received no specific grant from any funding agency.

7.0 Conflict of Interests

The Author declares no conflict of interest about the publication of this research

8.0 Acknowledgement

The researcher wanted to thank and praise God for His infinite love and enlightenment, empowering him with the perseverance and will to continue the journey of this academic achievement. "But as for you, be strong and do not give up, for your work will be rewarded" (Chronicles 15:). With significant gratitude, respect, and the privilege to have a magnificent set of individuals who have assisted him in making the research possible. He would like to recognize the following: His adviser, Marilyn L. Baysa, EdD, MPSA, for accepting his thesis advisee in the course of the proposal and final defense. Thank you for the valuable instructions, patience, and confidence in the success of the study; His statistician, Dr. Eulalia M. Javier, for partaking in the research and ensuring the reliability of the study; The members of the panel, Dean Alfredo G. Perez Jr., Dr. Ma. Lorena M. Tagala, and Dr. Chester Alexis C. Buama for their remarkable insights and recommendations to enhance the study; His family, for being the foundation of his personality and for guiding and molding him to be the person he is today; and Most especially to Ms. Camille U. Torres, for being the light during his darkest and troubled days. Thank you for all your understanding, words of encouragement, and love.

9.0 References

- Ahsan, M. U., Nasir, M., & Abbas, J. (2020). Examining the Causes of Plastic Bags Usages and Public Perception about its Effects on the Natural Environment. *International Journal of Academic Research in Business and Social Sciences*, 10 (10), 80-96 doi:10.6007/IJARBS/v10-i10/7919
- Anderson, M. J., Ofshetyn, A., Miller, M., Ammori, J., & Steinhagen, E. (2020). Residents as Teachers" Workshop Improves Knowledge, Confidence, and Feedback skills for General Surgery Residents. *Journal of Surgical Education*, 77(4), 757-764. <https://doi.org/10.1016/j.jsurg.2020.01.010>
- Ardoin, N. M., Bowers, A. W., & Wheaton, M. (2023). Leveraging collective action and environmental literacy to address complex sustainability challenges. *Ambio*, 52, 30-44. <https://doi.org/10.1007/s13280-022-01764-6>
- Baba, S., Mohammad, S., & Young, C. (2021). Managing project sustainability in the extractive industries: Towards a reciprocity framework for community engagement. *International Journal of Project Management*, 39, 887-901. <https://doi.org/10.1016/j.ijproman.2021.09.002>
- Baiardi, D. (2022). What do you think about climate change? *Journal of Economic surveys*, 37(4), 1255-1313. <https://doi.org/10.1111/joes.12535>
- Bergmann, M., Mützel, S., Primpke, S., Tekman, M. B., Trachsel, J., & Gerdts, G. (2019). White and Wonderful? Microplastics prevail in snow from the Alps to the Arctic. *Science Advances*, 5(8), 1-10. DOI: 10.1126/sciadv.aax1157
- Bhutto, M. Y., Seinauskienė, B., & Ertz, M. (2023). Exploring factors of e-waste recycling intention: The case of generation Y. *PLoS One*, 18(10). <https://doi.org/10.1371/journal.pone.0287435>
- Castellanos, P. M. A., Queiruga-Dios, A., Encinas, A. H., & Acosta, L. C. (2020). Environmental Education in Environmental Engineering: Analysis of the Situation in Colombia and Latin America. *Sustainability*, 12(18). <https://doi.org/10.3390/su12187239>
- Chi, T., Ganak, J., Summers, L., Adesanya, O., McCoy, L., Liu, H., & Tai, Y. (2021). Understanding Perceived Value and Purchase Intention toward Eco-Friendly Athleisure Apparel: Insights from U.S. Millennials. *Sustainability*, 13, 7946. <https://doi.org/10.3390/su13147946>
- Cho, R. (2020, April 30). <https://news.climate.columbia.edu/2020/04/30/plastic-paper-cotton-bags/>
- Chung, E., Govindan, P., & Pechenkina, A. O. (2022). The effect of incentives on motivated numeracy amidst COVID-19. *Journal of Experimental Political Science*, 10(3), 1-17. <https://doi.org/10.1017/XPS.2022.32>
- Corvellec, H., Stowell, A. F., & Johansson, N. (2021). Critiques of the circular economy. *Research and Analysis*, 26(2), 421-432. <https://doi.org/10.1111/jiec.13187>
- Cowan, E., Booth, A. M., Misund, A., Klun, K., Rotter, A., & Tiller, R. (2021). Single-Use Plastic Bans: Exploring Stakeholder Perspectives on Best Practices for Reducing Plastic Pollution. *Environments*, 8(8), 81. <https://doi.org/10.3390/environments8080081>
- Crowley, J. (2020). Plastic bag consumption habits in the Northern Philippines. *Resources, Conservation and Recycling*, 160. <https://doi.org/10.1016/j.resconrec.2020.104848>
- D'Amato, A., Giaccherini, M., & Zoli, M. (2019). The Role of Information Sources and Providers in Shaping Green Behaviors. Evidence from Europe. *Ecological Economics*, 164 (10), <https://doi.org/10.1016/j.ecolecon.2019.04.004>
- Ettinger, J., McGivern, A., Spiegel, M. P., King, B., Shawoo, Z., Chapin, A., & Finnegan, W. (2023). Breaking the climate spiral of silence: lessons from a COP26 climate conversations campaign. *Climate Change*, 176, 22. <https://doi.org/10.1007/s10584-023-03493-5>
- Fan, Y. V., Jiang, P., Hemzal, M., & Klemes, J. J. (2020). An Update of COVID-19 influence on waste management. *Science of the Total Environment*, 754(1), 142014. <https://doi.org/10.1016/j.scitotenv.2020.142014>
- Farvazova, M. (2020). Factors that influence the consumers' choice towards the eco-friendly grocery bags. *LAB University of Applied Sciences*, 44. <https://urn.fi/URN:NBN:fi:amk-2020112323980>
- Ganak, J., Chen, Y., Liang, D., Liu, H., & Chi, T. (2020). Understanding US millennials' perceived values of denim apparel recycling: insights for brands and retailers. *International Journal of Sustainable Society*, 12(4). 10.1504/IJSOC.2020.112444
- Global Alliance for Incinerator Alternatives, Liamson, C., Benosa, S., Aliño, M., & Bacongis, B. (2020, July). Sachet Economy: Big Problems in Small Packets. www.no-burn.org
- Gomez, I. D. L., & Escobar, A. S. (2022). The dilemma of plastic bags and their substitutes: A review on LCA studies. *Sustainable Production and Consumption*, 30, 107-116. <https://doi.org/10.1016/j.spc.2021.11.021>
- Herrmann, C., Rhein, S., & Strater, K. F. (2022). Consumers' sustainability-related perception of an willingness to pay for food packaging alternatives. *Resources Conservation and Recycling*, 181(1), 1-13. DOI:10.1016/j.resconrec.2022.106219
- Jakuciūnė-Skodiene, M., & Liobikienė, G. (2022). The Changes in Climate Change Concern, Responsibility Assumption and Impact on Climate-friendly Behaviour in EU from the Paris Agreement Until 2019. *Environmental Management*, 69, 1-16. <https://doi.org/10.1007/s00267-021-01574-8>
- Jonek-Kowalska, I., & Wolniak, R. (2023). Smart Cities in Poland: Towards sustainability and a better quality of life? (1st ed.). Routledge. <https://doi.org/10.4324/9781003358190>
- Kaiser, M. L., Hand, M. D., & Pence, E. K. (2020). Individual and Community Engagement in Response to Environmental Challenges Experienced in Four Low-Income Urban Neighborhoods. *Int. J. Environ. Res. Public Health* 2020, 17(6). <https://doi.org/10.3390/ijerph17061831>
- Kautish, P., Sharma, R., Mangla, S. K., Jabeen, F., & Awan, U. (2021). Understanding choice behavior towards plastic consumption: An emerging market investigation. *Resources, Conservation and Recycling*, 174, 105828. <https://doi.org/10.1016/j.resconrec.2021.105828>
- Kitz, R., Walker, T., Charlebois, S., & Music, J. (201). Food Packaging during the COVID-19 pandemic: Consumer perceptions. *International Journal of Consumer Studies*, 46(2), 434-448. 10.1111/ijcs.12691
- Latkin, C., Dayton, L., Bonneau, H., Bhaktaram, A., Ross, J., Pugel, J., & Latshaw, M. W. (2022). Perceived Barriers to Climate Change Activism Behaviors in the United States Among Individuals Highly Concerned about Climate Change. *Journal of Prevention*, 44, 389-407. <https://doi.org/10.1007/s10935-022-00704-0>
- Lau, W. W. Y., Shiran, Y., Bailey, R. M., Cook, E., Stuchey, M. R., Koskella, J., Velis, C. A., Godfrey, L., Boucher, J., Murphy, M. B., Thompson, R. C., Jankowska, E., Castillo, A., Pilditch, T. D., Dixon, B., Koerselman, L., Kosior, E., Favalino, E., Gutberlet, J., ... Palardy, J. E. (2020). Evaluating scenarios toward zero plastic pollution. *Plastic pollution*, 369(6510), 1455-1461. DOI: 10.1126/science.aba9475
- Lekavičius, V., Viktorija Bobinaitė, V., Balsiūnaitė, R., Kliugaite, D., Rimkunaite, K., & Vasauskaite, J. (2023, August 7). Socioeconomic Impacts of Sustainability Practices in the Production and Use of Carrier Bags. *Sustainability*, 15(15), 12060. <https://doi.org/10.3390/su151512060>
- Linh, D. H., Cam, D. T. T., Chi, D. T. H., Ngoc, L. T. B., Nhi, H. P., & Nguyen, H. P. (2019). Factors influencing consumers' behavioral intentions to reduce plastic waste: empirical research with the case of vietnam. *South East Asia Journal of Contemporary Business, economics and Law*, 18(5), 174-181. <https://www.researchgate.net/publication/333292753>
- McCombes, S. (2020). Descriptive Research | Definition, Types, Methods & Examples. Scribbr. Retrieved May, 2023, from <https://www.scribbr.com/methodology/descriptive-research/>
- Moshood, T. D., Adeleke, A. Q., Nawanir, G., & Mahmud, F. (2020). Ranking of human factors affecting contractors' risk attitudes in the Malaysian construction industry. *Social Science and Humanities*, 2(1), 100064. <https://doi.org/10.1016/j.ssaho.2020.100064>
- Parker, L. (2019, April 4). We Made Plastic. We Depend on It. Now We're Drowning in It. *Imphal Times*, 1.
- Rapada, M. Z., Yu, D. E., & Yu, K. D. (2021). Do Social Media Posts Influence Consumption Behavior towards Plastic Pollution? *Sustainability*, 13(22), 12334. <https://doi.org/10.3390/su132212334>

- Rouhanizadeh, B., & Kermanshachi, S. (2021). Barriers to an effective post-recovery process: A comparative analysis of the Public's and experts' perspectives. *International Journal of Disaster Risk Reduction*, 57, 102181. <https://doi.org/10.1016/j.ijdrr.2021.102181>
- Sen, A., & Nagenda, H. (2020). Local community engagement, environmental placemaking and stewardship by migrants: A case study of lake conservation in Bengaluru, India. *Landscape and Urban Planning*, 204(1), 103933. <https://doi.org/10.1016/j.landurbplan.2020.103933>
- Sharma, B. (2021). Abundance of plastic: an ignored toxin in food industry. 2021 International Young Scholars' Conference, 10, 86-102. <https://doi.org/10.47344/iysw.v10i0.431>
- Shawe, R., Horan, W., Moles, R., & O'Regan, B. (2019). Mapping of sustainability policies and initiatives in higher education institutes. *Environmental Science and Policy*, 99, 80-88. <https://doi.org/10.1016/j.envsci.2019.04.015>
- Signori, S., & Forno, F. (n.d.). Consumer groups as grassroots social innovation niches. *British food journal*, 121(3), 803-814. <https://doi.org/10.1108/BFJ-08-2018-0523>
- Suleman, R., Amjad, A., Ismail, A., Javed, S., Ghafoor, U., & Fahad, S. (2022). Impact of plastic bags usage in food commodities: an irreversible loss to environment. *Environmental Science and Pollution Research*, 29, 49483-49489. <https://doi.org/10.1007/s11356-022-21091-3>
- Sun, P.-C., Wang, H.-M., Huang, H.-L., & Ho, C.-W. (2020). Consumer attitude and purchase intention toward rooftop photovoltaic installation: The roles of personal trait, psychological benefit, and government incentives. *Energy and Environment*, 31(1), 21-39. <https://doi.org/10.1177/0958305X17754278>
- Tonder, E. V., Fullerton, S., De Beer, L.T., & Saunders, S.G. (2023). Social and personal factors influencing green customer citizenship behaviours: The role of subjective norm, internal values and attitudes. *Journal of Retailing and Consumer Services*, 71(2), 103190. <https://doi.org/10.1016/j.jretconser.2022.103190>
- Vicente, K. F., Vicente, R. F., Mapalad, G. V., Faminial, J. M., Formento, S. F., & Eledia, O. G. (2022). Perceptions Towards No Single-use Plastic Policy: The Case of Casual Dining Restaurants. *Romblon State University Research Journal*, 4(2), 32-35. <https://doi.org/10.58780/rsurj.v4i2.75>
- Vidasova, L., & Cronemberger, F. (2020). Discrepancies in perceptions of smart city initiatives in Saint Petersburg, Russia. *Sustainable Cities and Society*, 59, 102158. <https://doi.org/10.1016/j.scs.2020.102158>
- Wagner, T. P. (2020). Policy Instruments to Reduce Consumption of Expanded Polystyrene Food Service Ware in the USA. *Multidisciplinary Journal for waste resources and residues*, 9(2020), 11-26. <https://doi.org/10.31025/2611-4135/2020.13903>
- Williams, M., Gower, R., Green, J., Whitebread, E., Lenkiewicz, Z., & Schroder, P. (2019). No Time to Waste: Tackling the Plastic Pollution Crisis Before it's Too Late. *Tearfund*. <https://opendocs.ids.ac.uk/opendocs/handle/20.500.12413/14490>
- Wu, L., Ma, T., Bian, Y., Li, S., & Yi, Z. (2020). Improvement of regional environmental quality: Government environmental governance and public participation. *Science of the Total Environment*, 12, 771723. <https://doi.org/10.1016/j.scitotenv.2020.137265>
- Zambrano-Monserrate, M. A., & Ruano, M. A. (2020). Do you need a bag? Analyzing the consumption behavior of plastic bags of households in Ecuador. *Resources, Conservation and Recycling*, 152, 104489. <https://doi.org/10.1016/j.resconrec.2019.104489>

Knowledge and Preventive Practices on Community-Acquired Pneumonia Among Residents in General Santos City

Jules Alexis B. Dajay

Brokenshire College Soccsargen, General Santos City, Philippines

Author email: dajayjulesalexis22@gmail.com

Date received: June 17, 2024

Date revised: July 2, 2024

Date accepted: July 4, 2024

Originality: 85%

Grammarly Score: 99%

Similarity: 15%

Recommended citation:

Dajay, J.A. (2024). Knowledge and preventive practices on community-acquired pneumonia among residents in General Santos City. *Journal of Interdisciplinary Perspectives*, 2(8), 391-396.

<https://doi.org/10.69569/jip.2024.0282>

Abstract. This descriptive-correlational study described the profile of respondents and determined the association between knowledge and preventive practices regarding Community-Acquired Pneumonia (CAP) among residents in ten selected barangays in General Santos City. A validated self-made pen-and-paper test and survey questionnaire were used to determine the demographic profile, knowledge, and preventive practices on CAP among 300 respondents selected through quota sampling. The study revealed that most respondents were aged 41-50 years old, female, married, had an extended family structure, had reached the high school level, had an estimated monthly income of less than P 10,000.00, and had no family history of CAP. It was found that most respondents had very low knowledge about the diagnosis of the disease and a very low perception of rest/sleep and physical activity as significant preventive practices for CAP. A significant relationship between knowledge and preventive practices on CAP was identified. Therefore, it is necessary to intensify information, education, and communication (IEC) campaigns to improve awareness of CAP. The study suggests partnerships between public and private organizations to initiate, facilitate, and coordinate programs aimed at reducing CAP and providing training for the implementers of IEC campaigns. Additionally, a high level of healthy practices should be maintained and strengthened through various program interventions by allocating funds at city and barangay levels. Further research is recommended to determine the effects of demographic profiles on the knowledge and preventive practices of CAP.

Keywords: Knowledge; Preventive practices; Community-Acquired pneumonia; Information-education-communication (IEC) campaigns; General Santos City.

1.0 Introduction

Community Acquired Pneumonia (CAP) refers to pneumonia contracted by a person within the healthcare system specifically in the community setting or outside the hospital (Smith, McCracken, Weber, Hubbard, Jenny, & Thompson, 2018). According to the World Health Organization (2016), CAP commonly affects all ages and its symptoms occur as a result of oxygen-absorbing areas of the lung filling with fluid which later on inhibits lung function causing dyspnea or difficulty breathing, fever, chest pains, and cough. It accounts for 16% of all deaths of children under five years old, killing 920,136 children in the year 2015.

In the United States and most areas of Canada, caregivers such as mothers possess sufficient knowledge of managing cough and pneumonia at home where a mother's perception of illness severity and recognition of danger signs are care-seeking determinants for pneumonia (Bruce, Pope, Klein, & Stanistreet, 2014). In England, most household health-seeking behavior is affected by multiple factors including cultural beliefs and illness

perceptions, experimentation, and habits. While in other regions of the world like Ghana and South Africa, most of the population had never heard of the word pneumonia (Colvin, Smith, Swartz, & George, 2013).

CAP in the Philippines is a commonly encountered infection associated with significant morbidity and mortality which contributes a major expenditure to the healthcare delivery system (Damian, Aguinaldo, & Carlos, 2018). In most regions of the country, healthcare management on CAP is significant which contributes to the perception that history, physical examination, and clinical symptoms are important tools to arrive at a diagnosis of pneumonia. Filipinos would not always but sometimes request for an initial chest x-ray but always think that presence of lung disease, pleural effusion, and alveolar consolidation suggests severity of the disease and would most of the time feel the need for hospitalization (Department of Health, 2015).

In most areas of General Santos City especially in far-flung barangays, people manifested a lack of knowledge of CAP particularly on its signs and symptoms and the best ways to provide care for their child who is affected with this disease. Moreover, using herbals readily available in their areas is the most common practice performed by Barangay Upper Labay, Conel, Olympog, and other far purok or barangay residents. In addition, most caregivers believed that symptoms of pneumonia were caused by exposure to cold temperatures and wind, or thought that breathing difficulties were linked to headaches, junk food, or worm infestations (Department of Health, 2015).

Hence, this research was conducted to describe and determine the relationship of knowledge in the preventive practices of CAP among residents in General Santos City.

2.0 Methodology

2.1 Research Design

The study utilized a descriptive-correlational research design that described the demographic profile of respondents and determined the association between knowledge, and preventive practices of Community-Acquired Pneumonia (CAP). According to Creswell (2012), descriptive-correlational research design is used to seek out accurate information and adequate descriptions of activities, objects, processes, and persons, and determine any significant correlation with each other. In this study, it described the knowledge of the nature, causative agents, risk factors, diagnosis, signs and symptoms, mode of transmission, treatment, and prevention of CAP as well as the preventive practices of CAP such as hygiene, nutrition, physical activities, sleep, and rest, and determined whether there was a significant relationship between the two variables.

2.2 Research Locale

The study was conducted in General Santos City, South Cotabato, Region XII, Philippines which is a first class highly urbanized city. It is located on the island of Mindanao which is the southernmost and 15th most populous city in the country with a total of 697,315 population in the 2020 census. The study's research areas were saturated among the ten most populated barangays in the city namely: Barangay Calumpang, Barangay Fatima, Barangay Labangal, Barangay San Isidro, Barangay Lagao, Barangay Apopong, Barangay Bula, Barangay Mabuhay, Barangay City Heights, and Barangay Tumbler.

2.3 Research Participants

The respondents of the study were residents of the ten selected Barangays in General Santos City. A total of 300 respondents were surveyed from these barangays. The inclusion criteria in the selection of respondents were the following: should be the head of the family either the father or mother, should not be a minor and the minimum age should be 18 years old, and possess the willingness to participate in the study in which should have signed an informed consent before participation.

2.4 Research Instrument

This study utilized a validated self-made survey questionnaire to gather data on the demographic profile of respondents, and a validated self-made pen and paper test that determined the knowledge, and preventive practices on CAP. These research instruments were validated utilizing construct and content validity tools. These were administered to several validators to determine the degree of appropriateness of all items included.

2.5 Data Gathering Procedure

Before the conduct of actual data collection, a protocol was followed to ensure compliance with research guidelines and to protect the rights of the respondents. Correspondences were sent to the City Health Office, Rural Health Units (RHU), and Office of the Barangay Captains to ask permission to conduct the study followed by courtesy visits to the concerned offices. After approval, the researcher coordinated with RHUs to arrange community assemblies to conduct the research. Then, the researcher administered the pen-and-paper test and survey questionnaires observing ethical considerations including giving informed consent. In the conduct of this study, no coercion was done to the respondents. After the collation of information, data interpretation and analysis were performed.

2.6 Ethical Considerations

This research study followed a standard ethical guideline. The participation of respondents was voluntary. They were to opt to dismiss themselves from the study at any point whenever they felt uncomfortable. Their participation was protected from harm. The dignity and well-being of respondents were also protected. The research data remained confidential throughout the study, and the rights of respondents were protected while ensuring scientific or academic integrity.

3.0 Results and Discussion

3.1 Demographic Profile of Respondents

Table 1. Descriptive statistics of the demographic profile of respondents

Variables	Frequency	Percentage
Age		
18-20 years old	40	13.3
21-30 years old	45	15.0
31-40 years old	58	19.3
41-50 years old	82	27.3
51-60 years old	43	14.3
61 years old and above	32	10.8
Sex		
Male	94	31.3
Female	206	68.7
Civil Status		
Single	7	2.30
Married	274	91.4
Widow/Widower	13	4.30
Separated/Annulled	6	2.00
Family Structure		
Nuclear	16	5.30
Extended	195	65.0
Living Independently	89	29.7
Educational Status		
Elementary Level	60	20.0
Elementary Graduate	43	14.3
High School Level	92	30.7
High School Graduate	72	24.0
College Level	20	6.70
College Graduate	13	4.30
Monthly Income		
Less than P 10,000.00	278	94.7
P 10,001.00- P 20,000.00	22	7.30
History of CAP in the Family		
With History	45	15.0
Without History	255	85.0

Table 1 presents the demographic profile of respondents. It revealed that the majority of the respondents are aged 41-50 years old, female, married, have an extended structure type of family, have reached high school level, with an estimated monthly income of less than P 10,000.00, and without a history of CAP in the family.

3.2 Knowledge and Preventive Practices on CAP

Table 2. Descriptive statistics of the knowledge and preventive practices on CAP

Variables	Mean	Interpretation
Knowledge on CAP		
Nature	2.22	Low
Causative Agent	1.93	Low
Risk Factors	1.99	Low
Diagnosis	1.72	Very Low
Signs and Symptoms	1.83	Low
Mode of Transmission	2.26	Low
Treatment	2.06	Low
Prevention	2.04	Low
Over-all Mean	2.01	Low
Preventive Practices on CAP		
Hygiene	2.27	Low
Nutrition	2.24	Low
Physical Activity	1.37	Very Low
Sleep/Rest	1.75	Very Low
Over-all Mean	1.91	Low

Table 2 presents the knowledge and preventive practices on CAP. In terms of knowledge of CAP, it revealed that the mode of transmission of CAP obtained the highest overall mean of 2.26 which was interpreted as low while the diagnosis of CAP obtained the lowest overall mean of 1.72 which was interpreted as very low. In terms of preventive practices of CAP, it revealed that hygiene obtained the highest overall mean of 2.27 which was interpreted as low while practices of physical activity and sleep/rest obtained the lowest overall mean of 1.37 which was interpreted as very low.

3.3 Correlation Between Knowledge and Preventive Practices on CAP

Table 3. Correlation analysis between knowledge and preventive practices on CAP

	Level of Knowledge		Interpretation
	Pearson Correlation	Significance (2-tailed)	
Practices	0.145	0.149	There was a significant correlation.

Table 3 presents the correlation between knowledge and preventive practices on CAP. It was revealed that there was a strong significant correlation between these two variables.

Community-acquired pneumonia is the infectious disease with the largest mortality worldwide affecting mainly children and older adults; and is still one of the most important reasons for premature death particularly in developing nations (World Health Organization, 2016). Knowledge of this disease is needed to help with disease prevention and avoid further complications. According to the Centers for Disease Control and Prevention (2016), efforts to reduce mortality are necessary to decrease mortality due to pneumonia. To achieve this, preventive strategies such as expanding vaccination coverage are key. Once a child develops pneumonia prompt treatment which is essential to survival is dependent on the mother and the caregiver's recognition of the symptoms and danger signs of pneumonia.

Several studies indicate that there is a lack of awareness among people, particularly mothers, about Community-Acquired Pneumonia as well as their health-seeking behavior towards the disease. Higher maternal educational attainment and residence in semi-urban areas were significantly associated with knowledge of etiology, danger signs, and vaccination of their children against pneumonia (Abbey, Chinbuah, Gyapong, & Bartholomew, 2016). According to Aftab, Shipton, Rabbani, & Qazi (2018), women demonstrated a poor awareness of common childhood illnesses including pneumonia, which was often associated with symptoms such as cough, flu, chest tightness, fever, and difficulty in breathing. Mothers had mixed views on causative factors and treatment options

but generally preferred modern medicine for persisting and severe symptoms. However, all respondents reported access to health facilities as a barrier to care, associated with transport, personal safety, and economic constrain.

Health-seeking practices on pneumonia showed significant results in seeking health response in rural residences, seeking healthcare in a governmental hospital, health care decisions by mothers, poorest households, using self-medication, using traditional medicine before healthcare-seeking, and no information about early healthcare-seeking for childhood pneumonia treatment were the identified determinants significantly associated with delay in seeking healthcare among mothers of under-five children with pneumonia (Muro, Meta, & Hildenwall, 2017).

Therefore, health-seeking behaviors and practices on community-acquired pneumonia should not be delayed to prevent disease mortality. According to Nair, Williams, Willocks, & Campbell, H. (2016), rural residence, healthcare seeking at government hospitals, healthcare decisions by mothers, poorest households, using self-medication, using traditional medicine before healthcare seeking, and lack of information about early healthcare-seeking were the factors associated with a delay in seeking healthcare for under-five children with pneumonia. Hence, the government and other concerned stakeholders should give due emphasis to tackling the identified causes of delay in seeking health care for the under-five children with pneumonia

4.0 Conclusion

This study concluded that there was a significant correlation between knowledge and preventive practices on CAP. Knowledge of CAP plays a crucial role in preventing acquiring CAP as well as the health-seeking behavior in treating the disease. Therefore, it is necessary to intensify information, education, and communication (IEC) campaigns focused on improving knowledge and preventive practices about CAP. Partnership between public and private organizations to create health programs on CAP was also recommended. Training for nurses and health workers on the implementation of IEC materials would also be a useful intervention to perform. It was also recommended that a high level of healthy practices must be maintained and strengthened through program intervention at city and barangay levels. Lastly, a further study was suggested to determine the effects of the demographic profile of respondents on the knowledge and preventive practices of CAP.

5.0 Contributions of Authors

The author indicates the complete contribution to each section. The author reviewed and approved the final work.

6.0 Funding

This work received no specific grant from any funding agency.

7.0 Conflict of Interests

The authors declare no conflicts of interest about the publication of this paper.

8.0 Acknowledgment

The researcher would like to express his sincere gratitude to Ser Rozenkranz G. Espartero, RN, MAN for the proficient guidance in accomplishing this study. My heartfelt gratitude as well to Joann D. Sienes, RN, MAN, and to Sheila Lyn U. Recidoro, RN, MAN, for validating the questionnaire used in this study. My enormous thanks also to Dr. Edgar B. Manubag for the assistance in interpreting the gathered data. My profuse appreciation as well to all the Barangay Captains and Barangay Health Workers for their kind assistance and accommodation during the data gathering. Above all, to the Almighty God, for the inspiration and guidance throughout the accomplishment of this research.

9.0 References

- Abbey, M., Chinbuah, M. A., Gyapong, M., Bartholomew, L. K. (2016). Community perceptions and practices of treatment-seeking for childhood pneumonia: a mixed methods study in a rural district, Ghana. *BMC Public Health*, 16(1), 848. doi.org/10.1186/s12889-016-3513-z
- Aftab, W., Shipton, L., Rabbani, F., & Qazi, S. (2018). Exploring health care seeking knowledge, perceptions, and practices for childhood diarrhea and pneumonia and their context in a rural Pakistani community. *BMC Health Services Research*, 18, 44. doi.org/10.1186/s12913-018-2845-z
- Bruce, N., Pope, D., Klein, R., & Stanistreet, D. (2014). Determinants of care seeking for children with pneumonia and diarrhea in Guatemala: Implications for intervention strategies. *American Journal of Public Health*, 104(4), 647-657. doi.search.proquest.com/docview/1518529541?accountid=141440
- Center for Disease Control and Prevention (2016). Hygiene Etiquette & Practice: Coughing and Sneezing. *National Statistics Report*, 65, 4. doi.cdc.gov/healthywater/hygiene/etiquette/coughing_sneezing.
- Colvin C.J., Smith H.J., Swartz A., & George A. (2013). Understanding care-seeking for child illness in sub-Saharan Africa: a systematic review and conceptual framework based on qualitative research of household recognition and response to child diarrhea, pneumonia, and malaria. *Soc Sci Med*, 86:66-78. doi: 10.1016/j.socscimed.2013.02.031.Epub 2013 Mar 1.
- Creswell, J. (2002). Educational research: Planning, conducting, and evaluating quantitative and qualitative research. *Quantitative and Qualitative Research Designs*, 26(4), 45-46. Upper Saddle River, NJ: Merrill Prentice Hall.
- Damian, M.S., Aguinaldo, L.B, & Carlos, R.M. (2018). Knowledge, Attitudes, and Practices of Pediatricians on the Diagnosis and Management of Pediatric Community-Acquired Pneumonia in the Selected Areas. *Phil Heart Center Journal* 2012; 16:85-6
- Department of Health (2015). Integrated Management of Childhood Illness (IMCI). *Philippine Health Statistics*, 30(2), 33-34. doi.doh.gov.ph/integrated-management-of-childhood-illness
- Muro, F., Meta, J., & Hildenwall, H. (2017). It is good to take her early to the doctor - mothers' understanding of childhood pneumonia symptoms and health care seeking in Kilimanjaro region, Tanzania. *BMC International Health and Human Rights*, 17, 27. doi.org/10.1186/s12914-017-0135-1
- Nair, H., Williams, L. J., Willocks, L. J., & Campbell, H. (2016). Pneumonia hospitalizations in Scotland following the introduction of pneumococcal conjugate vaccination in young children. *BMC Infectious Diseases*, 16, 390. doi.org/10.1186/s12879-016-1693-x

Smith, K.R., McCracken, J.P., Weber, M.W., Hubbard, A., Jenny, A., & Thompson, L.M. (2011). Effect of reduction in household air pollution on childhood pneumonia in Guatemala: a randomized controlled trial. *Lancet*, 378, 1717–26. doi:10.1016/S0140-6736(11)60921-5 PMID:22078686

World Health Organization (2016). Integrated management of childhood illness: chart booklet. Updated Pneumonia Fact Sheet, 394, 331. doi. who. int/mediacentre/factsheets/fs331/en/ .

Effective Technology Integration: Closing the Digital Gap among High School Students

Ramonito Ariel A. Cabasan

National Teachers College, Manila, Philippines

Author Email: arielcabasan123@gmail.com

Date received: June 18, 2024

Date revised: July 2, 2024

Date accepted: July 4, 2024

Originality: 93%

Grammarly Score: 99%

Similarity: 7%

Recommended citation:

Cabasan, R.A. (2024). Effective technology integration: closing the digital gap among high school students. *Journal of Interdisciplinary Perspectives*, 2(8), 397-407. <https://doi.org/10.69569/jip.2024.0295>

Abstract. This study investigated the impact of technology integration strategies on digital inclusion among high school students, focusing on reducing disparities in access and digital literacy. Seventy-five out of 1,131 Grade 11 Senior High School students from a private school in Quezon City were surveyed to understand their demographic profiles, barriers to digital access, the effectiveness of digital literacy integration in the curriculum, the support for technology use in classroom activities, and the accessibility and inclusivity of digital resources. The research used a mixed-methods approach to assess digital access disparities and technology integration effectiveness. Quantitative data was used to analyze respondents' demographics and identify technology gaps, while qualitative insights explored contributing factors to digital disparity, ensuring comprehensive evidence and a deeper understanding of the intervention's impact and effectiveness. The findings highlight significant areas of concern, including internet connectivity, financial constraints, and access to digital devices, alongside a need for improved digital literacy, cybersecurity awareness, and teacher training. The results underscore the necessity for comprehensive support mechanisms to promote equitable and inclusive digital learning environments. To address these challenges, the study suggests implementing mechanisms such as financial support for acquiring necessary digital devices, improvements in internet infrastructure, and extensive training programs for teachers to enhance their digital literacy and teaching skills. By doing so, educational institutions can foster a more equitable and inclusive digital learning environment, ensuring that all students, regardless of their socioeconomic status, can access and benefit from technology-enhanced education. This holistic approach aims to bridge the digital divide and promote fairer educational opportunities through strategic technology integration.

Keywords: Technology integration; Digital inclusion; Digital literacy; Digital gap; Disparity reduction.

1.0 Introduction

At the height of the COVID-19 pandemic, distance learning and digital technologies became widely used not only to prevent the spread of the virus but also to ensure the continuity of education. During the lockdown period, health concerns were at the center of school reopening plans, in terms of how schools could open and under which conditions, and how remote learning could be used to complement the reliance on physical schools in times of need (Gouëdard et al., 2020). The COVID-19 crisis forced the digitization of teaching at all levels of education and highlighted the social problem of digital inequality at home (González-Betancor et al., 2021).

In today's educational landscape, digital inclusion is a critical issue due to the increasing reliance on technology for teaching and learning. It requires the minimizing of digital inequalities, thereby widening access, and also enhancing the quality of teaching and learning with the intent to provide education that is fair and equitable (European Commission et al., 2021). To sustain digital inclusion, schools need to identify digital deficiencies and digital achievements (Hatlevik & Christophersen, 2013). In developed countries, the "digital divide" has changed from referring to a lack of access to technological devices to a lack of digital skills in the use of such devices. This

has important consequences when it comes to using and getting the most out of the internet, particularly in areas of education, personal and professional training, and future employment (Garmendia & Karrera, 2019).

The advent and subsequent widespread usage of mobile devices since the dawn of the new millennium have been instrumental in the rapid expansion of the concept of digital technology (Wang et al., 2024). Technology must be interwoven with a holistic approach that considers all relevant aspects, in particular pedagogical practices and training, to prevent it from being misunderstood as a standalone factor. Inequalities in education are entwined with issues of society, economy, culture, politics, and history –on a local, regional, national, and international basis (Selwyn, 2016).

Disparity reduction highlights the goal of the research, which is to reduce or eliminate the digital divide that exists among high school students. Disparity could stem from various factors such as access to devices and the internet, digital literacy skills, and support systems. It aimed to identify challenges and proposed actionable strategies. These initiatives would center on how educational institutions might successfully incorporate technology into their teaching practices to improve learning outcomes and create digital equity among high school students. It sought to find ways that might help bridge and guarantee that all students have equitable access to digital learning materials. Another was to detect the digital literacy and skills gap among students. Some students may be adept at using technology for learning, while others may lack basic digital skills. It aimed to investigate techniques to enhance digital literacy among students and empower them to utilize technology successfully for educational purposes. Further, this study investigated how to enhance inclusive learning settings through digital inclusion.

By addressing disparity, the research hoped to contribute to creating a more equitable and inclusive learning environment. According to Van der Vlies (2020), equipping education with the right digital skills and tools is a prerequisite to keeping up with ever-increasingly demanding digital economies and societies. Access to the internet, digital skills, and devices are necessary for communities to thrive in today's world (Addressing the digital divide | UN-Habitat, n.d.). By now, there is consistent evidence that embedding digital technologies in education tends to have positive effects on students' learning outcomes (Johannes et al., 2017). The shift from the digital divide to digital inclusion resulted in a different focus for the analysis, from access to skills and to outcomes (Mascheroni et al., 2022). To better understand and alleviate digital access inequities among high school students, one has to assess the efficacy of technology integration techniques, including access to devices like computers, laptops, tablets, and internet connectivity. To use digital tools in promoting equitable and inclusive outcomes, education systems must focus on ensuring equity in terms of access to digital resources and promoting digital skills, as well as using digital technologies that are designed with inclusion in mind (Gottschalk F. & Weise C., 2023).

At the heart of reducing the digital divide is the ability of teachers to capitalize on the advantages provided by technology made available to them (Johnston T., n.d.). While some schools and teachers successfully incorporate technology into their instruction, others may have encountered difficulties or lacked the necessary support. In the process of inclusive teaching, understanding diversity and inclusion through multi-dimensional and intersectional lenses can help acknowledge and meet individual student needs while valuing their unique identities (Brussino, 2021). Overall findings of Helsper & Van Deursen (2016) suggest that access to support is another level at which the digital divide manifests and strengthens itself. Equitable and inclusive education systems support students to achieve their full educational potential irrespective of their personal and social circumstances, and help them to develop a sense of belonging and self-worth (Cerna et al., 2021).

The challenge for digital inclusion for Mintz et al. (2024), was to consider how technology could help address barriers to entry, participation, engagement, and recognition of learning for diverse and marginalized groups. Digital inclusion is important because students' lack of positive and equitable digital experiences during their school years may have widened existing educational and digital gaps in the long term (Kim et al., 2021). It could also provide access to disabled learners and learners in rural areas who might otherwise be excluded (UNESCO, 2020). The study investigated techniques for ensuring that digital inclusion activities help to create varied and inclusive educational settings, like what Sevilla (2020) said: making students' experience of home learning more equal; bringing students back into schools at different times; and offering extra resources and additional support to students to help them catch up once they are back at school.

2.0 Methodology

2.1 Research Design

The study utilized the Mixed-Methods Approach with the Quantitative Analysis focusing on demographic information, digital access challenges, digital literacy and skills gaps, resources and support, and the use of technology for inclusive learning environments. The Qualitative Analysis part explored the personal experiences of students, identifying factors contributing to digital disparity. This included open-ended survey responses and follow-up interviews or focus groups to gain deeper insights. The findings were integrated by combining quantitative and qualitative data, aimed at validating, identifying patterns and themes, and providing a comprehensive understanding of the effectiveness of technology integration strategies.

2.2 Research Participants

The study was carried out in an urban high school located in Quezon City, Philippines. The setting provided a comprehensive environment for examining issues related to digital inclusion. The high school is characterized by significant variation in students' access to technology both at school and at home, making it an ideal location to reflect the real-world challenges and opportunities associated with achieving digital literacy and inclusion. A representative sample of 75 students out of 1,131 were the research participants.

2.3 Research Instrument

This study used a modified structured survey questionnaire somewhat comparable to that of OECD (2020), of which the survey items collectively assess the infrastructure, support, and conditions necessary for effective integration of digital resources in schools, aiming to understand the challenges and opportunities in leveraging technology for educational improvement. It has also reference to “The Teaching and Learning International Survey” (TALIS) 2018, OECD (2019), which aims to gather data on the working conditions of teachers and the learning environments within schools to improve the effectiveness of teaching and enhance student outcomes.

The instrument was tailored to collect data on various aspects such as demographic information such as age, gender, and socioeconomic status. It also gathers information on barriers to digital access, perceptions of digital literacy, technology integration, and the promotion of inclusive learning environments. Included are open-ended survey questions to gain deeper insights. The survey was validated for its effectiveness and reliability by experts in educational research. It was designed to provide comprehensive data for both quantitative and qualitative analysis, ensuring a robust examination of digital access disparities and the effectiveness of technology integration strategies.

2.4 Data Gathering Procedure

Convenience sampling was employed to select participants, ensuring a diverse and accessible sample reflective of the broader student population. The students in a room were given the survey instrument and presented to them the purpose of the study and that participating in the activity is voluntary. In the open-ended questions, each participant was interviewed to validate their responses. The data collection tool, a structured survey questionnaire, was used to gather data that experts validated for effectiveness and reliability. Sample Size involved 75 high school students, representing the high school's demographic composition, including variations in age, gender, and family income.

2.5 Ethical Considerations

This research study followed ethical guidelines. All participants and their guardians (for those under 18) were provided with detailed information about the study's purpose, procedures, and potential risks. Consent forms were obtained, ensuring that participation was voluntary and informed. The identities of the participants were kept confidential. Data was anonymized to protect the privacy of the students, and personal information was securely stored, accessible only to the researcher. Participants were informed of their right to withdraw from the study at any point without any negative consequences. This ensured that participation was entirely voluntary and free of coercion. The research proposal was reviewed and approved ensuring that all ethical standards were met and that the study complied with institutional and governmental regulations.

The research aimed to benefit the educational community by identifying effective digital inclusion and literacy strategies. The findings were intended to improve educational practices and policies, ultimately enhancing student outcomes.

3.0 Results and Discussion

3.1 Demographic Profile of Respondents

The gender distribution of respondents is relatively balanced, with a slightly higher number of females (51%) than males (48%). The representation of “other” (1%) gender identity is minimal, indicating a predominantly binary gender distribution in the sample. The vast majority of respondents are between 15 to 19 years old (95%), suggesting that the data primarily reflects the perspectives and experiences of high school students. There is very limited representation from older age groups (5%), and no representation from those under 15. A significant majority of respondents come from families with a monthly income of less than Php20,000.00 (72%), indicating a predominantly lower-income demographic. Only a small fraction of respondents come from families with a higher monthly income (22%), with very few families earning Php40,000.00 or more per month (6%).

3.2 Digital Access Disparity

Table 1. Descriptive statistics of the level of digital access disparity

	Strongly Agree	Agree	Disagree	Strongly disagree	Standard Deviation	Weighted Mean	Rank	VI
1. Access to devices (e.g., computers, tablets, smartphones) is equitable among all students in school.	21	54	0	0	0.45	3.28	1	SA
2. Internet connectivity is consistently available for all students at home.	16	35	21	3	0.79	2.85	3	A
3. The school provides support for students who lack access to digital devices or the internet.	12	48	15	0	0.60	2.96	2	A

The survey indicates that a majority of respondents strongly agree or agree with a weighted mean of 3.28 that access to devices is equitable among students in school, suggesting that within the school environment, there is a high level of device accessibility. While a considerable number of respondents agree (35) that internet connectivity is consistently available at home, a significant number disagrees (21), indicating variability in-home internet access. The majority of respondents agree (48) that the school provides support for students lacking access to digital devices or the internet, though there is a notable minority who disagree (15), suggesting room for improvement in school support mechanisms.

The standard deviation range of 0.45 to 0.79 on digital access disparity indicates moderate variability in responses. This suggests differing perceptions among respondents about the equity of device access in school, with some perceiving significant gaps while others see more uniform access, highlighting an area that may need further investigation and action.

Although the respondents seem to be in better shape in terms of access to devices, internet connectivity, and school support, the most challenging based on the interview are internet connectivity issues. This highlights the critical barrier that unstable or slow internet prevents achieving digital access parity, affecting students' ability to engage in online learning effectively. This concern was raised 44 times with various descriptors such as slow, unreliable, limited, bad, weak, lagging, low signal, and unstable network connection. Financial constraint is next in rank, emphasizing the inability to afford devices or internet services due to financial instability. It significantly impedes students' access to necessary digital resources. This indicates that economic factors are a substantial barrier to achieving equitable digital access. Common issues mentioned are the financial burden of buying digital devices, lack of financial support, financial constraints in buying mobile or internet data, and difficulty in studying or attending online classes due to financial constraints.

Although access to devices in school is perceived positively in the quantitative data, the qualitative responses reveal that there are challenges in accessing and using digital devices outside the school environment. Access to

digital devices is mentioned 12 times, with concerns ranging from limited access to lack of knowledge in using digital devices. Educational challenges related to digital access indicate that the disparity in access not only affects availability but also the quality of educational engagement and support, impacting students' learning experiences. This is raised 7 times addressing issues like difficulty in completing online assignments, lack of technical support, and distractions. Infrastructure limitations though not a predominant issue are also a hindrance, pointing to the need for broader systemic improvements in internet infrastructure to support equitable digital access.

3.3 Digital Literacy and Skills Gap

Table 2. Descriptive statistics of the level of digital literacy and skills gap

	Strongly Agree	Agree	Disagree	Strongly disagree	Standard Deviation	Weighted Mean	Rank	VI
1. Students in my school have adequate training and resources to develop digital literacy skills.	9	54	12	0	0.53	2.96	3	A
2. Digital literacy development is incorporated into the curriculum effectively.	16	53	6	0	0.52	3.13	2	A
3. Students feel confident in using digital tools and resources for their learning.	19	50	6	0	0.55	3.17	1	A

The majority of respondents agree that students receive adequate training and resources for digital literacy, though there are some indications that improvements could be made, as not all respondents strongly agree. Teachers are generally perceived as effective in integrating digital literacy into their curriculum, with a high level of agreement among respondents, though there remains a small group that feels otherwise. Confidence in using digital tools and resources is relatively high among students, suggesting that current efforts to integrate digital literacy are having a positive impact on student confidence in using technology.

The standard deviations of 0.53, 0.52, and 0.55 on digital literacy and skills gap suggest consistent responses among participants, indicating moderate variability. This implies a relatively uniform perception of the digital skills gap, highlighting that while some disparity exists, it is generally viewed similarly across the surveyed group.

To validate the responses of the respondents, they were asked what specific areas of digital literacy or skills they think require more focus or improvement to enhance their ability to use technology effectively for learning purposes. There is a strong emphasis on enhancing digital literacy skills, with specific mentions of practical skills including handling digital devices, developing critical skills, learning Microsoft Office, computer tools, coding, and programming. Another is cybersecurity awareness and measures which is a significant concern among respondents, suggesting that current digital literacy programs should incorporate more comprehensive cybersecurity training. Key points are cybersecurity awareness, technology security, private and secure connections, data privacy, and enhancing digital security.

Critical thinking skills are also a major concern perceived to help respondents distinguish facts from fake news. Developing critical thinking is seen as essential, especially in the context of navigating digital information. This highlights the importance of integrating critical thinking exercises into digital literacy education. Competence in educational technology and resources through online platform tools like Google Meet, Google Classroom, computer-based functions, and enhancing technology-based learning are other areas for improvement. For better integration and usage of educational technology, respondents call for more resources and training on using these tools effectively.

Though mentioned less frequently, internet proficiency is a critical area for improvement. It includes effective navigation and proper internet usage. This suggests the need for training on efficient and safe internet browsing and research skills. Also of equal importance is Social and Online Behavior which includes awareness of cyberbullying, responsible use of technology, and avoiding negative aspects of social media. Responsible online behavior and understanding the impacts of social media are important. Finding materials online, slow learning abilities, and knowledge gaps in digital devices are part of the difficulties encountered. These notable challenges in accessing and using digital tools effectively need tailored support and resources to help bridge these gaps.

Further, programming and coding are highlighted as essential skills. This calls for including courses developing coding and programming skills in the curriculum that will foster problem-solving and logical thinking abilities. Using digital meeting platforms and developing presentation skills are also mentioned as crucial for modern education and professional environments.

3.4 Equitable Integration of Technology

Table 3. Descriptive statistics of the level of equitable integration of technology

	Strongly Agree	Agree	Disagree	Strongly disagree	Standard Deviation	Weighted Mean	Rank	VI
1. Technology is integrated seamlessly into classroom activities to enhance learning outcomes.	18	51	6	0	0.54	3.16	1	A
2. The school provides teachers with sufficient training and support to integrate technology effectively.	14	55	6	0	0.51	3.11	3	A
3. The school provides equal opportunities for all students to access technology-enhanced learning materials.	18	49	8	0	0.57	3.13	2	A

The high weighted mean suggests that most respondents believe technology is effectively integrated into classroom activities, enhancing learning outcomes. This indicates a positive perception of technology's role in education. While there is agreement that teachers receive adequate training and support, the slightly lower weighted mean indicates that there is still room for improvement in this area to ensure teachers feel fully prepared. The responses indicate that most students believe there is equitable access to technology-enhanced learning materials. However, the presence of some disagreement highlights the need to address any gaps in access to technology.

Standard deviations of 0.54, 0.51, and 0.57 respectively on equitable integration of technology indicate moderate variability in responses. This consistency suggests that respondents generally agree on the level of technology integration, though some disparity in perceptions remains. Overall, the views on technology integration equity are relatively aligned across the surveyed group.

The most frequent response for support or resources that promote equitable learning opportunities for students is access to technology tools. That means ensuring access to current technology tools, and internet connectivity and providing robust technical support are critical for the successful integration of technology in education. As perceived by the students, the need for technology training, workshops, and continuous professional development for educators are also major issues in effectively integrating technology into their teaching. It is essential to equip educators with the necessary skills and confidence to use technology effectively in their teaching practices. Providing a variety of educational resources and ongoing support helps teachers integrate technology more seamlessly into their teaching, promoting better learning outcomes.

Financial support or assistance is another need to ensure both educators and students have the resources to access the internet and digital learning tools. It can alleviate barriers to accessing necessary technology, ensuring all students and teachers can participate fully in technology-enhanced education. Internet Accessibility by ensuring reliable internet access for both teachers and students is essential for effective digital learning. Technology in education is also a factor in integrating advanced technologies, such as AI tools, to support teaching and learning, making education more engaging and effective. On the other hand, offering offline access to resources ensures that students and teachers can continue their work without interruption due to connectivity issues, promoting continuous learning.

3.4 Promoting Inclusive Learning Environments

The weighted mean of 3.04 indicates a generally positive response regarding the accessibility of digital resources for students with disabilities. However, with some respondents disagreeing, there is still a significant minority who feel that improvements are needed to fully support students with disabilities. The weighted mean of 3.01 shows that most students feel technology-based learning activities are culturally relevant and inclusive. It suggests

that the school is making efforts to incorporate diverse cultural perspectives and inclusive practices in its digital learning activities.

Table 4. Descriptive statistics of the level of promoting inclusive learning environments

	Strongly Agree	Agree	Disagree	Strongly disagree	Standard Deviation	Weighted Mean	Rank	VI
1. Digital resources and materials used in my school are accessible to students with disabilities.	15	48	12	0	0.60	3.04	1.5	A
2. Technology-based learning activities in my school are culturally relevant and inclusive.	11	56	6	2	0.58	3.01	2	A
3. Students receive personalized learning experiences through technology.	13	53	8	1	0.58	3.04	1.5	A

The presence of some disagreement indicates there are areas where the inclusivity and cultural relevance of the curriculum could be further improved. A weighted mean of 3.04 indicates that many students feel they receive personalized learning experiences through technology. It shows a strong positive perception of personalized learning. However, with a minority of respondents disagreeing it also suggests that not all students feel their individual learning needs are being met through current technological practices.

Standard deviations of 0.60, 0.58, and 0.58 on promoting inclusive learning environments suggest moderate variability in responses. This indicates a consistent but somewhat diverse range of perceptions among respondents, reflecting a general agreement with some differences in opinions on how inclusively learning environments are being promoted.

Overall, the survey results show a generally positive perception of the accessibility and inclusivity of digital resources. This suggests that the school's efforts in these areas are being recognized by the majority of students. The presence of disagreement across all three areas on the other hand highlights the need for continuous improvement. Ensuring that digital resources are fully accessible to all students, particularly those with disabilities, remains a priority.

The use of technology for multiple languages, grammar correction, translating tools, teaching cultural values, and promoting cultural learning are considered the most relevant. Technology can bridge cultural gaps by offering tools for language translation and cultural education. Integrating these tools can help students from diverse backgrounds feel more included and respected. Also, online platforms like Google Meet, Google Docs, Google Classroom, and discussion forums are crucial for fostering collaboration and inclusivity. These tools help create a participatory learning environment where all students can engage regardless of physical presence.

Ensuring everyone has access to technology, equal access across genders, and inclusive platforms are key points by respondents for equity in school. Schools need to ensure that all students, regardless of gender or other factors, have the same opportunities to benefit from digital resources. The use and improvement of technology for online learning especially for students with disabilities were mentioned in particular. There is a need for continuous improvement in technology to better support them and overall enhance their learning experiences. Practical applications of technology in education can significantly enhance learning experiences, making it more interactive and accessible.

Guidance and rules for technology use especially in spreading misinformation were stressed by respondents. Clear guidelines and policies are necessary to ensure technology is effectively and responsibly used, minimizing the risk of misinformation and misuse. Using AI for learning, promoting innovation through technology, offering new opportunities for personalized and effective learning experiences, and fostering creativity and critical thinking among students are but some ways to foster an inclusive learning environment. Also posting culturally relevant content, and promoting cultural knowledge can enhance students' understanding and appreciation of different cultures, nurturing a more equitable place to learn and engaging educational experience for all students.

3.5 Composite Scores for Independent and Dependent Variables

Composite Scores for the Independent Variable (IV), “Technology Integration Strategies” are average scores (weighted mean) across items related to access to devices, internet connectivity, support for digital access, and training resources. At the same time, the Dependent Variable (DV), “Digital Inclusion and Literacy Levels” are average scores (weighted mean) across items related to digital literacy, confidence in using digital tools, and equitable access to digital resources. The standard deviation (SD) of both IV and DV are related to the items where they are identified.

Table 5. Independent variables “Technology integration strategies”

Independent Variables	Mean	SD
1. Access to Devices	3.28	0.45
2. Internet Connectivity	2.85	0.79
3. School Support for Digital Access	2.96	0.60
4. Adequate Training and Resources for Digital Literacy	2.96	0.53
5. Effective Integration of Digital Literacy in Curriculum	3.13	0.52
6. Confidence in Using Digital Tools	3.17	0.55
7. Seamless Integration of Technology in Classroom Activities	3.16	0.54
8. Sufficient Training for Teachers	3.11	0.51
9. Equal Opportunities to Access Technology-enhanced Learning Materials	3.13	0.57

Table 6. Dependent variables “Digital inclusion and literacy levels”

Dependent Variables	Mean	SD
1. Equity in Device Access	3.28	0.45
2. Home Internet Connectivity	2.85	0.79
3. Accessibility of Digital Resources for Students with Disabilities	3.04	0.60
4. Perceived Adequate Training and Resources for Digital Literacy	2.96	0.53
5. Digital Literacy in an Inclusive Curriculum	3.04	0.60
6. Inclusive use of Digital Tools	3.17	0.55
7. Cultural relevant Technology-based Learning Activities	3.01	0.58
8. Personalized Learning Experiences	3.04	0.58
9. Inclusivity of Technology-based Learning Activities	3.01	0.58

Single-factor ANOVA results reveal that the F-value (0.44285) is less than the F critical value (4.493998) and the P-value (0.51523) is greater than 0.05. This implies that the null hypothesis “Integrating technology effectively into the school curriculum and providing comprehensive support has no significant impact on digital access disparities and enhancing digital literacy among high school students” cannot be rejected. The ANOVA results indicate that there is no statistically significant difference between the means of the independent variable (IV) and the dependent variable (DV).

The Pearson correlation coefficient between IV and DV is 0.838379. This value indicates a very strong positive linear relationship between IV and DV. A correlation coefficient close to one (1) implies that as the values of IV increase, the values of DV also tend to increase, and vice versa. Using Regression Analysis, the Multiple R value of 0.8384 reaffirms the strong positive linear relationship between IV and DV. The R Square value of 0.7029 suggests that approximately 70.29% of the variance in DV can be explained by IV, indicating a strong model fit. The regression model is statistically significant, as indicated by the F-value of 16.559 and a P-value of 0.0047 which is less than 0.05.

The slope (IV coefficient) of 0.7676 is statistically significant, implying that for every one-unit increase in IV, DV increases by approximately 0.7676 units. The intercept is not statistically significant (P-value = 0.2832), since this value is greater than 0.05.

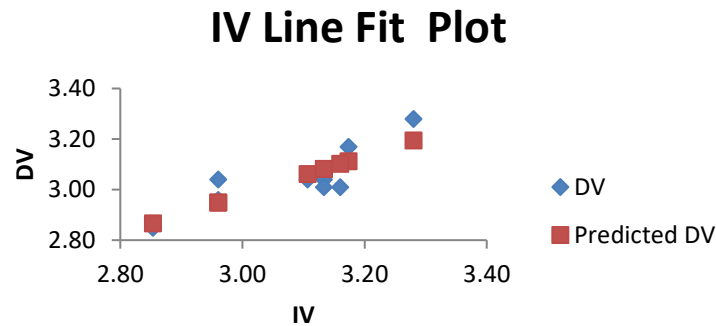


Figure 1. IV Line Fit Plot with DV and Predicted DV

In summary, the ANOVA Results show no significant difference between the means of IV and DV but the Pearson Correlation Analysis otherwise shows a very strong positive linear relationship between IV and DV. Regression Analysis reaffirms the correlation results where IV and DV are statistically significant, with IV being a strong predictor of DV. The model explains a substantial portion of the variance in DV, and the slope indicates a positive linear relationship. These analyses collectively suggest that there is a strong and significant positive relationship between the independent variable (IV) and the dependent variable (DV). The indicators thereby imply to reject the null hypothesis as against the ANOVA results.

3.6 Challenges in Digital Access

Despite efforts to ensure fair access to devices at school, major hurdles remain in establishing comparable levels of digital access at home, primarily due to budgetary constraints limiting home internet access (González-Betancor et al., 2021). The primary obstacle remains home internet access, which is frequently limited by budgetary restraints experienced by students' families.

This digital gap exacerbates educational disparities, particularly for low-income students (European Commission et al., 2021; Afzal et al., 2023) who cannot afford consistent or high-speed internet access. As a result, these students encounter barriers to completing schoolwork, accessing online resources, participating in extracurricular digital learning opportunities, and increasing educational disparities. Schools and policymakers must address this issue by looking into solutions including subsidized internet programs, collaborations with internet service providers, and community Wi-Fi efforts to guarantee that students have dependable home internet connections.

3.7. Effectiveness of Digital Literacy Programs

Digital literacy programs generally succeed in providing basic digital skills (Van der Vlies, 2020). However, gaps persist in vital areas such as cybersecurity and critical thinking. Educating students about Cybersecurity is critical in today's digital world because it protects them from online threats and teaches them safe internet practices. Equally important are critical thinking skills since they allow students to assess the large quantity of information available online judiciously. A comprehensive education on cybersecurity and activities that promote critical thinking should be in place to enhance the digital literacy programs' effectiveness. Enhancing these programs with real-world scenarios and problem-solving exercises can better prepare students for safe and effective digital navigation (Garmendia & Karrera, 2019).

3.8 Support for Technology Integration

Technology has been found to improve learning experiences by making them more interesting and participatory. Positive attitudes towards classroom technology highlight its potential to enhance learning (Johannes et al., 2017). Continuous professional development for teachers is essential for effective technology integration, addressing both technological and pedagogical strategies (Johnston, n.d.; Gottschalk & Weise, 2023). This training should address not just how to utilize new devices and software but also approaches for effectively incorporating technology into the curriculum. Furthermore, enough technical assistance and resources must be available to handle any challenges that may emerge, ensuring that technology improves rather than impedes the learning process.

3.9 Inclusivity and Accessibility

Effective digital education must prioritize inclusivity and accessibility, ensuring materials are compatible with assistive technologies and culturally relevant (Cerna et al., 2021; Brussino, 2021). There is a need to make digital materials available to all students, including those with impairments. Schools should train educators to create inclusive resources that can help provide equitable learning environments for all students (UNESCO, 2020; Mintz et al., 2024). Furthermore, culturally relevant digital resources are required to engage students from diverse backgrounds. This may be accomplished by infusing multicultural viewpoints into digital content and making certain that instructional materials represent the diversity of the student population.

4.0 Conclusion

As the persistent barriers to digital inclusion among high school students were identified, the study underscores the critical issue of home internet access, particularly for low-income students, thus advancing the understanding of digital inequality beyond mere device availability (González-Betancor et al., 2021). This emphasizes the need for holistic approaches to digital inclusion such as subsidized internet access, partnerships with internet providers, and community Wi-Fi initiatives to ensure reliable home connectivity. Digital literacy programs have equipped students with basic skills but by pinpointing gaps in cybersecurity and critical thinking within digital literacy programs, the research expands the current knowledge on essential digital skills required for safe and effective online engagement (Van der Vlies, 2020). This insight into specific skill areas advances the development of more comprehensive digital literacy curricula. Incorporating real-world scenarios and problem-solving into these programs is essential for preparing students to navigate digital spaces securely.

The research highlights the importance of ongoing professional development for teachers, addressing both technological proficiency and pedagogical strategies (Johnston, n.d.; Gottschalk & Weise, 2023). This contribution underscores the need for continuous training to keep pace with technological advancements, thus enhancing the efficacy of technology integration in education. Training should include new devices, software, and effective pedagogical strategies. To ensure inclusivity, emphasis on creating accessible and culturally relevant digital content advances the discourse on equitable education (Cerna et al., 2021; Brussino, 2021). All students, including those with disabilities and from diverse backgrounds can benefit from digital resources which align with contemporary educational goals of inclusivity.

To address the challenges identified and promote a more equitable and inclusive educational environment for high school students, the following recommendations are proposed:

- a. Enhance infrastructure to provide consistent and reliable internet access. This involves improving internet infrastructure to ensure students, especially those from financially challenged backgrounds, have stable connectivity. Collaborations could include setting up community Wi-Fi areas, partnering with ISPs for affordable broadband, and school initiatives like lending portable Wi-Fi hotspots.
- b. Provide financial assistance or subsidies for digital devices and internet services. Schools and government bodies should create support systems, such as device lending programs and financial aid, to relieve economic strain on households and equip students with necessary technology.
- c. Develop and implement comprehensive digital literacy programs. These programs should cover cybersecurity awareness, critical thinking skills, and practical digital skills training. Curriculum updates and teacher resources are necessary for effective delivery.
- d. Increase training opportunities and resources for teachers. Regular workshops on new technologies and peer mentoring programs can enhance teachers' technical skills and integration of digital tools in teaching. Reliable technical support is also important for troubleshooting and assistance with new tools.
- e. Ensure digital resources are accessible and culturally relevant. This involves using assistive technologies, providing multiple means of representation, and adhering to accessibility standards. Culturally relevant content should incorporate multicultural perspectives and be available in multiple languages.
- f. Establish mechanisms for continuous feedback and improvement. Regular surveys, focus groups, and pilot programs can gather feedback and test new technologies, ensuring relevant and effective technology integration.

This study significantly advances the field of digital inclusivity by highlighting the persistent challenges and proposing targeted solutions to reduce digital disparities among high school students. Future research can build on these findings contributing to a more inclusive and digitally proficient educational environment by exploring the following areas:

- Investigating the long-term effects of subsidized internet access and community Wi-Fi initiatives on students' academic performance and digital engagement;
- Evaluate the impact of enhanced digital literacy programs that incorporate cybersecurity and critical thinking on students' overall digital competency and safety;
- Comparative studies on different models of professional development for teachers in technology integration;
- Exploring best practices for creating inclusive and culturally relevant digital content, and assessing its impact on student engagement and learning outcomes.

5.0 Contributions of Authors

The sole author was responsible for writing, encoding, editing, and supervising the conduct of the survey and interview as well as data analysis of the results.

6.0 Funding

There is no funding agency for this research. Expenses were shouldered by the author.

7.0 Conflict of Interests

There is no conflict of interest in the conduct of this research.

8.0 Acknowledgment

I would like to extend my deepest gratitude to Dr. Dennis G. Caballes, Dean of the NTC Graduate School and Professor in Quantitative Research in Educational Leadership, for his invaluable insights and guidance throughout this research. I am also immensely grateful to Dr. Ma. Corazon Huelar, UE Program Head/Research Coordinator, and Dr. Mildred P. Jimenez, UE Education/Research Faculty, along with Dr. Rowena De Guzman, CPACE President, for their role as validators of the research survey instrument and help in the interpretation of the statistical results.

9.0 References

- Addressing the digital divide | UN-Habitat. (n.d.). <https://unhabitat.org/programme/legacy/people-centered-smart-cities/addressing-the-digital-divide>
- Afzal, A., Khan, S., Daud, S., Ahmad, Z., & Butt, A. (2023). Addressing the Digital Divide: Access and use of technology in education. *Journal of Social Sciences Review*, 3(2), 883–895. <https://doi.org/10.54183/jssr.v3i2.326>
- Beaunoyer, E., Dupéré, S., & Guittou, M. J. (2020). COVID-19 and digital inequalities: Reciprocal impacts and mitigation strategies. *Computers in Human Behavior*, 111, 106424. <https://doi.org/10.1016/j.chb.2020.106424>
- Brussino, O. (2021). Building capacity for inclusive teaching. OECD Education Working Papers. <https://doi.org/10.1787/57fe6a38-en>
- Cerna, L. et al. (2021). Promoting inclusive education for diverse societies. OECD Education Working Papers. <https://doi.org/10.1787/94ab68c6-en>
- European Commission, D. et al. (2021). Enhancing Learning through Digital Tools and Practices: how Digital Technology in Compulsory Education can Help Promote Inclusion: Final Report, Publications Office, <https://data.europa.eu/doi/10.2766/365846>.
- Garmendia, M., & Karrera, I. (2019). ICT Use and Digital Inclusion among Roma/Gitano Adolescents. *Media and Communication*, 7(1), 22–31. <https://doi.org/10.17645/mac.v7i1.1624>
- González-Betancor, S. M., López-Puig, A. J., & Cardenal, M. E. (2021). Digital inequality at home. The school a compensatory agent. *Computers and Education/Computers & Education*, 168, 104195. <https://doi.org/10.1016/j.compedu.2021.104195>
- Gottschalk, F., and Weise, C. (2023). Digital Equity and Inclusion in Education: An Overview of Practice and Policy in OECD Countries. Organisation for Economic Co-operation and Development. [https://one.oecd.org/document/EDU/WKP\(2023\)14/en/pdf](https://one.oecd.org/document/EDU/WKP(2023)14/en/pdf)
- Gouëdard, P., Pont, B., & Viennet, R. (2020). Education responses to COVID-19: Implementing a way forward. OECD Education Working Papers. <https://doi.org/10.1787/8e95f977-en>
- Hatlevik, O. E., & Christophersen, K. (2013). Digital competence at the beginning of upper secondary school: Identifying factors explaining digital inclusion. *Computers and Education/Computers & Education*, 63, 240–247. <https://doi.org/10.1016/j.compedu.2012.11.015>
- Helsper, E. J., & Van Deursen, A. J. a. M. (2016). Do the rich get digitally richer? Quantity and quality of support for digital engagement. *Information, Communication & Society*, 20(5), 700–714. <https://doi.org/10.1080/1369118x.2016.1203454>
- Johannes, C., Morten, R., Niall, W., Anne, G., & Laurenz, L. (2017). Digital Education Policies in Europe and beyond: Key design principles for More Effective Policies. RePEC: Research Papers in Economics. <https://doi.org/10.2760/462941>
- Johnston, T. (n.d.). Training teachers to bridge the digital divide. W&M ScholarWorks. https://scholarworks.wm.edu/wmer/vol3/iss2/4/?utm_source=scholarworks.wm.edu%2Fwmer%2Fvol3%2Fiss2%2F4&utm_medium=PDF&utm_campaign=PDFCoverPages
- Kim, H. J., Yi, P., & Hong, J. I. (2021). Are schools digitally inclusive for all? Profiles of school digital inclusion using PISA 2018. *Computers and Education/Computers & Education*, 170, 104226. <https://doi.org/10.1016/j.compedu.2021.104226>
- Mascheroni, G., Cino, D., Mikuska, J., & Smahel, D. (2022). Explaining inequalities in vulnerable children's digital skills: The effect of individual and social discrimination. *New Media & Society*, 24(2), 437–457. <https://doi.org/10.1177/14614448211063184>
- Mintz, J., Connolly, C., O'Brien, E., Daniela, L., & Ceallaigh, T. Ó. (2024). Inclusive Digital Education: Contexts, Practices and Perspectives. *Computers in the Schools*, 1–5. <https://doi.org/10.1080/07380569.2024.2340873>
- OECD (2019). TALIS 2018 Results (Volume I): Teachers and School Leaders as Lifelong Learners, TALIS, OECD Publishing, Paris, <https://doi.org/10.1787/1d0bc92a-en>.
- OECD (2020). PISA 2018 Results (Volume V): Effective Policies, Successful Schools, PISA, OECD Publishing, Paris, <https://doi.org/10.1787/ca768d40-en>.
- Publications Office of the European Union. (2021). Enhancing learning through digital tools and practices : how digital technology in compulsory education can help promote inclusion : final report : October 2021. Publications Office of the EU. <https://op.europa.eu/en/publication-detail/-/publication/b12644c4-315c-11ec-bd8e-01aa75ed71a1/language-en>
- Selwyn, N. (2016). Digital Inclusion: Can we Transform Education Through Technology? <https://doi.org/10.31235/osf.io/m5fw7>
- Sevilla, A., Phimister, A., Krutikova, S., Kraftman, L., Farquharson, C., Dias, M. C., Cattani, S., & Andrew, A. (2020). Learning during the lockdown: real-time data on children's experiences during home learning. <https://doi.org/10.1920/bn.ifs.2020.bn0288>
- UNESCO. (2020). Background Paper for GEM Report 2020, Technology for Inclusion. <https://unesdoc.unesco.org/ark:/48223/pf0000373655>
- Van Der Vlies, R. (2020b). Digital strategies in education across OECD countries. OECD Education Working Papers. <https://doi.org/10.1787/33dd4c26-en>
- Wang, C., Chen, X., Yu, T., Liu, Y., & Jing, Y. (2024b). Education reform and change driven by digital technology: a bibliometric study from a global perspective. *Humanities & Social Sciences Communications*, 11(1). <https://doi.org/10.1057/s41599-024-02717-y>.

Product Development and Market Acceptability of Lemon Grass Bottled Tea (*Cymbopogon citratus*)

Jade Mark C. Salubre*, Jennifer T. Pelegrino, Juma P. Wabinga, Juanita C. Leopoldo
Entrepreneurship Department, Davao de Oro State College, Compostela, Davao de Oro, Philippines

*Corresponding Author Email: jademark.salubre@ddosc.edu.ph

Date received: June 19, 2024

Date revised: July 3, 2024

Date accepted: July 6, 2024

Originality: 91%

Grammarly Score: 99%

Similarity: 9%

Recommended citation:

Salubre, J.M., Pelegrino, J., Wabinga, J., Leopoldo, J. (2024). Product development and market acceptability of lemon grass bottled tea (*Cymbopogon citratus*). *Journal of Interdisciplinary Perspectives*, 2(8), 408-421.
<https://doi.org/10.69569/jip.2024.0299>

Abstract. Lemongrass grows abundantly in Compostela, Davao de Oro, thriving with proper drainage and adequate sunlight. Traditionally used as an herbal tea, its pale light-yellow color may not be appealing, locally produced packaging is unavailable, and its commercialization in the province of Davao de Oro is limited. This study aimed to increase the market competitiveness of lemongrass bottled tea by adding calamansi and honey flavors from locally available agricultural produce and packaging them in polyethylene plastic bottles. The research determined the most acceptable honey and calamansi-flavored lemongrass bottled tea in terms of (a) sensory qualities and (b) formulation or percentage of honey and calamansi. Sensory evaluation involving two hundred consumer-type panelists assessed the sensory qualities and acceptability of the lemongrass bottled tea formulations. Modes and means were used to interpret the results of the sensory evaluation. ANOVA with repeated measures determined if significant differences existed among samples. The most acceptable product formulation was compared with similar products currently offered in the marketplace. Results showed no significant difference with similar products and revealed the potential marketability of honey and calamansi-flavored lemongrass bottled tea.

Keywords: Lemongrass drink; Market acceptability; Product development; Sensory evaluation; Value-added product.

1.0 Introduction

Beverages are liquid products that food processing companies manufacture for human consumption (Grumezescu, A. and Holban, 2019). Beverages account for a significant portion of the market because people drink them at all times of the day and in various settings. Beverages may be broken down into several categories, namely those that include alcohol, those that do not contain alcohol, and those that contain dairy products (Rocha et al., 2017). Non-alcoholic drinks are the results of the distillation process that are drunk without alcoholic ingredients. The production procedure for these beverages does not include fermentation (Nanasombat et al., 2015). The sale of packaged drinks that do not include alcohol substantially influences the global economy, as shown by the revenue of \$1.038T and the typical consumption capacity per capita of 109.5 L in the year 2020. The volume of this market is forecasted to expand at a rate of 6.8% yearly, ultimately reaching 935.76B liters by 2025 (Statista, 2020).

Moreover, healthier beverage options such as non-alcoholic drinks are one of the most often eaten as part of contemporary diets since non-alcoholic beverages provide customers various benefits, including rehydration, pleasure, ease of consumption, and other advantages. When the whole category of beverages is considered, these items are also viable options (Piorkowski and McClements, 2014; Shachman, 2004). There has already been a movement in global consumer preferences toward foods that provide additional health advantages because of

socioeconomic developments, a rise in the average life duration, the rising number of elderly individuals, and a need for an enhanced quality of life with lower hospitalization expenditures.

Existing academic literature has several categories for packaged non-alcoholic drinks, and generally, these classifications are based on the manufacturing processes and their corresponding ingredients (Rocha et al., 2017). Two primary categories may be used to manufacture packaged non-alcoholic beverages: ready-to-drink (RTD) goods and diluted beverage products (Ashurst, 2016). Packaged ready-to-drink (PTD) non-alcoholic drinks may be further subdivided into juices, carbonated soft drinks (CSDs), bottled waters, and still drinks (Shachman, 2004). These subcategories may be categorized technologically by statistics on the top-selling products worldwide (Statista, 2020). Non-carbonated beverages, sometimes known as still drinks, do not include any added carbonation. This sector was challenging to compete in the past because customers favored handcrafted items over commercial ones, and the products needed better quality.

On the other hand, throughout the previous few decades, shifts in lifestyle preferences regarding eating habits and advancements in technology capabilities have been favorable to the growth of this product area (Ashurst, 2016). On the other hand, drinks, such as fruit and flavored drinks, ready-to-drink coffee and iced tea products, non-alcoholic beer, and flavored water may be categorized as industrially distinct categories, as presented in Figure 1. The category of juices includes the many kinds of packaged vegetable and fruit juices that include 100 percent vegetable and fruit liquid content. Bottled water may be generated from various sources, including healthy water, mineral, tap water, or spring water.

Recently, there has been an upsurge in demand among Filipino consumers for health drinks rather than carbonated beverages, which has led to an increase in both the production and consumption of non-carbonated drinking drinks in the Philippines. Several government agencies, such as the Department of Education (DepEd), enacted a regulation prohibiting the sale of sugar-based artificial, carbonated, and unhealthy juices within school premises. These drinks are "artificial" juices (Reeve et al., 2018). Ready-to-drink (RTD) drinks, which offer various health benefits, such as those derived from natural therapeutic origins or those with a high antioxidant concentration, are now attracting the attention of customers who are more inclined towards a healthier beverage alternative. RTD tea has been the beverage category with the most rapid growth in total percentage volume over the last several years, and this trend is projected to continue (Statista, 2020).

In Davao de Oro, indigenous plants are available, used, and innovated. Therefore, it is imperative to explore the potential of indigenous plants like lemongrass in developing or innovating existing products. Lemongrass (*Cymbopogon citratus*) is a naturally fragrant tall sedge belonging to the Poaceae family (Lawrence et al., 2015). It has a wide range of medical applications, including the treatment of convulsions, digestive system spasms, fever, cough, vomiting, and high blood pressure.

The lemongrass plant has the potential to reach a height of up to 6 inches and has bulblike stems made up of terete and glabrous linearly spaced wrapped leaves with a narrow base and sharp tip (Olorunnisola et al., 2014). The leaf is around 100 cm high, yet it is just 2 cm wide. Squeezing the leaves produces a fragrant essential oil that might be yellow or amber (Tajidin et al., 2012).

Aside from its medicinal use, the aqueous extract of lemongrass is used as a natural flavoring for traditional foods (Ullah et al., 2020) and as an aromatic drink (Wifek et al., 2016) or herbal tea. Lemongrass herbal tea is usually prepared by boiling lemongrass and is naturally drunk without additional flavoring (Nambiar and Matela, 2012). The lemon grass tea infusion is light-colored with a mild lemongrass aroma (Mukherjee et al., 2024). In the study, lemongrass leaves extract, honey, and calamansi extract went through different processes to prevent undesirable changes in their sensorial and nutritional qualities, which are conveniently packed in polyethylene (PET) plastic bottles and ready to be sold.

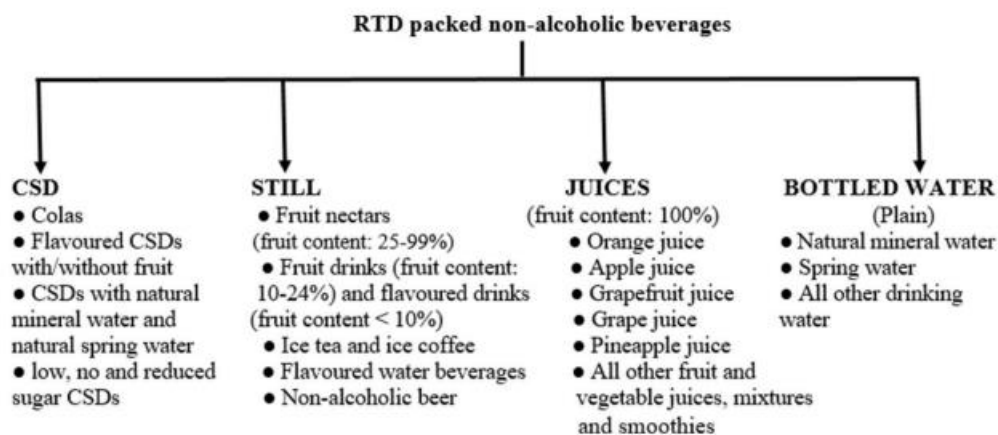


Figure 1. Industrial classification of ready-to-drink (RTD) packed non-alcoholic beverages (Tireki, 2021).

Tanglad is a kind of health drink that has been used for a long time because of its many health advantages. These benefits include acting as a cure for debility, hypertension, and overall bodily weakness, and debility. Lemongrass may treat stomach aches, flatulence, and indigestion (Ekpenyong et al., 2014). The decoction can also be used to treat indigestion. Research conducted by Asaolu et al. (2009) has shown that lemongrass has antioxidant properties. The essential oil component of *Cymbopogon citratus* includes citral, which has been shown to have antioxidant and anticancer characteristics (Sharma et al., 2021). In addition, Sambo et al. (2024) stipulate that lemongrass contains flavonoids, tannins, saponins, alkaloids, cardiac glycosides, and phenols. These are phytochemicals whose therapeutic effects have been established. Thus, the plant may serve as a source of these phytochemicals. In addition, lemongrass contains non-essential amino acids and all the essential amino acids, thus could serve as a source of these essential amino acids to life (Sambo et al., 2024). Hence, the lemongrass beverage has the potential to position itself as a nutritious alternative to carbonated beverages widely existing in the market, not just for children who go to school but also for members of the public.

According to a previous study by Nillos et al. (2017), tea made by decoction or infusion from fresh or dried lemongrass plants includes citral and many antioxidants. Research conducted by Muala et al. (2021) stipulates the conditions and preparations needed to attain a substantial quantity of antioxidants and citral on decoctions made from fresh lemongrass leaves. These studies were used as bases in the study by Nillos et al. (2017) of antioxidant activity, essential oil (citral) content determination, sensory evaluation, and market acceptability of various RTD lemongrass beverage formulations. The exact formulas for the Lemongrass beverage have already been determined, making it a candidate for the ready-to-drink category. In the study, lemongrass leaves extract, honey, and calamansi extract went through different processes to prevent undesirable changes in their sensorial and nutritional qualities, which are conveniently packed in polyethylene (PET) plastic bottles and ready to be sold.

The beverage market linked to healthier product composition will report for forty percent of the total consumer demand by 2025 (Nazir et al., 2019). This makes the market for functional beverages the category of functional foods with the highest compound annual growth rate (CAGR). Beverages may be made functional by including beneficial components such as vitamins, as well as by reducing or eliminating potentially harmful components such as sugar. Since the non-alcoholic beverage industry is mainly driven by its consumers, the trends that develop in terms of these components may be found internationally. More research needs to be conducted on the formulation and development of functional beverages. However, the market for packaged non-alcoholic beverages is large and is forecast to increase even more. Due to large consumption and demand volumes and health advantages, the creation of technically advanced beverages that include functional ingredients is expected to get more thought and interest from both the business world and academic institutions.

Using data from Statista (2020) that predicts volume, the global population prediction for 2025 was used to estimate the average per capita consumption in 2025. This estimate was 114.3 L, projected to have 24% forecasted demand for still beverages such as ready-to-drink bottled teas. Given this enormous trend on the forecasted

demand of still beverages in the market, it supports the notion that there is a vast market potential for the product development of non-carbonated beverages such as Lemon Grass Bottled Tea, which offers a healthier alternative beverage among consumers in the market.

The notion of customers' acceptance is grounded in the elements that influence the acceptability of food, which provides the theoretical concept for the study of consumer acceptance and market acceptability. The terms, such as preference, pleasure, selection, and consumption of a food product and its quality, are sometimes used interchangeably to refer to food acceptability. "Food acceptability" refers to various attitudes and behaviors toward food products. The selection and choice of food a person makes are affected by elements that arise from both the product and the individual (Martinez-Velasco et al., 2023). A model proposed by Wierenga (1983) that shows characteristics that impact the acceptance of food products was used in this research study, as shown in Figure 2. The framework illustrates that in the process of choosing a particular item from a class of food products, different product attributes may play a role. The overall product performance is the result of (1) the relevant perceptual dimensions and beliefs of the consumer concerning the product's performance on the relevant dimensions, as well as (2) how the consumer trades off these product dimensions against each other.

A fast-paced introduction of highly innovative product development initiatives is made available for purchase on the market. Developing new items and innovative ideas is fraught with danger since so many new products have yet to succeed after being introduced to the market. The product could initially only be available in a restricted quantity from the firm on the market. This practice is also known as "test marketing," its primary objective is to gauge the responses of potential customers regarding the demand for and acceptance of the product. This research offered an assessment of the lemongrass sensorial properties to assess the viability of the proposed product development in mass commercialization and market acceptability, which has the potential to become a healthier alternative drink for the public.

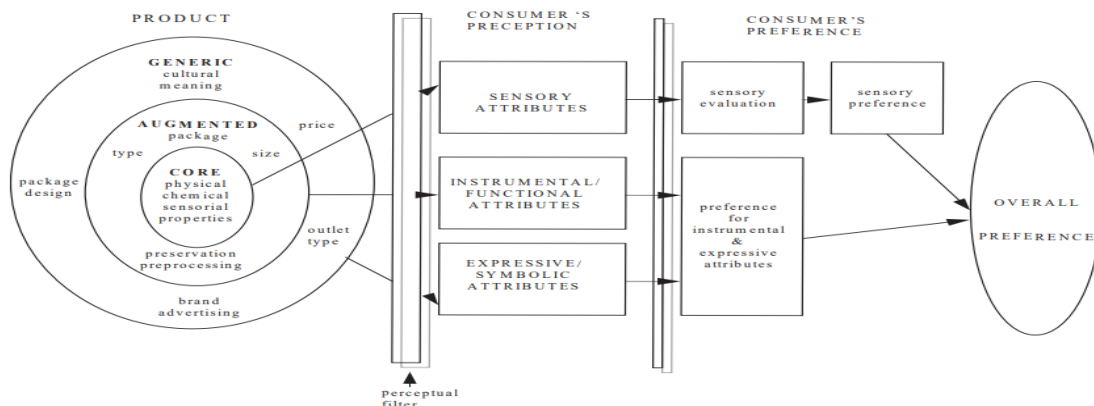


Figure 2. The formation of perceptions and preferences depends on the type of stimuli (Wierenga, 1983).

2.0 Methodology

2.1 Materials

The lemongrass (*Cymbopogon citratus*), honey, and calamansi extract were used in the study. The agricultural materials grow abundantly in Compostela, Davao de Oro, and are readily available in the public markets of Poblacion and nearby municipalities. Other materials used in the product prototyping process were sugar, distilled water, sodium benzoate (used as a food preservative), PET bottles, and product labels. On the other hand, the following equipment will be used to prototype the proposed product development: scissors, knives, chopping boards, pasteurizers, strainers, homogenizers, and bottle-capping machines.

2.2 Product Prototyping

The production of LGB Tea will undergo several processes, namely: the acquisition of raw materials, sorting, washing, slicing, the addition of other ingredients, which are calamansi concentrate and sugar, cooking/pasteurization and sterilization of the product, stirring, straining, bottling/labeling, cooling, and product

storage. Acquiring raw materials involves attaining the primary raw material, lemon grass. The lemon grass will then undergo a sorting process, removing discarded discolored parts. The remaining parts will be washed with water from a deep well. The water from the deep well source will be analyzed microbiologically through third-party analysis to prevent contamination and affirm its safety. The lemon grass will be manually sliced. The process will be done to extract more juices from the lemongrass. Then, boiled water will be prepared in the boiler at a temperature of 100°C, which will be used for tea extraction. The remaining ingredients, namely calamansi concentrate and sugar, will be added to the production of LGB Tea.

The following process flow was utilized during the proposed product development's prototype stage, namely the Lemon Grass Bottled Tea (LGB Tea), as presented in Figure 3.

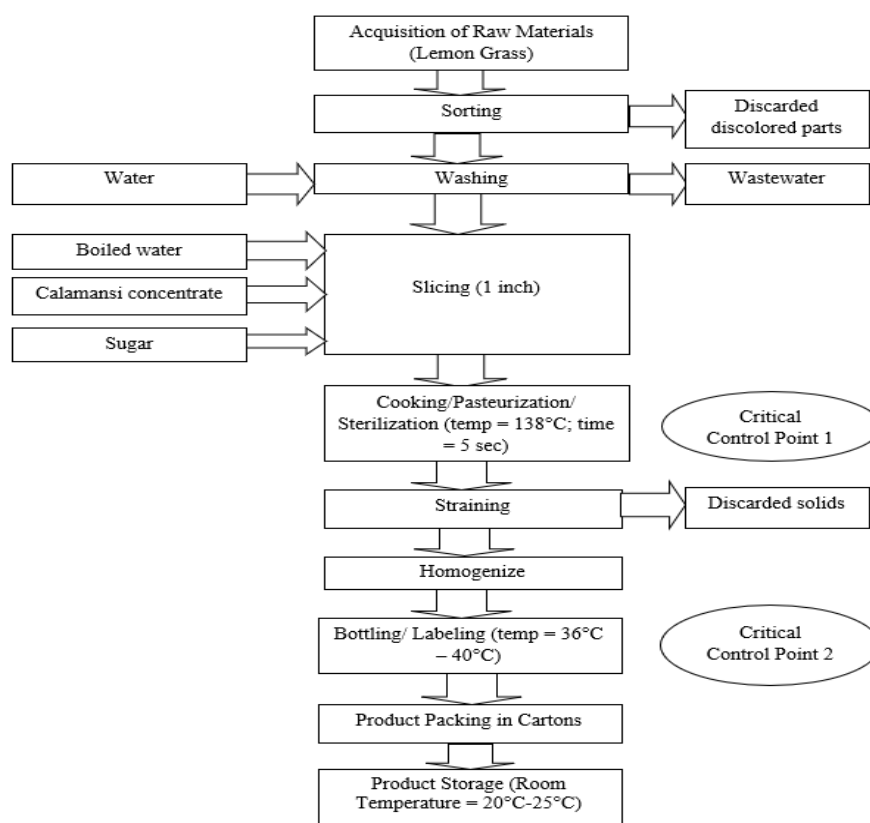


Figure 3. The process flow of Lemon Grass Bottled Tea (LGB Tea)

Cooking, pasteurization, and sterilization of the product will be done next. In this process, the product will be adequately cooked to attain the desired product. Simultaneously, the product will undergo pasteurization and sterilization at 138°C for 5 seconds to eradicate pathogenic microorganisms and to ensure the desired and longer shelf-life viability for the proposed beverage (Naz, 2018). The process will be identified as Critical Control Point 1 (CCP1) in the production since the process should be carefully conducted to safeguard the flavor and nutrients in the beverage product. After this procedure, no additional processes will be conducted to eradicate survivor microorganisms or product contamination. Due to the acidic nature of the product, only yeasts and molds can thrive in this environment. However, these fungi can be eliminated at elevated temperatures. It is, therefore, imperative to conduct this process cautiously.

The lemon grass utilized will be strained through a clean fine-mesh sieve and glass funnel to remove all solids and leave the tea in the boiler. The following process will be homogenizing the product to ensure that it will have a smooth texture. The product's homogeneity is vital since it will dictate the texture of the finished product. The product will be bottled using the ice tea processing machine, which is used for bottling, washing, ice tea filling, and capping the product. The packaging material will be labeled using the adhesive sticker bottle labeling

machine. The process was chosen as Critical Control Point 2 (CCP2) since proper bottling should be conducted to ensure product uniformity, especially in terms of volume or product content. The process is done at 36°C-40°C since the temperature range of yeasts and molds, the only possible contaminants, is between 10°C-35°C (Hutzler et al., 2012). The product will be packed in cartons serving as secondary packaging and ready for distribution. The undistributed products will be kept in the inventory and storage room for two weeks at room temperature. Solid waste and wastewater were also produced in the process.

2.3 Sensory Evaluation

Level 1 Sensory Evaluation – Establishing the Most Preferred Standard Formulation

To establish the most suitable product formulation for the proposed product development study, the following treatments and standard formulations will be utilized. As summarized in Table 1, these will undergo a sensory evaluation analysis to establish the most acceptable product formulation.

Table 1. Modified standard formulation of the proposed product development study

Raw Materials	Formulation 1		Formulation 2		Formulation 3		Formulation 4		Formulation 5	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Lemongrass Extract	20 ml	13.8	15 ml	10.8	20 ml	14.3	20 ml	13.3	20 ml	13.3
Calamansi Concentrate	10 ml	6.9	10 ml	7.1	5 ml	3.6	15 ml	10.0	10 ml	6.7
Sugar	10 g	6.9	10 g	7.1	10 g	7.1	10 g	6.7	10 g	6.7
Water	100 ml	69.0	100 ml	71.4	100 ml	71.4	100 ml	66.7	100 ml	66.6
Honey	5 g	3.4	5 g	3.6	5 g	3.6	5 g	3.3	10 g	6.7
TOTAL	145 ml	100	140 ml	100	140 ml	100	150 ml	100	150 ml	100

The revised standard product formulations for the proposed product development study are shown in Table 1. Two hundred panelists who are untrained in sensory evaluation will evaluate the samples. These panelists will represent diverse localities in the Davao de Oro province. The researchers will use a preference ranking test to evaluate each standard formulation's appearance, color, aroma, taste, and mouth feel. Then, they will determine which of the five treatments is the most preferable product formulation (1 will be the most preferred standard product formulation, and five will be the least preferred standard product formulation). The study's results will be analyzed using Analysis of Variance (ANOVA). If there is a significant difference, the Duncan Multiple Range Test (DMRT) will be carried out with a significance level of $p < .05$, and the means of the preference ranking test with the lowest rank regarding general acceptability will be utilized for the succeeding steps.

Level 2 Sensory Evaluation – Determining the General Acceptability of the Most Preferred Standard Formulation

Once the most preferred product formulation was determined during the level one sensory evaluation analysis, the level 2 sensory evaluation analysis. The most accepted product formulation will be tested for general product acceptability in this product development phase. In this test, an additional two hundred untrained panelists will be requested to determine the overall product acceptability of the most accepted product formulation by using the 9-point hedonic scale to evaluate the appearance, color, aroma, taste, mouth feel, and general product acceptability of the proposed product formulation of Lemon Grass Bottled Tea. This test will determine which product formulation has the highest level of general product acceptability. Once the recommended product formulation's general acceptability is determined and widely acceptable, the researchers will proceed to level three sensory evaluation.

Level 3 Sensory Evaluation – Preference Ranking of the most preferred Standard Formulation in comparison with Identified Competitors

The last part of the sensory evaluation analysis will be the preference ranking of the most preferred standard formulation compared to the identified competitors of the proposed product development. In this sensory evaluation, the researchers will utilize a preference ranking test requesting another two hundred untrained panelists to evaluate the appearance, color, aroma, taste, and mouth feel of each product sample (1 – the most preferred standard product formulation and 4 – product sample of identified competitors) and determine which among the five samples is the most preferable product by the respondents. The Analysis of Variance (ANOVA) will be used to analyze the result statistically. In the occurrence of a significant difference, the Duncan Multiple Range Test (DMRT) at $p < 0.05$ will be used. The result of the ANOVA analysis will determine the position of the proposed product development concerning the existing competitors who offer the same product line in the market. Through this, the researchers can effectively identify and position the proposed product development to

identify the necessary interventions and potential marketing strategies for the product to become highly competitive once it is launched in the marketplace.

2.4 Interview and Survey Questionnaire

In this study, a structured questionnaire that was split into two sections was used. In the first phase of this analysis, the different product formulations of lemongrass bottled tea will be compared in terms of their color, scent, taste, intensity, and general acceptability as a product. This will be done using the five test samples. The 5-hedonic scales are used to conduct this analysis. A rating of one on the lower scale for the feature denotes a very light color, a too-light scent, a very light bitter aftertaste, and a very moderate strength. The top end of the scale of 5 represents the contrary: a very dark color, an overly aromatic and distinct perfume, an overly bitter aftertaste, and extreme intensity. The point on each scale where the qualities are "just right" corresponds to the center point of 3, regardless of the scale.

After evaluating the sensory qualities of the coded product samples, respondents were asked to rate the overall acceptability of the products. A fondness for this was assessed using a five-point Likert scale. On a scale of 1 to 2, "extremely disliked" and "disliked" are respectively represented, while on a scale of 4 to 5, "liked" and "extremely liked" are respectively represented. The midway point on the scale indicates that something is "neither liked nor disliked."

The second section of the questionnaire comprises demographics such as age, gender, education level, employment, annual income, and place of living. In addition, the respondents were questioned about the quantity of liquid they consumed, the location of their most recent purchase, and their top choice when purchasing bottled tea. Questions about health and general attitudes regarding bottled tea and lemongrass, as well as participants' readiness to purchase the goods if they were commercialized and made accessible on the market, were included in the remaining survey items.

2.5 Survey Implementation

The project leader will accompany the research assistant during the study. The research assistant will be expected to speak in the native tongues of the area and have a solid understanding of sensory evaluation procedures and interviewing techniques. Before the survey execution and the pre-testing phase, the enumerators will go through the appropriate training to perform the interviews that the research team has planned. The procedure is going to be looked at by the college's research ethics committee. Following the review and acceptance of the research, a preliminary version of the questionnaire will be used with a select group of respondents. Once the pilot testing is completed, the enumerators will report their experiences in the pilot implementation of the questionnaire, such as identifying unclear or poorly stated items and making ideas for changes. This will take place once the pilot testing has been completed.

2.6 Research Respondents

In the study, 200 untrained panelists from various Davao de Oro municipalities were asked to participate as research respondents. During the proper survey, the researcher/ enumerator thoroughly explains the question and conducts it one-on-one with the respondent. Respondents regardless of age, gender, or economic strata, who are willing to share their perceptions and acceptability of the proposed product development can participate in the survey. Moreover, respondents will not be forced if they do not want to be surveyed. Their engagement and participation in the study are voluntary, and the researchers will not push them to participate. Moreover, participants can withdraw their participation anytime without giving a reason or incurring any costs. A trained enumerator who could communicate with the respondents in their native language and collect data under research supervision.

The researcher will try to fully retain records of this study as the law allows. Any personally identifiable information gathered during this research will be kept strictly confidential unless it becomes essential to safeguard the respondent's rights or well-being. If the respondents give their approval, the researcher can prevent any identifying information about the respondents from being published or discussed at conferences since they will have the respondents' permission to do so.

Apart from this, the information obtained through the survey questionnaire will also be given due consideration during the study to establish the market acceptability of the proposed product development before technology adoption and mass commercialization. This research aims to contribute to the existing academic literature in the food product development discipline. The investigation never influenced any secondary interest, such as economic or academic interest or recognition. Hence, the confidentiality of the respondents will be maintained.

2.7 Data and Statistical Analysis

The information elicited from the survey will be analyzed and interpreted using percent descriptive statistics. The results of the sensory evaluation were tabulated. The model was used to determine lemongrass's color, flavor, and aftertaste, considering varied descriptors in different product formulations. The degree of acceptance of product attributes and the overall acceptability of the lemon grass bottled tea were determined using the mean of the ratings. To assess whether there are significant changes in the degree of acceptability of the traits detected between the samples being tested, an analysis of variance (ANOVA) was performed with repeated measurements using the Statistical Program for the Social Sciences (SPSS). These quantitative approaches emphasize objective measures and the statistical, mathematical, or numerical analysis of data obtained via polls, questionnaires, and surveys or by modifying already collected statistical data using computer techniques.

2.8 Ethical Consideration

As evidenced by the Davao de Oro State College Research Ethics Committee with certification number 386 – 07 - 2023, this study satisfied the requirements of all applicable ethical standards in research. Such certification covers the manner of gathering data from participants, which had extended to voluntary participation, compliance with the data privacy law, obtaining written informed consent from the respondents, and allowing respondents who would have wished to withdraw involvement in the study anytime with proper communication executed.

3.0 Results and Discussion

3.1 Respondents Characteristics

The characteristics of the respondents are summarized in Table 2.

Table 2. Descriptive characteristics of the research respondents

Variables (N=200)	Frequency	Percentage (%)
Sex		
Male	86	43
Female	114	57
Age		
18-20	32	16
21-25	72	36
26-30	58	29
31-35	24	12
36 above	14	7
Educational Attainment		
Elementary Undergraduate	2	1
Elementary Graduate	6	3
High School Undergraduate	12	6
High School Graduate	26	13
College Undergraduate	112	56
College Graduate	42	21
Income Level		
No Income	138	69
<P10,000.00	14	7
P10,001 – P20,000	8	4
P20,001 – P30,000	12	6
> P 30,000	28	14
Occupation		
Student	112	56
Teacher	42	21
Private Worker	30	15
Business Owner	12	6
Office Employee	4	2
Health Conscious		
Yes	174	87
No	26	13

Out of the 200 research respondents, 43% of the study participants are male, while 57% are female. There, 16% of the respondents fell into the age bracket for people aged 18–20 years old, 36% fell into the age bracket for people aged 21–25 years old, 29% fell into the age bracket for people aged 26–30 years old, 12% fell into the age bracket for people aged 31–35 years old, and 7% fell into the age bracket for people aged 35 years old and beyond. Regarding the respondents' places of employment, those who identify as students make up the most significant majority at 56%. This is to be expected mainly because the target market for the product will consist of individuals currently enrolled in primary, secondary, and higher levels of education. The occupations of the other respondents were as follows: 21% are teachers, 15% are workers from the private sector, 6% are company owners, and 2% are office employees.

Regarding the level of education attained by the respondents, 56% were either high school graduates or college undergraduates, 21% were college graduates, 13% were high school graduates, 6% were high school students, and 3% and 1% respectively were elementary school graduates and students. 14% of respondents reported a monthly personal income of more than P30,000.00, 6% reported an income between P20,001 and P30,000, 4% reported an income between P10,001 and P20,000, 7% reported an income of less than P10,000, and 69% reported having no income. 59% of those who participated in the survey said that they get their bottled tea from supermarkets, 23.5% from convenience shops (sari-sari stores), 11.5% from public markets, and 6% either prepare their teas or receive teas from friends and family.

3.2 Sensory Evaluation of the Lemongrass Bottled Tea

Table 3. Analysis of Variance for the overall product acceptability of the 5 different product sample treatments.

Source of Variation	Sum of Squares (SSE)	Degrees of Freedom (df)	Mean Square (MSE)	F-value	P-value
Treatments	102.7	4	25.69		
Error	955.2	995	0.960	26.65	<.0001
Total	1057	999			

Table 3 presents the findings of an analysis of variance performed to determine the acceptability of the lemongrass bottled tea from a sensory perspective, considering factors such as color, scent, taste, and level of potency or intensity. Respondents reported the predominant lemongrass sample formulation as having a light-yellow color. In contrast, lemongrass tea with varying quantities of honey and calamansi extract was described as having a color range from light yellow to golden yellow. Aroma ranged from "like very slightly" to "like very much," depending on the different product compositions. The flavor was bitter, with an intensity between moderate and vigorous. Regarding the general acceptability of the product, most respondents selected either "like moderately" or "like very much" as their rating. The analysis of variance (ANOVA) produced an F-value of 26.65 and a $p < .0001$, which indicated a significant difference in how the respondents viewed the five different product formulations or treatments.

3.3 Best Product Formulation

Due to the ANOVA result, which indicated a significant difference among the five product formulations of the lemongrass bottled tea, it is imperative to determine the most widely acceptable product treatments among the five samples. A preference ranking test through the Duncan Multiple Range Test (DMRT) was conducted to determine which among the five different product formulations is the most widely accepted product sample, as DMRT was commonly used in agricultural research and food product development studies (Midway et al., 2020). Results showed that treatment 5 was the most preferred product sample of the respondents. Table 4 shows the summary of the statistical analysis of the sensory evaluation.

Table 4. Duncan Multiple Range Test (DMRT) value of the 5 different product sample treatments.

Treatment	Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5
Rank Sum	500	696	856	508	440
Average Rank Sum	2.50	3.48	4.28	2.54	2.20
Rank Sum Difference with T5*	60	196	356	8	N/A
Relationship with T5*	NSD	SD	SD	NSD	N/A

*Treatment 5 was used as the benchmark for indicating significant difference as the most preferred product sample

The results summary of the preference ranking test among the five different product sample treatments is now presented in Table 4. Results showed that Treatment 5 got the lowest average rank sum at 2.2, indicating that this is the most preferred product formulation of the 200 sensory panelists. Furthermore, the relationship between treatment in comparison with other product treatments is also presented. Before establishing the relationship between treatments, the least significant difference (LSD) was computed first and was calculated at 81.17. Thus, any difference lower than LSD signifies no significant difference with the most preferred product treatment, while the difference higher than LSD signifies a significant difference with the most preferred product formulation.

Results showed that Treatment 5 is significantly preferred over Treatments 2 and 3, but shows no significant difference with Treatments 1 and 4, respectively. This implies that Treatments 2 and 3 possess moderate lemongrass flavor, although a varied consumer panel acceptability was observed. This result may be due to the obscured effect of the color of the product sample, as it was established that a darker color is associated with a more robust lemongrass flavor (Spence & Levita, 2022). Thus, Treatments 2 and 3 were liked slightly in terms of the strength of the lemongrass flavor, which is perceived as having a darker color and a moderately strong lemongrass flavor.

Meanwhile, other treatment samples were liked very much, indicating the significant difference between Treatments 1, 4, and 5 towards Treatments 2 and 3, respectively. The results also suggest that the calamansi concentrate effect on the product formulation is vital in masking off the odor and flavor of the lemongrass on the most preferred product treatment. Whereas, those product treatments that established a significant difference with Treatment 5 had a lower concentration of calamansi concentrate, thereby exposing the profound odor and flavor of the lemongrass due to the presence of aromatic oil such as citral aroma as the principal constituent (Aragon & Jao-jao, 2023). The citral component is composed of geranial and neral. Geranial has a strong lemon odor, while the neral has a weaker but sweeter odor than the geranial; both are insoluble in water (Tajidin et al., 2012).

3.4 Overall Product Acceptability of the Most Preferred Product Treatment

Table 5. The overall product acceptability of the most preferred product treatment.

N = 200	Yes (n = 195)		No (n=5)		Statistical Analysis
Sex					
Male	83	96.51%	3	3.49%	$\chi^2 = 0.605$, df=1
Female	112	98.25%	2	1.75%	
Age					
18-20	32	100.00%	0	0.00%	$\chi^2 = 14.138^{**}$, df=4, p<.05
21-25	72	100.00%	0	0.00%	
26-30	57	98.28%	1	1.72%	
31-35	22	91.67%	2	8.33%	
36 above	12	85.71%	2	14.29%	
Educational Status					
Elementary Undergraduate	2	100.00%	0	0.00%	$\chi^2 = 10.867$, df=5
Elementary Graduate	6	100.00%	0	0.00%	
High School Undergraduate	12	100.00%	0	0.00%	
High School Graduate	26	100.00%	0	0.00%	
College Undergraduate	111	99.11%	1	0.89%	
College Graduate	38	90.48%	4	9.52%	
Income Level					
No Income	138	100.00%	0	0.00%	$\chi^2 = 21.734^{**}$, df=4, p<.05
<P10,000.00	14	100.00%	0	0.00%	
P10,001-P20,000	8	100.00%	0	0.00%	
P20,001-P30,000	11	91.67%	1	8.33%	
>P30,000.00	24	85.71%	4	14.29%	
Occupation					
Student	112	100.00%	0	0.00%	$\chi^2 = 11.868^{**}$, df=4, p<.05
Teacher	38	90.48%	4	9.52%	
Private Worker	29	96.67%	1	3.33%	
Business Owner	12	100.00%	0	0.00%	
Office Employee	4	100.00%	0	0.00%	
Health-conscious					
Yes	169	97.13%	5	2.87%	$\chi^2 = 0.766$, df=1
No	26	100.00%	0	0.00%	

The most acceptable product formulation (Treatment 5) from the various product treatments tested for the preference ranking test was then subjected to an overall product acceptability test. The same 200 panelists who conducted the preference ranking test were asked about the overall general product acceptability of the most preferred product treatment. Table 5 below summarizes the results.

A total of 195 respondents signified that the most preferred product treatment is generally acceptable (Table 5). Most of the respondents have positive acceptance of the product sample from age 18-30 years old (161), females (112), students (112), and health-conscious (169). The overall product acceptance was significantly associated with age ($\chi^2 = 14.138$, $p < .05$), income level ($\chi^2 = 21.734$, $p < .05$), and occupation ($\chi^2 = 11.868$, $p < .05$) but not with sex, educational status, and health-consciousness. The results indicate that among the demographic factors that show significant differences in terms of the overall product acceptability, age, income level, and occupation status can be considered determinants of the overall market acceptability of the product. Based on the given results, the potential target market of the proposed product offering is the students or the younger population trying to consume products considered a healthier alternative.

3.6 Sensory Evaluation of the Lemongrass Bottled Tea with Competitors

Table 6. Analysis of Variance for the overall product acceptability of lemongrass bottled tea and 3 other competitors.

Source of Variation	Sum of Squares (SSE)	Degrees of Freedom (df)	Mean Square (MSE)	F-value	P-value
Treatments	4.102	3	1.034		
Error	358.2	796	0.450	2.297	.065
Total	362.302	799			

The results of the sensory evaluation of the lemongrass bottled tea considering color, aroma, taste, strength or intensity, and overall product acceptability using ANOVA in comparison with identified competitors are given in Table 6. The ANOVA resulted in an F-value of 2.297 and $p = .065$, which resulted in no significant difference between how the respondents perceived the most preferred product formulation of lemongrass bottled tea and existing competitors in the marketplace. The ANOVA table summary is presented in Table 6.

Table 6 shows no significant differences between the most preferred product formulation of lemongrass bottled tea and three other existing competitors. The main contributor to this result can be attributed to the presence of calamansi concentrate in the product formulation of LGB Tea. Existing competitors offer calamansi based bottled tea. Since the calamansi concentrate in the LGB Tea masks the odor and flavor of the lemon grass, the respondents no longer perceived the presence of such a component in the product sample, leading to no significant difference in result. Furthermore, the distinctive aromatic and essential oils in LGB Tea make it more preferred than its identified competitors since the main ingredient of those products is the calamansi concentrate.

3.7 Market Acceptability

Results showed that 190 respondents were willing to buy the lemongrass bottled tea product (Table 7). Most of the respondents willing to buy were aged 21 to 30 (160), females (110), students (112), and health-conscious (170). The willingness to buy the product was significantly associated with age ($\chi^2 = 29.021$, $p < .05$), income level ($\chi^2 = 44.612$, $p < .05$), and occupation ($\chi^2 = 20.351$, $p < .05$) and health-conscious individuals ($\chi^2 = 20.559$, $p < .05$), but not with age and educational status. The results suggest that the proposed lemon grass-bottled tea will be widely accepted among students and young professionals who are health enthusiasts looking for an alternative ready-to-drink bottled tea that leans towards healthier RTD beverage options.

Possible marketing strategies of Lemon Grass Bottled Tea include promotion of the product during Research and development events such as Techno Exhibits; including the product at catering services during college-wide special events and office meetings; participating in trade fairs such as in Department of Trade and Industry (DTI); serving the product daily in kiosks at school canteens, and advertising the product at the DDOSC website through the Production Services Division. This entails a united effort among crucial offices of the College, e.g., Research and Development Division (RDD) and Production Services Division (PSD).

It is vital to stress the benefits of Lemon Grass Bottled Tea to ensure that the advantages of the proposed RTD product outweigh the cost. This product is distinguished from similar beverages on the market by the presence of

various phytochemicals, or plant compounds, given by three different components. These phytochemicals offer more health advantages than those offered by competing beverages. Phytochemicals extracted from lemongrass tea have been shown to contain anticancer (Dolghi et al., 2021; Trang et al., 2020), anti-inflammatory (Kiani et al., 2022; Sousa et al., 2021), and antioxidant effects (Pan et al., 2022). Additionally, calamansi has Vitamin C and polyphenols that act as antioxidants (Xin et al., 2022).

Table 7. The willingness to buy of LGB Tea's most preferred product treatment.

N = 200	Yes (n = 190)		No (n=10)		Statistical Analysis
Sex					
Male	80	93.02%	6	6.98%	$\chi^2 = 1.241, df=1$
Female	110	96.49%	4	3.51%	
Age					
18-20	32	100.00%	0	0.00%	$\chi^2 = 29.021^*, df=4$
21-25	72	100.00%	0	0.00%	
26-30	56	96.55%	2	3.45%	
31-35	20	83.33%	4	16.67%	
36 above	10	71.43%	4	28.57%	
Educational Status					
Elementary Undergraduate	2	100.00%	0	0.00%	$\chi^2=6.704, df=5$
Elementary Graduate	6	100.00%	0	0.00%	
High School Undergraduate	12	100.00%	0	0.00%	
High School Graduate	26	100.00%	0	0.00%	
College Undergraduate	107	95.54%	5	4.46%	
College Graduate	37	88.10%	5	11.90%	
Income Level					
No Income	138	100.00%	0	0.00%	$\chi^2 = 44.612^*, df=4$
<P10,000.00	14	100.00%	0	0.00%	
P10,001-P20,000	8	100.00%	0	0.00%	
P20,001-P30,000	8	66.67%	4	33.33%	
>P30,000.00	22	78.57%	6	21.43%	
Occupation					
Student	112	100.00%	0	0.00%	$\chi^2 = 20.351^{**}, df=4$
Teacher	35	83.33%	7	16.67%	
Private Worker	27	90.00%	3	10.00%	
Business Owner	12	100.00%	0	0.00%	
Office Employee	4	100.00%	0	0.00%	
Health-conscious					
Yes	170	97.70%	4	2.30%	$\chi^2 = 20.559^{**}, df=1$
No	20	76.92%	6	23.08%	

*p<.05

4.0 Conclusion

Based on the results, it is now concluded that honey and calamansi-flavored lemongrass bottled tea consisting of 66.67% water, 13.33% lemongrass extract, 6.67% honey extract, 6.67% sugar, 6.67% calamansi extract, and 0.1% sodium benzoate is the most preferred product treatment. A total of 195 out of 200, or 97.5% of the respondents, signified that the most preferred product treatment is generally acceptable regarding overall product attributes. Most of the respondents have positive acceptance of the product sample from age 18-30 years old (161), females (112), students (112), and health-conscious (169). The overall product acceptance was significantly associated with age ($\chi^2 = 14.138$, $p < .05$), income level ($\chi^2 = 21.734$, $p < .05$), and occupation ($\chi^2 = 11.868$, $p < .05$) but not with sex, educational status, and health-consciousness. Meanwhile, there were no significant differences between the most preferred product formulation of lemongrass bottled tea and three other existing competitors. Furthermore, results showed that 190 out of 200 or 95% of the respondents signified that they would buy the lemongrass bottled tea product. Most of the respondents willing to buy were aged 21 to 30 (160), females (110), students (112), and health-conscious (170). The willingness to buy the product was significantly associated with age ($\chi^2 = 29.021$, $p < .05$), income level ($\chi^2 = 44.612$, $p < .05$), and occupation ($\chi^2 = 20.351$, $p < .05$) and health-conscious individuals ($\chi^2 = 20.559$, $p < .05$), but not with age and educational status. Lastly, with intensive marketing campaigns and initiatives for the proposed product offering, lemon grass bottled tea can compete with the existing brands that are currently offering ready-to-drink drinks in the beverage industry.

This research study contributes to the existing body of knowledge in food processing and agribusiness. The development of value-added products, such as Lemon Grass Bottled Tea, creates new market opportunities and economic benefits for farmers and producers. Furthermore, understanding consumer demand and market trends for the development of lemongrass bottled tea can guide tanglad farmers and producers in developing strategies to expand market reach and profitability.

The result of this study focuses on the product development and market potential of Lemon Grass Bottled Tea. However, this study recommends areas for future study. First, the nutritional content of the most accepted product formulation is not yet established. The nutritional content of the product is essential as it is one of the requirements needed by the Food and Drug Administration for product labels. In addition, the conduct of the shelf life study of the proposed product is essential to determine the product's viability for human consumption to ensure consumer safety. Further studies such as microbiological assays and chemical analysis are also recommended for future research.

5.0 Contributions of Authors

The following are the contributions of each author, presented as follows:

Jade Mark C. Salubre - Research design, participant selection, data gathering, drafting of manuscript, and data analysis.

Jennifer T. Pelegrino - Data gathering and drafting of the manuscript

Juma P. Wabinga - Data gathering and statistical analysis

Juanita C. Leopoldo - Data gathering and ensuring compliance with research ethics protocols

6.0 Funding

The authors declared that this study was an institutionally funded research project by Davao de Oro State College.

7.0 Conflict of Interests

The authors declared that there is no potential conflict of interest in any form about this study, authorship, and publication of the same.

8.0 Acknowledgment

This research study would only be a successful venture with the support and contributions of significant individuals. First and foremost, the researchers would like to thank the Almighty God for the protection, wisdom, and knowledge He has given them while conducting this research study. The researchers expressed their deepest gratitude to the College President, Dr. Christie Jean V. Ganiera, CESE, who made this academic work possible and has always supported the researchers' career enhancement in research undertakings; and to the Research and Development Division, led by its division director, Mr. Jeson N. Geroche, M.Sc., for their unwavering support and assistance in securing the required resources for the conduct of this project. The researchers would also like to express their most profound appreciation to the panel of examiners, Dr. Ulysses P. Besas, Head, CEDU - University of Southeastern Philippines and Dr. Silverio V. Magallon Jr., Deputy Director for Development and Linkages - University of Southeastern Philippines. Without their technical expertise, this research paper would not have been guided in the right direction toward its successful completion. Special thanks to Dr. Jerald Anthony C. Esteban - the Dean of the Agriculture Department, Mr. Glenn Engalgado, M.Sc and Ms. Jonalyn N. Tordillo, LPT, for allowing the researchers to utilize the Animal Science Laboratory for the product prototyping of Lemon Grass Bottled Tea. Lastly, the researchers would like to express their utmost appreciation to the study's respondents. With their collaboration and active participation, this research endeavor becomes feasible. Their commitment to this project would establish the market acceptability viability of possible commercialization and product launching of Lemon Grass Bottled Tea.

9.0 References

- Aragon, K. P., & Jao-jao, A. S. (2023). Development of Berry-Flavored Lemongrass Herbal Tea. *Mountain Journal of Science and Interdisciplinary Research (formerly Benguet State University Research Journal)*, 83(1), 19-33.
- Asaolu, M. F., Oyeyemi, O. A., & Olanlokun, J. O. (2009). Chemical compositions, phytochemical constituents and in vitro biological activity of various extracts of *Cymbopogon citratus*. *Pakistan Journal of Nutrition*, 8(12), 1920-1922. doi: 10.3923/pjn.2009.1920.1922.
- Ashurst, P. R. (2016). *Chemistry and technology of soft drinks and fruit juices*. John Wiley & Sons.
- Dolghi, A., Buzatu, R., Dobrescu, A., Olaru, F., Popescu, G. A., Marcovici, I., ... & Dehelean, C. A. (2021). Phytochemical analysis and in vitro cytotoxic activity against colorectal adenocarcinoma cells of *Hippophae rhamnoides* L., *Cymbopogon citratus* (DC) Stapf, and *Ocimum basilicum* L. essential oils. *Plants*, 10(12), 2752. doi: 10.3390/plants10122752.
- Ekpenyong, C. E., Akpan, E. E., & Daniel, N. E. (2014). Phytochemical Constituents, Therapeutic Applications and Toxicological Profile of *Cymbopogon citratus* Stapf (DC) Leaf Extract. *Journal of Pharmacognosy and Phytochemistry*, 3(1), 133-141.
- Grumezescu, A., & Holban, A. M. (Eds.). (2019). *Value-Added Ingredients and Enrichments of Beverages: Volume 14: The Science of Beverages*. Academic Press.
- Hutzler, M., Riedl, R., Koob, J., & Jacob, F. (2012). Fermentation and spoilage yeasts and their relevance for the beverage industry-a review. *Brew Sci*, 65, 33-52.
- Kiani, H. S., Ali, A., Zahra, S., Hassan, Z. U., Kubra, K. T., Azam, M., & Zahid, H. F. (2022). Phytochemical composition and pharmacological potential of lemongrass (*cymbopogon*) and impact on gut microbiota. *AppliedChem*, 2(4), 229-246. doi: 10.3390/appliedchem2040016.
- Lawrence, R., Lawrence, K., Srivastava, R., & Gupta, D. (2015). Antioxidant activity of lemongrass essential oil (*Cymbopogon citratus*) grown in North Indian plains. *J Sci Temper*, 4, 23-9.
- Martinez-Velasco, J. D., Filomena-Ambrosio, A., & Garzón-Castro, C. L. (2023). Technological tools for the measurement of sensory characteristics in food: A review. *F1000Research*, 12. doi: 0.12688/f1000research.131914.2.
- Midway, S., Robertson, M., Flinn, S., & Kaller, M. (2020). Comparing multiple comparisons: practical guidance for choosing the best multiple comparisons test. *PeerJ*, 8, e10387. doi: 10.7717/peerj.10387.
- Muala, W. C. B., Desobgo, Z. S. C., & Jong, N. E. (2021). Optimization of extraction conditions of phenolic compounds from *Cymbopogon citratus* and evaluation of phenolics and aroma profiles of extract. *Heliyon*, 7(4). doi: /10.1016/j.heliyon.2021.e06744.
- Mukherjee, S., Gurjar, E. S., Gowda, K. V., GS, N., Shet, S., Mishra, S., & Kumar, S. (2024). Lemongrass: a traditional ethno-medicinal plant of India. doi: 10.5281/zenodo.10725291.
- Nambiar, V. S., & Matela, H. (2012). Potential functions of lemon grass (*Cymbopogon citratus*) in health and disease. *International Journal of Pharmaceutical and Biological Archives*, 3(5), 1035-1043.
- Nanasombat, S., Thonglong, J., & Jitlakha, J. (2015). Formulation and characterization of novel functional beverages with antioxidant and anti-acetylcholinesterase activities. *Functional Foods in Health and Disease*, 5(1), 1-16. doi: 10.31989/ffhd.v5i1.162.
- Naz, R. (2018). Storage in polyethylene terephthalate bottles: changes and shelf life. In *Fruit juices* (pp. 621-635). Academic Press. doi: 10.1016/B978-0-12-802230-6.00031-X.
- Nazir, M., Arif, S., Khan, R. S., Nazir, W., Khalid, N., & Maqsood, S. (2019). Opportunities and challenges for functional and medicinal beverages: Current and future trends. *Trends in Food Science & Technology*, 88, 513-526. doi: 10.1016/j.tifs.2019.04.011.
- Nillos, J. R., Ybarzabal, E. R., Gico, E. T., Cangrejo, B. C., & Villalobos, M. C. (2017). Commercialization of lemongrass (*Cymbopogon citratus* Stapf.) Ready-to-drink beverage product (kalamansi-ginger flavor). *Patubas*, 12(1), 1-31.
- Olorunnisola, S. K., Hammed, A. M., & Simsek, S. (2014). Biological properties of lemongrass: an overview. *International Food Research Journal*, 21(2).
- Pan, D., Machado, L., Bica, C. G., Machado, A. K., Steffani, J. A., & Cadoná, F. C. (2022). In vitro evaluation of antioxidant and anticancer activity of lemongrass (*Cymbopogon citratus* (DC) Stapf). *Nutrition and Cancer*, 74(4), 1474-1488. doi: 10.1080/01635581.2021.1952456.

- Piorkowski, D. T., & McClements, D. J. (2014). Beverage emulsions: Recent developments in formulation, production, and applications. *Food hydrocolloids*, 42, 5-41. doi: 10.1016/j.foodhyd.2013.07.009.
- Reeve, E., Thow, A. M., Bell, C., Engelhardt, K., Gamolo-Naliponguit, E. C., Go, J. J., & Sacks, G. (2018). Implementation lessons for school food policies and marketing restrictions in the Philippines: a qualitative policy analysis. *Globalization and health*, 14, 1-14. doi: 10.1186/s12992-017-0320-y.
- Rocha, M. A. M., Coimbra, M. A., & Nunes, C. (2017). Applications of chitosan and their derivatives in beverages: A critical review. *Current Opinion in Food Science*, 15, 61-69. doi: 10.1016/j.cofs.2017.06.008.
- Sambo, M., Jakwa, A. G., & Garba, I. H. (2024). Antioxidant potential, phytochemicals, minerals and amino acids content of lemongrass (*Cymbopogon citratus*). *Journal of Pharmacognosy and Phytochemistry*, 13(3), 103-108. doi: 10.22271/phyto.2024.v13.i3b.14950.
- Shachman, M. (2004). *The soft drinks companion: a technical handbook for the beverage industry*. CRC press. doi: 10.1201/9780203492123.
- Sharma, S., Habib, S., Sahu, D., & Gupta, J. (2021). Chemical properties and therapeutic potential of citral, a monoterpene isolated from lemongrass. *Medicinal Chemistry*, 17(1), 2-12. doi: 10.2174/1573406416666191227111106.
- Sousa, R., Figueirinha, A., Batista, M. T., & Pina, M. E. (2021). Formulation effects in the antioxidant activity of extract from the leaves of *cymbopogon citratus* (Dc) stapf. *Molecules*, 26(15), 4518. doi: 10.3390/molecules26154518.
- Spence, C., & Levitan, C. A. (2022). Exploring the links between colours and tastes/flavours. *Journal of Perceptual Imaging*, 5, 1-16. doi: 10.2352/J.Percept.Imaging.2022.5.000408.
- Non-Alcoholic Drinks - Worldwide | Statista Market Forecast. (2020). Statista. <https://www.statista.com/outlook/cmo/non-alcoholic-drinks/worldwide>.
- Tajidin, N. E., Ahmad, S. H., Rosenani, A. B., Azimah, H., & Munirah, M. (2012). Chemical composition and citral content in lemongrass (*Cymbopogon citratus*) essential oil at three maturity stages.
- Tireki, S. (2021). A review on packed non-alcoholic beverages: Ingredients, production, trends and future opportunities for functional product development. *Trends in Food Science & Technology*, 112, 442-454. doi: 10.1016/j.tifs.2021.03.058.
- Trang, D. T., Hoang, T. K. V., Nguyen, T. T. M., Van Cuong, P., Dang, N. H., Dang, H. D., ... & Dat, N. T. (2020). Essential oils of lemongrass (*Cymbopogon citratus* Stapf) induces apoptosis and cell cycle arrest in A549 lung cancer cells. *BioMed Research International*, 2020(1), 5924856. doi: 10.1155/2020/5924856.
- Ullah, M. A., Rasheed, M., & Hyder, S. I. (2020). Medicinal plant lemon grass (*Cymbopogon citratus*) growth under salinity and sodicity. *The Korean Journal of Food & Health Convergence*, 6(1), 9-15. doi: 10.13106/kjfhc.2020.vol6.no1.9.
- Wierenga, B. (1983). Model and measurement methodology for the analysis of consumer choice of food products 1. *Journal of Food Quality*, 6(2), 119-137. doi: 10.1111/j.1745-4557.1983.tb00761.x.
- Wifek, M., Saeed, A., Rehman, R., & Nisar, S. (2016). Lemongrass: a review on its botany, properties, applications and active components. *International Journal of Chemical and Biochemical Sciences*, 9(1), 79-84.
- Xin, Y. H., Wu, Y. X., Qiao, B., Su, L., Xie, S. Q., & Ling, P. (2022). Evaluation on the phenotypic diversity of Calamansi (*Citrus microcarpa*) germplasm in Hainan island. *Scientific Reports*, 12(1), 371. doi: 10.1038/s41598-021-03775-x.

A Historical Review of the Molecular Phylogeny of the Philippine *Nepenthes* L. (Nepenthaceae) with Notes for Unsourced Taxa

Samuel C. Brillo^{*1,2}, Julius John D. Salamanes¹, Eleanor S. Austria¹

¹Biology Department, College of Science, Adamson University, Metro Manila, Philippines

²Biology Department, College of Science, Pamantasan ng Lungsod ng Maynila, Metro Manila, Philippines

*Corresponding Author Email: scbrillo@plm.edu.ph, sambrillo24@gmail.com

Date received: June 20, 2024

Date revised: July 4, 2024

Date accepted: July 7, 2024

Originality: 92%

Grammarly Score: 99%

Similarity: 8%

Recommended citation:

Brillo, S., Salamanes, J.J., Austria, E. (2024). A historical review of the molecular phylogeny of the Philippine *Nepenthes* L. (Nepenthaceae) with notes for unsampled taxa. *Journal of Interdisciplinary Perspectives*, 2(8), 422-440. <https://doi.org/10.69569/jip.2024.0298>

Abstract. Despite advances in molecular phylogenetics, the genus *Nepenthes* L., comprising about 180 species, presents a challenging phylogenetic puzzle due to morphological convergence. The Philippines (PH), a hotspot for pitcher plant diversity with 61 species, faces unclear evolutionary relationships due to insufficient taxon sampling. This historical review compiled the phylogenetic studies concerning Philippine *Nepenthes* from various molecular studies using nuclear or plastid markers. Here, we identified that the molecular phylogeny constructed from the angiosperms353 probe set used by Mullins et al. (2020) has given the most comprehensive results, with most samples from the Philippines and a total of 35 species compared to previously conducted phylogenies since 2000. It was revealed that these species form a large Philippine clade, split into three groups: Mindanao, Palawan, and Graciliflora, with other PH taxa belonging to the Insignes Clade. This study noted the possible clades of 26 unsampled PH taxa based on morphology and geography. Lastly, we created a distribution map of Philippine *Nepenthes* to support these placements. This study will help future research determine the phylogeny of *Nepenthes* in the Philippines, understand their evolutionary relationships with other paleotropical species, and assist policymakers in conserving these species from extinction.

Keywords: *Nepenthes*; Pitcher plant; Angiosperms353; Philippine endemic; Phylogenetic relationship; Molecular phylogeny.

1.0 Introduction

Nepenthes L. (Linnaeus, 1737) is the sole genus within the family Nepenthaceae, the largest carnivorous plant family of the eudicot order Caryophyllales (McPherson, 2009a; McPherson, 2009b; Cheek and Jebb, 2013a). *Nepenthes* has an exceptional and remarkable biology compared to its carnivorous relatives within the Caryophyllales (McPherson, 2009a; McPherson, 2009b). Except for a few epiphytes, all *Nepenthes* species are evergreen climbers or scrambling shrubs. They can be found from sea level up to 3000–4000 m in elevation, mostly in humid montane rainforests or open swamp areas where the canopy is generally thin and the soil is sparse. One of the significant factors in the evolution of the genus is the adaptation of the species to different soil types (serpentine, granite, limestone, or sandstone) with low nutrient levels (Cheek et al., 2019).

Regarding pitchers, certain species evolved and mutated into complex morphological varieties due to differences in ecological adaptations for acquiring prey from the environment. Recently, researchers classified pitchers based on their functions and prey-specific trapping syndromes to collect nutrients from distinct species (Cheek et al., 2019). In addition to this, factors such as the location of species at elevations above sea level and mountain

altitudes, the type of substrate, such as *Nepenthes*, a genus known for its high-level adaptive radiation, and tight isolation may also play a significant role (Thorogood et al., 2018; Murphy et al., 2020).

Researchers thought that abiotic environmental variables, sympatric speciation, and natural hybridization all contributed to the emergence of new species. *Nepenthes* is distributed in paleotropics, with a global count of 181 species as of 2020 (King & Cheek, 2020; Murphy et al., 2020). Southeast Asian rainforests are home to most of them, with the Philippines alone recording 61 species (Table 1). *Nepenthes* primarily inhabit ultramafic mountain ranges and submontane forests in the Philippines, exhibiting similarities in pitcher morphology with other nearby species. According to studies by Mansell and Suarez (2016), Cheek and Jebb (2014), Gronemeyer et al. (2016), and Mansell and Jebb (2014), *Nepenthes* predominates in ultramafic mountain ranges and submontane forests in the Philippines. However, phylogenetic relationships and species delimitation within the Nepenthaceae need to be clarified, particularly in Philippine taxa. Previous studies typically used a small number of samples and loci.

The systematic constraints within the family Nepenthaceae include the following: (1) taxonomic position, (2) subgeneric or infrageneric classification within the family, and (3) species delimitation.

Based on taxonomy, the Nepenthaceae, Ancistrocladaceae, Dioncophyllaceae, Droseraceae, and Drosophyllaceae all belong to the Caryophyllales, and they all have different types of carnivorous syndromes (Heubl et al., 2006; Walker et al., 2018). Researchers have reliably restored only the sister relationship between Ancistrocladaceae and Dioncophyllaceae, albeit with varying degrees of success among these five families. Heubl et al. (2006), Meimberg et al. (2000), Soltis et al. (2011), and Walker et al. (2018) identify this combined clade as sister to the rest of the Caryophyllales and the carnivorous clade as sister to the Frankeniaceae, Tamaricaceae, Plumbaginaceae, and Polygonaceae clades. The unique characteristics of modern *Nepenthes*, like strict dioecious reproduction and carnivorous pitchers, cannot be traced back to a missing link in the tree of life (Meimberg et al., 2001; Meimberg & Heubl, 2006; Clarke et al., 2018). Even *Nepenthes*' carnivorous relatives, *Drosera*, *Dionaea*, *Aldrovanda*, and *Drosophyllum*, lack those traits (Heubl et al., 2006). The absence of significant variation or primitive *Nepenthes* forms implies that all extant species may have radiated from a single close ancestor with all modern traits.

The second constraint would be the designation of subgeneric or infrageneric classification. Taxonomists have attempted to classify *Nepenthes* species according to their physical characteristics, particularly their pitchers, and their geographic distribution within the paleotropical region. They did this to figure out how the species evolved (Danser, 1928; Cheek and Jebb, 2013h; Cheek and Jebb, 2014; Cheek and Jebb, 2015; Cheek and Jebb, 2016a; Cheek and Jebb, 2016b; Clarke et al., 2018). Danser (1928) proposed six infra-generic groups. These are *Insignes*, *Montanae*, *Nobiles*, *Regiae*, *Urceolatae*, and *Vulgatae*, though he admitted that none of these reflected evolutionary links. Considering modern molecular discoveries and taxonomic work, there have been two primary competing methods for updating this classification: Cheek and Jebb (2013h; 2014; 2015; 2016a; 2017b) and Clarke et al. (2018). While reordering several species, Cheek and Jebb (2013h; 2014; 2015; 2016a; 2017b) added five new sections to Danser's (1928) classification: *Alatae*, *Micramphorae*, *Pyrophytae*, *Tentaculatae*, and *Villosae*, as well as the informal *Danseri* and subsection *Poculae-ovis*. Clarke et al. (2018) acknowledge only three sections, excluding Danser's *Nobiles*. *Montanae* and *Regiae* from Danser (1928) are significant groups for Cheek and Jebb (2013h; 2014; 2015; 2016a; 2017b) and Clarke et al. (2018), albeit their interpretations disagree. Clarke et al. (2018) placed all taxa from Peninsula Malaysia and Indochina (including some Bornean species) in an enlarged sect. *Pyrophytae*. Cheek and Jebb (2013h; 2014; 2015; 2016a; 2017b) created the *Pyrophytae* group for Indochinese species adapted to fire-prone and dry environments. Clarke et al. (2018b) need to recognize the sects *Alatae* and *Micramphorae* of Cheek and Jebb (2013h; 2014; 2015; 2016a; 2017b), which contain various Philippine taxa from Mindanao Island. However, both recognize small sects, the *Insignes* and *Tentaculatae*, which cross Wallace's line. The minor *Urceolatae* group, which includes other common, widespread lowland species, has assigned several species, including *Nepenthes gracilis*, *Nepenthes mirabilis*, and *Nepenthes papuana*. *Nepenthes campanulata*, *Nepenthes mapuluensis*, and *Nepenthes northiana*, the limestone species, create gray areas, defying taxonomic classification by any authority.

Species delimitation is also a controversial subject. These questions are made more complicated by the fact that there are a lot of natural hybrids, there don't seem to be any natural barriers to reproduction between species, there is a lot of infraspecific morphological diversity, and taxonomists rely on pitchers. For example, the recent separation of *Nepenthes orbiculata*, *Nepenthes parvula*, *Nepenthes rowaniae*, and *Nepenthes tenax* from *Nepenthes*

mirabilis makes taxonomists wonder how the remaining species fit together (Catalano, 2018; Clarke and Kruger, 2005, 2006; Wilson and Venter, 2016). Previous molecular investigations have seldom sequenced many individuals (although see Kurata et al. (2008)). So, it's unknown if huge geographical populations of ubiquitous species form clades or how much gene flow connects them. Many recently described species, particularly from the Philippines and Indochina, are synonyms of other taxa, based on Clarke et al. (2018).

Molecular approaches have overcome challenges in the taxonomy and systematics of *Nepenthes*. However, using more than one or two markers results in low branch support needs for more currently known species (Murphy et al., 2020) and is continuously growing in number. On the other hand, the formation of three separate evolutionary lineages from the Philippines and two from Borneo and Sulawesi suggests that the Philippines, together with Sulawesi, is an essential center of variety and evolution (Meimberg et al., 2001; Meimberg and Heubl, 2006). Despite this, phylogenetic studies underrepresent the Philippine taxa, with the discovery of 43 new species in the last two decades. This accounts for about 70% of all Philippine *Nepenthes* today (see Table 1). Furthermore, some populations of the Philippine *N. mirabilis* exhibit variable morphologies, indicating the presence of natural hybrids, or possibly, new species. Once proven by molecular methods, the existence of such hybrids may indicate new species. However, some Philippine *Nepenthes* are considered extinct in the wild, while others face extinction because of anthropogenic activities. These demonstrate that the Philippine taxa are an essential part of the Nepenthaceae systematics.

This paper reviewed the historical advancements in the molecular phylogeny of Philippine *Nepenthes* taxa by conducting a highly sensitive literature search, selection, and analysis, addressing significant developments and gaps in the phylogeny of Nepenthaceae with a focus on the Philippine *Nepenthes* taxa, identifying the most comprehensive phylogenetic study to date, and providing notes on the possible phylogenetic positions of unsampled Philippine *Nepenthes* species based on morphological and geographical similarities to nested species from the most comprehensive study identified in this review. This paper also provided an updated distribution map for Philippine *Nepenthes* in relation to their nested clades based on the most comprehensive phylogenetic study to date.

2.0 Methodology

2.1 Literature Search

Electronic literature searches were conducted in the following journals and taxonomic databases relevant to plant systematics: For our research, we utilized Co's Digital Flora of the Philippines, Philippine Journal of Systematic Biology, Phytotaxa, PeerJ, Carnivorous Plants Newsletter, Willdenowia, Blumea, Nordic Journal of Biology, Planta Carnivora, Bulletin du Jardin Botanique du Buitenzorg, Plants, Gardens' Bulletin Singapore, and Molecular Phylogenetics and Evolution. The researchers also utilized Google Scholar, ScienceDirect, and Scopus.

"*Nepenthes*," "Nepenthaceae," "Phylogeny," "Phylogenetic," and derivatives of these terms were among the search terms used. This study only included phylogenetic studies that used molecular methods and included many representative *Nepenthes* species from across the paleotropical region and at least one Philippine species.

2.2 Selection Criteria

This study used secondary data from selected molecular phylogeny studies of Nepenthaceae. The following are important details to note: (1) nested sampled species within clades formed using nuclear and/or plastid markers; (2) morphological characteristics; and (3) geographical distribution. The data identified breakthroughs and systematic gaps. Furthermore, the most comprehensive phylogenetic study of Nepenthaceae to date was identified in terms of (1) the greatest number of species sampled, as well as multiple individuals of several widespread taxa; (2) the most advanced and efficient DNA sequencing method used; (3) less gene conflict encountered; and (4) most findings confirmed and resolved.

All six studies (Mullins, 2000; Meimberg et al., 2001; Meimberg & Heubl, 2006; Golos, 2012; Alamsyah & Ito, 2013; Murphy et al., 2020) met the selection criteria. This study also involved retrieving published descriptions of *Nepenthes* species. We retrieved only Philippine taxa for this study. We extracted and analyzed data from these articles.

2.3 Data Extraction and Analysis

This study used secondary data from selected molecular phylogeny studies of Nepenthaceae. The following are important details to note: (1) nested sampled species within clades formed using nuclear and/or plastid markers; (2) morphological characteristics; and (3) geographical distribution. The data identified major breakthroughs and systematic gaps. Furthermore, the most comprehensive phylogenetic study of Nepenthaceae to date was identified in terms of: (1) the greatest number of species sampled, as well as multiple individuals of several widespread taxa; (2) the most advanced and efficient DNA sequencing method used; (3) less gene conflict encountered; and (4) most findings confirmed and resolved.

Sets of taxonomic information from published descriptions were listed in a table to create a checklist of all Philippine *Nepenthes* species, including taxonomic author(s), year of publication, morphology, geographical distribution data, conservation status, and notes on diagnostic characters with an emphasis on possible speciation. The validity of each species' taxonomic status and information was confirmed using ICBN nomenclature codes and taxonomic database systems. The checklist was used to double-check the Philippine species used in selected molecular phylogenetic studies of Nepenthaceae and to update the geographical distribution map of Philippine *Nepenthes* species. Minor limitations on journals regarding amended species types, natural hybrids, or section regroupings related to Philippine taxa were considered, as these works of literature may be helpful in comparing taxonomic information professed by authors. However, these will not be discussed in depth in this review.

3.0 Results and Discussion

3.1 Geographical Distribution and Notes on Morphology of 61 Philippine *Nepenthes* Species

Currently, there are 181 species of *Nepenthes* globally (King & Cheek, 2020). Reports indicate the occurrence of 61 species of *Nepenthes* in the Philippines (Pelser et al., 2024). Fifty-nine (59) of these are endemic to the Philippines, while the remaining two (2) are native or indigenous (see Table 1).

Table 1. Checklist of *Nepenthes* species of the Philippines.¹

Species	Geographical Distribution	Notes on Morphology
1. <i>Nepenthes abalata</i> Jebb & Cheek	(VISAYAS) Malalison Island, Panay, Antique (PALAWAN) Culion Island	Related to <i>N. philippinensis</i> Macfarl. but with similarities to grassland species of Indochina; differs from <i>N. alata</i> in that it flowers as a terrestrial subshrub, not known to climb, growing in open grassy slopes near sea level, absent, petiole absent, blade tapers to stem, pitcher lid nectar glands dimorphic, midband with large perithecod glands.
2. <i>Nepenthes abgracilis</i> Jebb & Cheek	(MINDANAO) Mt. Legaspi, Surigao	Terrestrial shrub or climber with glabrous stems, leaves, and pitchers (except under peristome); leaves with no distinct petiole (sessile); Upper pitchers are subcylindric, with a base width of about 16 cm.
3. <i>Nepenthes aenigma</i> Nuytemans, W.Suarez & Calaramo	(LUZON) Ilocos Norte	Morphologically, it falls within a Philippine group revolving around <i>N. ventricosa</i> , which in turn is included in Danser's rather loosely defined Insignes group but is unusual in having only 3 to 4 longitudinal leaf nerves and consistently branched fringed elements; not known to produce lower pitchers.
4. <i>Nepenthes alata</i> Blanco	(LUZON, Northeastern, Central Cordillera) Burgos, Ilocos Norte; Benguet; Bontoc; Nueva Vizcaya; Mountain Province; Ifugao; Mt. Pinatubo, Zambales; Sierra Madre, San Luis, Quezon (PALAWAN) Silanga	The pitcher appeared stoutly subcylindric, with a modest contraction at the waist. Fringed wings that run from the pitcher's base to the tip. Even if reduced elsewhere, fringes are always present below the peristome; Small white stellate hairs, 0.2 mm wide, are densely covered and almost touch one another; Small white stellate hairs, 0.2 mm wide, are densely covered and almost touch one another; Young leaves and stems are densely covered with fine white hairs, which often obscure the skin. Bracts typically present, partial-peduncles 1-flowered.
5. <i>Nepenthes alfredoi</i> V.B.Amoroso & Lagunday	(MINDANAO) Mt. Hamiguitan Range Wildlife Sanctuary Expansion Site, Brgy Luzon, Davao Oriental.	It differs from <i>N. mindanaensis</i> in having an upper pitcher with fringed wings reaching for some distance along the tendril. The upper pitcher has well-expressed fringed wings extending for some distance along the tendril and a lengthier habit.
6. <i>Nepenthes alzapana</i> Jebb & Cheek	(LUZON) Mt. Alzapana, Tayabas Province	<i>N. alzapana</i> has oblong, glabrous, ligulate, sessile leaf blades with 5–7 pairs of relatively uniformly spaced longitudinal nerves.
7. <i>Nepenthes argentii</i> Jebb & Cheek	(VISAYAS) Mt. Guiting-guiting, above Magdiwang on ridge leading to Mayo's Peak, Sibuyan.	The absence of climbing habit and the subpetiolate, oblanceolate leaves with truncate apices distinguish <i>N. argentii</i> from <i>N. bellii</i> . This species is unique in that it possesses a subterranean rhizome that is long and vertical. The stem is slowly growing higher, keeping up with the buildup of organic debris on the surface, which continues to bury the lower half of the stem.
8. <i>Nepenthes armin</i> Jebb & Cheek	(VISAYAS) Magdiwang, Sibuyan	<i>N. armin</i> varies from <i>N. graciliflora</i> in that the pitchers are as wide at the apex as they are at the base (not the broadest at the base); the convex lid appendage is absent (not present); androecium: tepal length ≤ 1:1 (not 2:1). Male pedicels are 3.5–4.5 mm long, with angular stems and no convex basal appendage on the lid.
9. <i>Nepenthes attenboroughii</i> A.S.Rob., S.McPherson & V.B.Heinrich	(PALAWAN) Mt. Victoria	Habit resembles <i>N. rajah</i> and <i>N. mira</i> ; sub petiolate blade oblong to elliptic, obtuse, occasionally blunt, short-narrowing base never very robust spirally, leaves modest in size, although it varies substantially from it.
10. <i>Nepenthes barcelonae</i> Tandang & Cheek	(LUZON) Sierra Madre Mountain Range, Aurora	The inset mouth and dichromic upper pitchers (first-produced pitchers red, later-produced pitchers green) that are also

11.	<i>Nepenthes bellii</i> Kondo	(MINDANAO) Surigao del Norte; Surigao Del Sur; DINAGAT
12.	<i>Nepenthes burkei</i> Hort.Veitch ex Mast.	(VISAYAS) Mt. Halcon, Mindoro Oriental; Mt. Madia-as, Panay, Antique
13.	<i>Nepenthes cabanae</i> Lagunday & V.B.Amoroso	(MINDANAO) Pantaron Mountain Range, Mt. Malimumu, San Fernando, Bukidnon.
14.	<i>Nepenthes campanulata</i> Sh. Kurata ^N	(PALAWAN) Saint Paul Limestone Formation
15.	<i>Nepenthes candalaga</i> Lagunday & Amoroso	(MINDANAO) Davao de Oro
16.	<i>Nepenthes ceciliae</i> Gronem., Coritico, Micheler, Marwinski, Acil & V.B.Amoroso	(MINDANAO), Mt. Kiamo, trail from Brgy. Kibalang, Malaybalay City, Bukidnon
17.	<i>Nepenthes cid</i> Jebb & Cheek	(MINDANAO) Dalvangan, Bukidnon
18.	<i>Nepenthes copelandii</i> Merr. ex Macfarl.	(MINDANAO) Mt. Apo, Davao del Sur; Camiguin
19.	<i>Nepenthes cornuta</i> Marwinski, Coritico, Wistuba, Micheler, Gronem., Gieray & V.B.Amoroso	(MINDANAO) Pantaron Mountain Range, Brgy. St. Peter, Malaybalay City, Bukidnon.
20.	<i>Nepenthes deaniana</i> Macfarl.	(PALAWAN) Mt. Pulgar
21.	<i>Nepenthes erucoides</i> A.S.Rob. & S.G.Zamudio	(MINDANAO) Mt. Redondo, Dinagat
22.	<i>Nepenthes extincta</i> Jebb & Cheek	(MINDANAO) boundary between Surigao del Norte and Surigao del Sure.
23.	<i>Nepenthes gantunganensis</i> S.McPherson, Cervancia, Chi.C.Lee, Jaunzens, Mey & A.S.Rob.	(PALAWAN) Mt. Gantung
24.	<i>Nepenthes graciliflora</i> Elmer	(VISAYAS) Mt. Giting-giting, Sibuyan (LUZON) Mt. Makiling, Laguna; Sorsogon; Zambales; Quezon
25.	<i>Nepenthes hamiguitanensis</i> Gronem., Wistuba, V.B.Heinrich, S.McPherson, Mey & V.B.Amoroso	(MINDANAO) Mt. Hamiguitan, Davao Oriental
26.	<i>Nepenthes justinae</i> Gronem., Wistuba, Mey & V.B.Amoroso	(MINDANAO) Mt. Hamiguitan, Davao Oriental

dimorphic distinguish *N. barcelonae* as part of species within sect. *Insignes*. The primary upper pitchers (primary upper pitchers) are red, larger, stouter, and have an uncoiled long tendril. In contrast, the secondary upper pitchers (secondary upper pitchers) are green, smaller, slenderer, and have a coiled tendril.

N. bellii is closely related to *N. merrilliana* and *N. surigaensis* which share a similar morphology of the pitchers and laminae and a reddish coloration of the top leaves. The inferior pitcher of *N. bellii* is ovate ellipsoid in shape and ventricose in the middle. Compared to *N. merrilliana*, the plant body is substantially smaller.

N. ventricosa is a closely related to *N. burkei* having large, flaring peristomes on waxy pitcher bodies, just like the rest of the family. *N. cabanae* belongs to Danser's *Insignes* group, characterized by a lack of petiole, broadly subcylindrical pitchers, broad peristomes, lids with no appendages, and transversely elliptic nectar glands. It is most closely related to *N. surigaensis* also found in this section. The lid is quite small in some species with extremely infundibuliform pitchers, such as *N. dubia*, *N. cymae*, and *N. inermis*, and the pitcher is laterally flattened along its length before opening. The lid of *N. campanulata*, is tiny and elliptic. As a result, the mouths of these pitchers must extend significantly more than is typical in the genus after opening. They are like *N. reinwardtiana* pitchers in this regard, which have a broad infundibuliform pitcher with a wide mouth, but a short lid and a severely reduced peristome. The pitchers are not divided into upper and lower pitchers.

N. candalaga resembles *N. justinae* but can be easily distinguished by its lamina with 2–3 longitudinal nerves, orbicular lid, non-bifid lid spur tip, triangular lid appendage, short banner-shaped trap wings, and absence of an upper pitcher rim.

N. ceciliae resembles *N. alata*, *N. copelandii*, and *N. micramphora* the most superficially, and appears to be related to this group of related Philippine-endemic species. The infundibular upper pitchers of *N. ceciliae* are similar to those of *N. copelandii*, but they differ in relative proportions and overall size.

Leaf blade shape widest in the middle, upper pitchers broadest at base and apex, peristome width longer, thinly bordered lid nectar glands, and entire spur distinguish *N. cid* from *N. micramphora*.

Winged petioles, lower lids with basal ridges on the lower surface (often elaborated into appendages), and upper pitchers that are usually broadest near the base are all morphological characters that *N. copelandii* shares with the *N. alata* group.

This species is closely related to the Mindanao species *N. ceciliae* and *N. copelandii*. All three are members of the "*N. alata* group" which is much larger.

The non-climbing habit, glabrous stems that spread by shoots, much more minor pitchers, relatively narrower peristomes, and one-flowered pedicels distinguish this species from the Philippine (Palawan) representatives (*N. mantalingajanensis* and *N. mira*).

The species has an overall plant form like *N. mantalingajanensis* (a member of Palawan Clade) but differs in such a way that it has indumentum that is long, dense, rufous hairs, produces both upper and lower pitchers, pitcher shape urceolate to sub-campanulate, finer peristome with small teeth through the inner margin, some partial peduncles and the rachis of male inflorescences produce very large bracts 8–15 mm long, and seeds lacking well-developed filaments

It is most likely confused with *N. mindanaensis*; both have robust, ovoid-cylindric pitchers that emerge from thickly leathery blades with longitudinal nerves that emerge from the blade's base. The blade is not decurrent to the petiole in both species, and the petiole has involute wings, making it appear cylindric.

The lower pitchers are entirely ovate or urceolate, and never completely red or purple. Upper pitchers, which are either completely infundibular or partially cylindrical, are very common. The apex is acute or rounded, the base is attenuate or obtuse, and two or three-thirds of its circumference clasp the stem. The inflorescence is usually made up entirely of 1-flowered pedicels, but 1- and 2-flowered pedicels are also common. The stem can grow up to 3.5 meters long and is commonly used for scrambling or climbing. The indumentum is a collection of simple, densely arranged, caducous reddish-copper hairs found on the lower part of tendrils and the margins of the lamina, with the hairs transforming silver as they age.

Unlike *N. alata*, it has a ventricose base that is abruptly constricted above to a narrower subcylindric upper part; fringed wings are present only on the basal part; upper pitchers are reduced to ribs. Subglabrous, stellate hairs absent, scattered red, bun-like glands 0.05 mm diam, and very sparse simple hairs absent except for the bun-like glands

N. hamiguitanensis was compared to *N. micramphora*, *N. mindanaensis*, and *N. peltata*, which the authors classified as "closely related species." This plant was once thought to be a natural hybrid between *N. micramphora* and *N. peltata*, but it is a hybridogenic species. It produces squat upper pitchers with pigmentation ranging from red speckled to yellow all over. In addition, unlike *N. peltata*, *N. hamiguitanensis* forms upper pitchers and a climbing stem with relative ease.

N. justinae differs from *N. mindanaensis* by having lower pitchers that are bulbous in the lower two-thirds and slightly infundibulate in the upper one-third; upper pitchers that are strongly dimorphic;

27.	<i>Nepenthes kampilili</i> Lagunday & Amoroso	(MINDANAO) Davao de Oro
28.	<i>Nepenthes kitanglad</i> Jebb & Cheek	(MINDANAO) Mt. Kitanglad, Bukidnon
29.	<i>Nepenthes leonardoi</i> S.McPherson, Bourke, Cervancia, Jaunzems & A.S.Rob.	(PALAWAN) Narra, summit of Schom-carp Peak
30.	<i>Nepenthes leyte</i> Jebb & Cheek	(VISAYAS) Mt. Lobi, Leyte
31.	<i>Nepenthes malimumuensis</i> Lagunday, Acma, Cabana, Sabas & V.B.Amoroso	(MINDANAO) Mt. Malimumu, San Fernando, Pantaron Range, Bukidnon
32.	<i>Nepenthes manobo</i> Lagunday, Acma, Cabana, Sabas & V.B.Amoroso	(MINDANAO) Mt. Malimumu, San Fernando, Pantaron Range, Bukidnon
33.	<i>Nepenthes mantalingajanensis</i> Nerz & Wistuba	(PALAWAN) Mt. Mantalingajan
34.	<i>Nepenthes maximoides</i> Cheek	(LUZON) Mt. Banahaw, Quezon
35.	<i>Nepenthes merrilliana</i> Macfarl.	(MINDANAO) Mt. Urdaneta, Agusan del Norte, Surigao. (DINAGAT)
36.	<i>Nepenthes micramphora</i> V.B.Heinrich, S.McPherson, Gronem. & V.B.Amoroso	(MINDANAO) Mt. Hamiguitan, Davao Oriental
37.	<i>Nepenthes mindanaensis</i> Sh.Kurata, J.	(MINDANAO) Surigao del Sur
38.	<i>Nepenthes mira</i> Jebb & Cheek	(PALAWAN) Cleopatra's Needle
39.	<i>Nepenthes mirabilis</i> (Lour.) Rafarin ^N	(MINDANAO) Camp Keithley, Lanao del Sur, Zamboanga; Surigao
40.	<i>Nepenthes nebularium</i> G.Mansell & W.Suarez	(MINDANAO) Mt. Mayo, Davao Oriental
41.	<i>Nepenthes negros</i> Jebb & Cheek	(VISAYAS) Biliran, Negros
42.	<i>Nepenthes palawanensis</i> S.McPherson, Cervancia, Chi.C.Lee, Jaunzems, Mey & A.S.Rob.	(PALAWAN) Sultan Peak, Narra
43.	<i>Nepenthes pantaronensis</i> Gieray, Gronem., Wistuba, Marwinski, Micheler, Coritico & V.B.Amoroso	(MINDANAO) Pantaron Mountain Range, Bukidnon

pitcher openings that are strongly oblique in the lower pitcher; monomorphic nectar glands; and upper pitchers that have an appendage.

N. kampilili differs from *N. peltata* by having tendrils that are apically attached to the leaf, densely pubescent ground pitchers and pitcher lid, and occasionally two pitcher spurs arising from the posterior midsection of the peristome neck. In contrast, *N. peltata* features peltate tendril-leaf attachment, glabrous ground pitchers and pitcher lid, and a single unbranched pitcher spur.

It differs from *N. saranganiensis* in having angled (rather than winged) stems, lower and upper pitchers that are strongly dimorphic (rather than subdimorphic), being a climbing epiphyte of forest (rather than a terrestrial shrub of open areas), and having a strongly concave pitcher mouth with a long neck (rather than having a pitcher mouth that is flat or only slightly concave and lacking a neck). Upper pitcher has a lid that is about as long as the mouth; the mouth is highly concave; a column is present; and the lid base is cordate.

It is related to several other Palawan endemics, including *N. deaniana*, *N. gantungensis*, and *N. mira*. This species' traps stand at least 24 cm tall. Some specimens are known to produce upper pitchers that are incredibly dark, almost black.

Except in the hairy axils, the stems of *N. alata* are glabrous (not densely white hairy); upper pitchers lack fringed wings (versus with fringed wings); nectar glands on lower surface of lid dimorphic, concentrated around margin and appendage (not monomorphic, uniformly dense and distributed); Largest pitchers are 12 cm long; the peristome is 2–3 mm wide, narrowly cylindrical, with no visible teeth (unless dissected), and the outer edge is not lobed.

N. malimumuensis is distinct from *N. sumagaya* in having upper pitcher wings that are reduced to ribs or not visible; having four to five nerves on either side of the midrib; lid appendage is reduced to a keel, and lid appendage is reduced to a keel.

It is distinct from *N. surigaensis* in having sessile leaves clasping half of the stem diameter with three nerves on either side of the midrib; lower pitcher bulbous to ovate bottom half, cylindrical towards the opening; upper pitchers with a distinct hip; lid shape orbicular to ovate; peristome inner margin with short teeth-like projections.

The size, shape, and lack of indumentum on the pitchers distinguish it from *N. mira*, as does the operculum that is as wide as the mouth and the extreme rarity (possibly total absence) of upper pitchers (both lower and upper pitchers are produced at the same time in mature plants of *N. mira*).

Upper pitchers narrowly infundibulate, widest in the distal half at the peristome (not ovoid-cylindric, widest in the proximal half), peristome broad, flattened, and lobed on the outer edge (not narrowly cylindrical and entire on the outer edge), and lid with asymmetrically hooked basal appendage and filiform apical appendage (not ovoid-cylindric, widest in (not symmetrical non-hooked, and absent, respectively).

Long, narrow spatulate leaves with an obtuse or slightly emarginate apex, 5-7 longitudinal nerves on each side of the midrib in the outer 2/3 of the blade, and an ellipsoid to obovoid pitcher with a broad sinuous peristome distinguish it.

N. micramphora is closely related to *N. abgracilis* and *N. cid*, both of which are native to Mindanao. These species are like the *N. alata* group but lack a basal ridge or appendage on the lower surface of the lid.

The pitcher lids, which have poorly developed to non-existent median keels and basal appendages, and the dimorphic lid glands distinguish this species from *N. alata*.

The long, rather stiff indumentum on the younger leaves, the pitcher lids with poorly developed to non-existent median keels nor basal appendages, and the dimorphic lid glands distinguish it from *N. alata*.

N. mirabilis differs from *N. rowaniae* by having slender pitchers with the hip about a third of the way up from the pitcher base (vs. halfway or more), laxer, chartaceous leaves (vs. rigid, arcuate, coriaceous), and longer scandent or climbing aerial stems (vs. erect to subsucculent).

The only differences between this species and *N. truncata* and *N. nobcantleyi* are the plants' smaller stature, more pronounced peristome teeth, and the bronzy, dense, and woolly indumentum found on the petiole wings, tendrils, and traps.

Upper pitchers are wider at the swollen base, gradually narrowing to the slender, subcylindric upper two-thirds (not subcylindric overall, slightly constricted in the middle); partial-peduncles of the inflorescence are 2-flowered (not 1-flowered).

N. attenboroughii, which grows near Mount Victoria, appears to be the most closely related to *N. palawanensis*. It can be distinguished from *N. attenboroughii* by its larger pitchers, which can reach 35 cm in height. The pitchers of *N. palawanensis* are lined with orange to red hairs, distinguishing them from *N. attenboroughii*.

Upper pitchers can be up to 40 cm long and 5 cm wide, with glands distributed densely and evenly over the lower surface. The lid has a bright red lower and upper surface. The lower pitchers have narrow orange-red blotches on their greenish or slightly orange exteriors. The lid is ovate in shape, measuring up to 7cm in length

44.	<i>Nepenthes peltata</i> Sh.Kurata, J	(MINDANAO) Mt. Hamiguitan, Davao Oriental
45.	<i>Nepenthes petiolata</i> Danser	(MINDANAO) Mt. Urdaneta, Agusan del Norte, Surigao del Sur.
46.	<i>Nepenthes philippinensis</i> Macfarl.	(PALAWAN) Mt. Pulgar Thumb Peak; Mt. Victoria
47.	<i>Nepenthes pulchra</i> Gronem., S.McPherson, Coritico, Micheler, Marwinski & V.B.Amoroso	(MINDANAO) trail from Brgy. Kibalabag, Mt. Kiamo, Malaybalay, Bukidnon
48.	<i>Nepenthes ramos</i> Jebb & Cheek	(MINDANAO, Camuigin) Misamis Occidental, Surigao del Norte
49.	<i>Nepenthes robcantleyi</i> Cheek	(MINDANAO) exact location not specified by authors
50.	<i>Nepenthes samar</i> Jebb & Cheek	(VISAYAS) Samar
51.	<i>Nepenthes saranganiensis</i> Sh.Kurata	(MINDANAO) Sarangani
52.	<i>Nepenthes sibuyanensis</i> Nerz	(VISAYAS) Mt. Gitging-giting, Sibuyan
53.	<i>Nepenthes sumagaya</i> Cheek	(MINDANAO) Mt. Sumagaya, Claveria, Misamis Oriental
54.	<i>Nepenthes surigaensis</i> Elmer	(MINDANAO) Mt. Urdaneta, Agusan del Norte
55.	<i>Nepenthes talaandig</i> Gronem., Coritico, Wistuba, Micheler, Marwinski, Gieray & V.B.Amoroso	(MINDANAO) Pantaron Mountain Range, Brgy. St. Peter, Malaybalay, Bukidnon
56.	<i>Nepenthes tholi</i> Jebb & Cheek	(MINDANAO) Lake Parker, T'Boli, South Cotabato
57.	<i>Nepenthes truncata</i> Macfarl.	(MINDANAO) Agusan del Norte, Surigao del Norte near Samsolang

and 6cm in width. The pitcher's interior is white or light yellowish green, with small purple-red blotches running down the sides. A peltate tendril attachment and prominent indumentum distinguish it. Upper pitchers of *N. peltata* have never been observed and are either very rare or absent altogether; the species typically produces ovoid pitchers with a prominent basal crest and large nectar glands on the lower surface of the lid. It's been suggested that the species, like the closely related *N. deaniana* and *N. mira*, may only produce aerial pitchers in deep shade or if provided with enough vegetation to support a climbing stem. Slender pitchers with no appendages on the lower surface, thin, profoundly flanged peristome ribs with long flattened teeth, and petiolate leaves characterize this species. Other Mindanaoan species are unlikely to be confused with *N. petiolata*. The most similar Philippine species is *N. mira*, which has broadly ellipsoid lower pitchers and infundibuliform upper pitchers. *N. philippinensis* is most closely related to *N. macrovulgaris*, a Sabah-only species that appears to be restricted to ultramafic areas like *N. philippinensis*. Based on the description, it was ascribed to synonymy under *N. alata* Blanco, to which it is superficially similar but lacks a lid appendage. *N. pulchra* is closely related to *N. petiolata*, and their pitchers have very similar morphology and coloration. The petioles of *N. pulchra* are winged, and the wings extend the entire length of the internode and a portion of the preceding internode. The leaf base of *N. petiolata* clasps the stem and is petiolate. The upper pitchers lack fringed wings; the peristome is flattened, not cylindrical; the lower surface of the lid has strongly dimorphic nectar glands, not uniform; and the inflorescences have partial peduncles that are 2-flowered, not 1-flowered, as in *N. alata*. It is related to *N. truncata* and was considered a dark, highland form of that species. Borneo's *N. veitchii* is a close relative. *N. robcantleyi* pitchers are enormous, measuring up to 40 cm in length and 10 cm in width. The inflorescence is the tallest among known *Nepenthes* species, reaching up to 2.5 m in length. However, the plant does not grow very tall and that is not identified to climb. *N. samar* differentiates from *N. merrilliana* in that it has a winged climbing stem, an obtuse, rounded, or retuse leaf apex, and a leaf base that is slightly attenuate but almost as wide as the rest of the blade, and a 1.5-3cm broad leaf base at the stem junction. Leaf texture and surface are leathery and glossy, with higher pitchers being infrequently produced, the inner part of the peristome of upper pitchers revolute, the edge not visible without dissection, and the outer tepal surface being hairy. The pitchers' morphology is quite like *N. alata*, and it is known for its very decurrent leaf attachment that runs a long distance down the stem, often continuing into the next internode. Its frequent characteristics include winged petioles, lids with basal ridges on the lower surface (sometimes expanded into appendages), and upper pitchers that are normally largest toward the base. *N. insignis* has also been compared to *N. sibuyanensis*. The pitcher mouth of *N. sibuyanensis* is virtually horizontal, compared to oblique in the latter, and the former produces one-flowered pedicels. Peristome creates a short neck and longer than *N. insignis*. The pitchers of *N. sibuyanensis* are also ovate or somewhat infundibulate in form. The pitcher shape of *N. sibuyanensis* distinguishes it from *N. burkei* and *N. ventricosa*; the traps of *N. burkei* and *N. ventricosa* are oblong to slightly infundibulate while pitchers are smaller. It is sympatric with *N. pantaronensis*, and there have been reports of hybrids between the two species. *N. sumagaya* has no clear close relatives in the genus due to its uncommon combination of morphological features. At an early growth, plants begin to grow erect and are supported by the surrounding vegetation, which is largely low bushes. The vines and short stems have broad spatulate-ovate leaves that are 10 cm long and 3.5 cm wide, with a broad, winged and 1 cm wide petiole. Short and ascending stems have upper pitchers that are 10-15 cm tall and 3 cm wide. The upper pitchers have a yellowish green to orange appearance that is irregularly stained with crimson or has red spots. The pitcher's interior is pale, with large purple spots visible through the pitcher wall. The lid is yellow, with numerous red blotches and a tiny appendage near the base that has been reduced to a keel. The pitcher lid spur is 3 mm long, unbranched, filiform, and unbranched. The mouth of a pitcher is circular, slightly elevated in front and elongated in rear, with a slightly developed neck and a small appendage in the back. The inflorescence is a panicle with a 15-centimeter scape and a 15-centimeter rachis. The anther column can be up to 14 mm long, and the ovary can be up to 5 mm long, with mature seeds inside. Across the leaf, there is a conspicuous indumentum. *N. talaandig* differs from *N. cornuta* by having bulbous lower pitchers with a flattened, crenellated peristome and a winged petiole that clasps the stem. *N. tholi* differs from *N. saranganiensis* in having stems are terete (not 4-winged), the leaf blade midribs and margins are hirsute (not glabrous), and the pitcher lid apices are retuse (not rounded). Because of its conspicuously truncate to severely notched leaf blade apex, huge size, and lid with a basal glandular crest, *N. truncata* is unlikely to be confused with any other species. The species, like *N. bellii*, *N. merrilliana*, and *N. petiolata*, appears to have

58.	<i>Nepenthes ultra</i> Jebb & Cheek	(LUZON) Aurora; Isabela; Zambales	a very limited distribution, being found only in the very ultramafic north-eastern corner of Mindanao. In its highly petiolate leaves, appendaged pitcher cover, 2-flowered partial peduncles, and venation of the leaf blade, <i>Nepenthes truncata</i> reveals affinities to the <i>N. maxima</i> group. Only a few incomplete collections of <i>N. truncata</i> exist. <i>N. ultra</i> differs from <i>N. alata</i> in having upper pitchers lack fringed wings entirely; outer pitcher surface sparsely and minutely stellate hairy, 10–15 percent of surface covered with red-translucent hairs 0.06–0.1 mm diam; stems glabrous or sparsely hairy at apex. <i>N. ventricosa</i> is easily recognized by its angular stems and white, hourglass-shaped upper pitchers. <i>N. ventricosa</i> is similar to <i>N. burkei</i> of Mindoro and <i>N. sibuyanensis</i> of Sibuyan, but neither species has the white, constricted pitchers of <i>N. ventricosa</i>. Regarding pitcher morphology, <i>N. viridis</i> differs from <i>N. alata</i> in various ways. The front section of the peristome in <i>N. viridis</i> is elevated and crenellated. The pitcher lid is likewise unusual, with a noticeable keel or keeled appendage and a highly domed cover. <i>N. alata</i>, on the other hand, has a triangular appendage or a shortened keel and no domed lid. The development of the ventral pitcher wings also differs significantly. Lower and intermediate pitchers of <i>N. viridis</i> are only found in the upper third of the pitcher cup and have large, widely spaced filaments. Leaf blades narrowly oblong-elliptic (not ovate-lanceolate), petiole with wings patent (not severely involute, seeming cylindric), and basal lid appendage present in upper pitchers, noticeable, strongly convex or hooked, distinguish <i>N. zygion</i> from <i>N. mindanaensis</i> (not inconspicuous or weakly developed).
59.	<i>Nepenthes ventricosa</i> Blanco	(LUZON) Aurora; Cagayan; Ilocos Norte; Ifugao; Nueva Ecija; Nueva Vizcaya; Mountain Province; Bataan; Quezon; Rizal; Camarines; Albay; Sorsogon	
60.	<i>Nepenthes viridis</i> Micheler, Gronem., Wistuba, Marwinski, W.Suarez & V.B.Amoroso	(VISAYAS) Samar (MINDANAO) Dinagat	
61.	<i>Nepenthes zygion</i> Jebb & Cheek	(MINDANAO) Mt. Pasian; Agusan del Norte; Davao Oriental	

¹ = Data extracted from published description paper, literature, and online databases of each species; ^N = native/indigenous

3.2 Resolving the molecular phylogeny of the Philippine *Nepenthes*

Mullins (2000) made the first attempt to resolve phylogenetic relationships within the genus *Nepenthes* using both the chloroplast and nuclear genome: the nuclear 5S-NTS non-transcribed spacer region and the chloroplast's trnL-F intron plus intergenic spacer (5S-NTS and trnL-trnF). Nepenthaceae lacks identifiable morphological features and exhibits extreme polymorphism, preventing the creation of a phylogenetic tree. At that time, there were a total of 87 species that originated from different biogeographic regions, with the goals of testing the monophyly of the genus and constructing a hypothesis of species relationships, evaluating the taxonomic circumscription of poorly known species, and investigating character evolution and biogeographic patterns (Mullins, 2000). DNA sequencing analysis has revealed the evolutionary tree for the first time, proving the Nepenthaceae to be monophyletic. The 5S-NTS tree exhibits more strongly supported clades, suggesting a faster evolutionary rate for *Nepenthes* than the more difficult-to-resolve trnL-trnF tree.

Table 2. Nested sampled species within Clade C, Clade E1, and Clade F1 using nuclear 5S-NTS and chloroplast trnL-F intron with notes on morphological characteristics and geographical distribution.¹

Clade	Morphological Characteristics	Geographical Distribution	Nested Species
Section V, subsection C (Clade C)	The pitcher lid among nested species is morphologically similar but lacks petiolate leaves and an abaxial appendage.	Widely distributed; not monophyletic. Species originating from Mindanao (a), Mindoro (b), Luzon (c), and Sibuyan Island (d).	(a) <i>N. merilliana</i> , <i>N. bellii</i> (b) <i>N. burkei</i> (c) <i>N. ventricosa</i> (d) <i>N. sibuyanensis</i>
Section V, subsection E series 1 (Clade E1)	Morphologically identical to one another, with petiolate leaves; no unique synapomorphy.	Restricted; monophyletic. Species within Mindanao (a). Purely ultramafic species. <i>N. petiolata</i> is sister to <i>N. truncata</i> and <i>N. copelandii</i> , both of which are endemic to Mindanao and grow sympatrically.	(a) <i>N. petiolata</i> , <i>N. truncata</i> , <i>N. copelandii</i>
Section V, subsection F series 1 (Clade F1)	<i>N. mira</i> is morphologically distinct to <i>N. argentii</i> and <i>N. philippinensis</i> but does not share any synapomorphies. <i>N. mira</i> is more similar to Bornean <i>N. villosa</i> .	Restricted within Palawan (a) and Sibuyan Island (b).	(a) <i>N. mira</i> , <i>N. philippinensis</i> (b) <i>N. argentii</i>

¹ = Data from 11 Philippine *Nepenthes* species sampled by Mullins (2000). Clades with nested species outside Philippines are excluded here.

Mullins (2000) used molecular data sets from two opposing and separate gene areas. Then a third data set was analyzed and merged with the molecular data sets, consisting of distinct morphological characters. As a result, the understanding of character evolution and biogeographic trends proposed by Danser (1928) and Jebb and Cheek (1997) in questionnaire classification systems was clarified and improved. Out of 19 recorded Philippine *Nepenthes* in 2000, only 12 were sampled in his study. Three Philippine-restricted clades were formed from these sampled species: Section V Subsection C (Clade C), Section V, Subsection E Series 1 (Clade E1), and Section V, Subsection F Series 1 (Clade F1). These clades are separated by differences in their morphological characteristics and geographical distributions (see Table 2). However, the Philippine *N. alata* sampled was not assigned to any clade, suggesting that the specimen was a hybrid at the time its DNA was sequenced. This is valid since *N. alata* is a highly variable taxon that is vulnerable to natural hybridization (Cheek and Jebb, 2014; Murphy et al., 2020). All species of *Nepenthes* are obligate outbreeders, being dioecious plants. Because numerous taxa are strikingly similar, all are interfertile. Isolated hybrid swarms are regularly encountered in sympatric species areas, it has

long been assumed that hybridization has a role in the diversification of *Nepenthes* (Mullins, 2000; McPherson, 2009a; McPherson, 2009b; Cheek and Jebb, 2013f; Handayani, 2017; Murphy et al., 2020).

At the time, the phylogeny derived from the trnK intron data was partial to *Nepenthes*' current infrageneric taxonomy. Meimberg et al. (2001) constructed three clades using only trnK as a marker for phylogenetic analysis. The first clade (Clade I) consisted of all species from Sumatra, the Malay Peninsula, Thailand, Cambodia, and Vietnam, as well as Philippine species with three nested species. The second clade (Clade II) appeared to have included all the descendants of Mullins' Clade C (2000). The third clade (Clade III) showed no any nested Philippine species. For these species, the markers trnK intron, 5S-NTS, and trnL-trnF show the same grouping, confirming a morphologically monophyletic group. Meimberg et al. (2001) distinguished the lineages of Philippine taxa based on morphological characters rather than geography. When compared to the results of Mullins (2000), it appears to have limited geographical specifications; Meimberg et al. (2001) did not elaborate on specific Philippine Island restrictions for Clades I and II (see Table 3). Molecular evidence from Meimberg et al. (2001) suggests that Southeast Asian colonization began with the introduction of ancient Indian ancestors. Later, due to this development, a new secondary center of diversity arose in the Malay Archipelago. Migration across land bridges most likely reached Madagascar, the Seychelles, and New Caledonia (Raven and Axelrod, 1974), starting with widely dispersed common ancestors and ending with extinction, leading to the extinction of the current taxa. Furthermore, evidence does not support long-distance dispersal.

Table 2. Nested sampled species within Clade I and Clade II using trnK intron with notes on morphological characteristics and geographical distribution.¹

CLADE	MORPHOLOGICAL CHARACTERISTICS	GEOGRAPHICAL DISTRIBUTION	NESTED SPECIES
CLADE I	Morphologically dissimilar as per groupings of Danser (1928) having characteristics of <i>Vulgate</i> , <i>Insignes</i> , and <i>Regiae</i> sects.		<i>N. mirabilis</i> , <i>N. petiolata</i> , <i>N. truncata</i>
CLADE II	Morphologically similar to <i>Insignes</i> group of Danser (1928). <i>N. alata</i> was placed in this, showing relationship to <i>Regiae</i> group of Danser (1928).	Clade I and II are widely distributed throughout the Philippines.	<i>N. ventricosa</i> , <i>N. merilliana</i> , <i>N. bellii</i> , and <i>N. globamphora</i> ²

¹ = Data from 7 Philippine *Nepenthes* species sampled by Meimberg et al. (2001). Clades with nested species outside Philippines are excluded here.

² = *N. globamphora* sampled by Meimberg et al. (2001) is now recognized as *N. bellii*.

Using the peptide transferase 1 (PTR1) locus in several species, Meimberg and Heubl (2006) created a new nuclear marker for phylogenetic analysis of *Nepenthes*. Mullins (2000) had already used a nuclear marker in his study. In terms of biogeographical evolution, the PTR1, unlike the previously studied translocated copy of trnK, has proven useful. These findings are supported by the major clades visible in the trnK intron phylogeny and the PTR1 phylogenetic reconstruction. Although most species from the Sunda Shelf, the Philippines, and other regions of Southeast Asia are very similar, most Bornean species form a monophyletic group. Even with the presence of the nuclear marker PTR1 for phylogenetic analysis, it fails to identify specific geographic clades within the Philippines (refer to Table 4), and the sampling of Philippine taxa still seems to be inadequate compared to other paleotropical taxa.

Table 3. Nested sampled species within Clade I and Clade II trnK intron and PTR1 with notes on morphological characteristics and geographical distribution.¹

CLADE	MORPHOLOGICAL CHARACTERISTICS	GEOGRAPHICAL DISTRIBUTION	NESTED SPECIES
CLADE I		Includes all species found on the Sumatra mainland in Southeast Asia.	<i>N. mirabilis</i> , <i>N. petiolata</i> , <i>N. truncata</i>
CLADE II	Clade I and II are similar to Meimberg et al. (2001).	Species from Borneo and the Philippines predominate.	<i>N. alata</i> , <i>N. mira</i> , <i>N. bellii</i> , <i>N. burkei</i> , <i>N. merilliana</i> , <i>N. sibuyanensis</i> , <i>N. ventricosa</i>

¹ = Data from 10 Philippine *Nepenthes* species sampled by Meimberg and Heubl (2006). Clades with nested species outside Philippines are excluded here.

The published description of *Nepenthes* peaked in 2010 with eight new species, and in 2011 with 10 new ones (Golos, 2012). In the Philippines, researchers discovered seven new species between 2010 and 2012. *Nepenthes gantungensis* S.McPherson, Cervancia, Chi.C.Lee, Jaunzems, Mey & A.S.Rob. (2010), *Nepenthes hamiguitanensis* Gronem., Wistuba, V.B.Heinrich, S.McPherson, Mey & V.B.Amoroso (2010), *Nepenthes palawanensis* S.McPherson, Cervancia, Chi.C.Lee, Jaunzems, Mey & A.S.Rob. (2010), *Nepenthes leonardoi* S.McPherson, Bourke, Cervancia, Jaunzems & A.S.Rob. (2011), *Nepenthes pulchra* Gronem., S.McPherson, Coritico, Micheler, Marwinski & V.B.Amoroso (2011), *Nepenthes robcantleyi* Cheek (2011), and *Nepenthes ceciliae* Gronem., Coritico, Micheler, Marwinski, Acil & V.B.Amoroso (2011). But Philippine taxa were still undersampled. Golos (2012) used the same markers as Meimberg et al. (2001) and Meimberg and Heubl (2006). Golos (2012) only

sequenced and nested three of the seven Philippine endemics in their respective clades (see Table 5). Golos (2012) did not sequence samples of *N. deaniana*, *N. hamiguitanensis*, or *N. mantalingajanensis*. It's hard to amplify PTR1 even from living things, and PTR1 primers often get mixed up, which leads to common banding patterns in gel results (Meimberg and Heubl, 2006; Golos, 2012).

Table 4. Nested sampled species within Clade I and Clade II using trnK intron and PTR1 with notes on morphological characteristics and geographical distribution.¹

Clade	Morphological Characteristics	Geographical Distribution	Nested Species
Clade I			<i>N. copelandii</i>
Clade II	Similar findings to Meimberg et al. (2001) and Meimberg and Heubl (2006).		<i>N. argentei</i> , <i>N. philippinensis</i>

¹ = Data from 7 Philippine *Nepenthes* species sampled by Golos (2012). Clades with nested species outside Philippines are excluded here.

² = Four out of seven nested species within Clade I and Clade II from Golos (2012) were the same species nested in the same clades from the Meimberg et al. (2001) and Meimberg and Heubl (2006) results using trnK intron and PTR1 markers. *N. copelandii*, *N. argentei*, and *N. philippinensis* were added to their respective clades using the same markers employed by Golos (2012).

Instead of being useless for phylogenetic analysis, as previously thought, the PTR1 locus proved to be extremely helpful in this study. The main groups seen in the trnK intron phylogeny also show up in the PTR1 phylogenetic reconstruction, which backs up this conclusion (Meimberg et al., 2000; Meimberg and Heubl, 2006; Golos, 2012). The Sunda Shelf and Southeast Asian species are highly convergent, while Bornean species form a distinct monophyletic group (Meimberg and Heubl, 2006). However, preliminary results from the PTR1 gene locus remain. Currently, we cannot make a firm estimate about *Nepenthes*' ancestry due to the failure to include an outgroup for the PTR1 locus, which includes outgroup taxa from Droseraceae (*Drosera*), Dioncophyllaceae (*Triphyophyllum*), and Ancistrocladaceae (*Ancistrocladus*).

According to the findings of Alamsyah and Ito (2013), *Nepenthes* has most likely moved to the Philippines from Borneo, which contradicts the conclusion of Meimberg and Heubl (2006) regarding the colonization of Southeast Asian species. They demonstrated this by using ITS nrDNA sequences, the internal transcribed spacer of the nuclear ribosomal DNA, as markers for their phylogenetic study of 56 *Nepenthes* species (nested in 7 different monophyletic subclades), and by finding *Nepenthes campanulata* at the base of their tree in Subclades III and IV, sister groups to Subclade II, which includes Borneo and Sulawesi species. Furthermore, Alejandro et al. (2008), using the same marker, strongly supported the placement of *N. alata* and *N. ventricosa* in Subclade IV. Alamsyah and Ito (2013) found that ITS nrDNA sequences did not form any unique Philippine island-specific groups or lineages, despite the strong basis of morphological similarities. Alamsyah and Ito (2013) restricted their phylogenetic research to major biogeographical areas of *Nepenthes* in Southeast Asia, and focused on evolutionary trends in peristome morphologies based on Danser (1928). This may have led them to overlook or not investigate other character states of nested species within Subclade IV, their Philippine-restricted clade, and Subclade III, which could have revealed island-specific distribution within the archipelago. However, Table 6 indicates that Subclade III appears to restrict nested species to Mindanao, while Subclade IV exhibits widespread distribution throughout the Philippines.

Table 5. Nested sampled species within Subclade III and Subclade IV using ITS nrDNA sequences with notes on morphological characteristics and geographical distribution.¹

Subclade	Morphological Characteristics	Geographical Distribution	Nested Sampled Species
Subclade III	Species have small peristomes (suggesting peristomes is plesiomorphic state in <i>Nepenthes</i>)	Limited to Philippine islands, but authors did not specify restrictions on specific Philippine islands.	<i>N. copelandii</i> , <i>N. mindanaensis</i> , <i>N. truncata</i>
Subclade IV	There were intermediate and broad peristomes in some species.		<i>N. alata</i> , <i>N. bellii</i> , <i>N. burkei</i> , <i>N. merrilliana</i> , <i>N. ventricosa</i>

¹ = Data from 8 Philippine *Nepenthes* species sampled by Alamsyah and Ito (2013). Clades with nested species outside Philippines are excluded here.

The Southeast Asian *Nepenthes* clades diversified into two major clades, according to the most recent phylogenetic study by Murphy et al. (2020). Southeast Asia is home to nearly all of the known *Nepenthes* species, making it the epicenter of the genus' diversity. Murphy et al., 2020 consistently found the two sister clades of Southeast Asian *Nepenthes* together. Clade 1 includes common and lowland species from Sulawesi and Papua, as well as a few high-altitude species from Sulawesi and Papua. Clade 2 contains the most distinct clades from Sumatra-Java, Indochina, Peninsular Malaysia, Mindanao, and Palawan. Both Clade 1 and Clade 2 included Borneo, Sulawesi, and Papua New Guinea species, which were less clearly differentiated than those from other regions. These findings demonstrate the resolution of most *Nepenthes* species into well-supported clades, and the presented phylogeny can enhance our understanding of *Nepenthes* lineage evolution, particularly for geographically defined clades. Murphy et al. (2020) demonstrated a strong geographical delimitation among Philippine taxa, supporting a monophyletic pan-Philippine clade that reveals three exclusive lineages and the widespread Insignes clade (see Table 7). The study also showed that *N. pervillei* from Seychelles is related to the rest of the genus and *N. danseri*

from Waigeo island is related to all other Asian species (Murphy et al., 2020). This supports what other researchers have found about Western taxa that split off early on (Mullins, 2000; Meimberg et al., 2001; Meimberg and Heubl, 2006; Golos, 2012; Alamsyah and Ito, 2013). When comparing Alamsyah and Ito's (2013) study with Murphy et al.'s (2020) study, it appears that all nested species within Subclade III from Alamsyah and Ito (2013) are Mindanaoan taxa, which aligns with Murphy et al.'s Mindanao Clade, while the species nested within Subclade IV (Alamsyah and Ito, 2013) appeared to be polyphyletic in Murphy et al.'s (2020) trees.

Table 6. Nested sampled species within Mindanao Clade, Palawan Clade, Graciliflora Clade, and Insignes Clade using angiosperms353 probe set with notes on morphological characteristics and geographical distribution.¹

Clade	Morphological Characteristics	Geographical Distribution	Nested Sampled Species
Mindanao Clade	Most Mindanaoan taxa were classified into sect. <i>Alatae</i> by Cheek and Jebb. For <i>N. micramphora</i> , lid appendage absent and slender peristomes present.	Mindanao Island only	<i>N. ceciliae</i> <i>N. copelandii</i> <i>N. cornuta</i> <i>N. hamiguitanensis</i> <i>N. justinae</i> <i>N. micramphora</i> <i>N. mindanaoensis</i> <i>N. pantaronensis</i> <i>N. peltata</i> <i>N. petiolata</i> <i>N. pulchra</i> <i>N. robcantleyi</i> <i>N. sumagaya</i> <i>N. talaandig</i> <i>N. truncata</i> <i>N. zygon</i>
Palawan Clade	Distinctive blade-like peristome ridges. No lid appendage. Members of Palawan Clade placed under Sect. <i>Villosae</i> of Cheek and Jebb are similar to type species <i>N. villosae</i> . Filiform bracts and hipped pitchers for <i>N. philippinensis</i> .	Palawan Island only	<i>N. attenboroughii</i> <i>N. deaniana</i> <i>N. leonardo</i> <i>N. mantalingajanensis</i> <i>N. mira</i> <i>N. palawanensis</i> <i>N. philippinensis</i> <i>N. sp. Anipahan</i>
Graciliflora Clade ²	Nested sampled species within this clade having characteristics similar to the sect. <i>Alatae</i> (<i>N. alata</i> group) of Cheek and Jebb.	Luzon, Visayas (Sibuyan), and Dinagat	<i>N. alata</i> <i>N. argentii</i> <i>N. armin</i> <i>N. graciliflora</i> <i>N. viridis</i>
Insignes Clade ³	Nested sampled species within this clade having characteristics similar to the sect. <i>Insignis</i> (<i>N. insignis</i> group) such as pitchers without lid appendages, sparse indumentum, and large sessile leaves.	Luzon, Visayas (Mindoro and Sibuyan), and Northern Mindanao	<i>N. barcelonae</i> <i>N. bellii</i> <i>N. burkei</i> <i>N. merrilliana</i> <i>N. sibuyanensis</i> <i>N. surigaoensis</i> <i>N. ventricosa</i>

¹ = Data from 35 described and 1 undescribed (*N. sp. Anipahan*) Philippine *Nepenthes* species sampled by Murphy et al. (2020). Clades with nested species outside Philippines are excluded here.

² = Probable type species for this clade is *N. graciliflora*.

³ = Probable type species for this clade is *N. insignis*.

Nepenthes species from Mindanao and Palawan belong to consistent and well-supported clades while remaining geographically distinct. The Mindanao Clade is sister to the Palawan and Graciliflora Clades (Murphy et al., 2020). Cheek and Jebb (2013f) confirmed that most species assigned to the section *Alatae* in the Cheek and Jebb classification, including its type species (*N. alata*), are members of the Mindanao Clade. Instead, these taxa formed the Graciliflora Clade. The Mindanao, Palawan, and Graciliflora Clades form the entire monophyletic Philippine Clade. Murphy et al., 2020 confirmed the geographical heterogeneity of the Insignes Clade alongside the section *Tentaculatae*, which includes Borneo and Sulawesi species. This is linked to widespread species in Luzon (*N. barcelonae*, *N. ventricosa*), the Visayan Islands (*N. burkei*, *N. sibuyanensis*), and Mindanao (*N. bellii*, *N. surigaoensis*).

3.3 Phylogenetic status of Philippine *Nepenthes mirabilis*

Murphy et al. (2020) sampled many *N. mirabilis* from various countries and biogeographical hotspots but did not sample any species from the Philippines. It is true that *N. mirabilis* is the most widespread and likely abundant species of all *Nepenthes*. Furthermore, it has the most synonyms of all *Nepenthes* species and demonstrates remarkable variety in pitcher form and color across its range, resulting in diverse hybrids (Catalano, 2009). Despite its wide distribution, this species likes to live in coastal marshes where there are few other *Nepenthes* species (Clarke, 1997; Clarke, 2001). It would be fascinating to learn whether *N. mirabilis* has acquired particular adaptations to help with migration or if existing in coastal wetlands is enough. This corresponds to the distribution of *N. mirabilis* in the Philippines, primarily in swamps, marshes, and forests from sea level to 900 meters (Pelser et al., 2021).

Murphy et al., 2020 recently classified several *N. mirabilis* species as distinct species. There were at least three recorded *N. mirabilis* natural hybrids in the Philippines: *Nepenthes mirabilis* × *N. alata* Sh. Kurata & Toyoshima (1972) (*N. mirabilis* × *N. alata*); *Nepenthes* × *mirabilata* Hort. ex Lauffenburger (1995) (*N. alata* × *N. mirabilis*); and *Nepenthes* × *tsangoya* Tsang ex Lauffenburger (1995) nom.nud (*N. alata* × *N. merrilliana*) × *N. mirabilis*. However, Lauffenburger (1995) localizes these hybrids to Mindanao, where the parent species overlap. Murphy et al. (2020) sampled the Philippine *N. mirabilis* using the angiosperms353 probe set. They expected the following results: 1) Samples from various locations may be nested in any of the Philippine clades identified by Murphy et al. (2020), and 2) sampling different Philippine hybrids could yield different results, potentially indicating their species. Despite their obvious paraphyly, these related species form a clade when considering their extensive range, lack of apparent long-range dispersal mechanisms, and proclivity for hybridization. The paraphyletic results may be due to noise or a lack of support and resolution in the gene trees, among other things (Mullins, 2000; Alamsyah & Ito, 2013; Murphy et al., 2020). Based on the trees from Meimberg et al. (2001) and Meimberg and Heubl (2006), Murphy et al. (2020) placed Philippine *N. mirabilis* within the group of *N. petiolata* and *N. truncata*, both species belonging to the Mindanao clade. It is most likely that the native *N. mirabilis* is a Mindanaoan taxon (see Table 1).

Possible clades of unsampled Philippine *Nepenthes* species following angiosperms353 of Murphy et al., 2020

Murphy et al. (2020) were confident in placing of most species and unsampled taxa in broad clades, at least in terms of the nuclear genome, since their phylogenetic trees were relatively stable compared to previous studies. So far, the use of the angiosperms353 probe set for the 151 *Nepenthes* species included in Murphy et al.'s phylogenetic tree (2020) has had the most advanced resolution. The method divided most species into well-supported lineages, revealing new information about *Nepenthes* evolution. Several clades, especially those from Mindanao and Palawan, are geographically distinct. There are still some worries about individual gene trees, but their results show that the angiosperms353 probe collection has the most potential for species-level systematics compared to other molecular approaches.

Since their research began in 2018, there have been gaps in sampling, especially for newly described species (Murphy et al., 2020). Murphy et al. (2020) acknowledged that challenges in collecting and retrieving samples, like leaf tissues or herbarium specimens, prevented them from sampling some Philippine species. For example, *Nepenthes extincta* Jebb & Cheek, a published species in 2013, was described using only a single existing herbarium-type specimen collected in 1978 (Cheek and Jebb, 2013f). Although the authors classified it as critically endangered, it is believed to be extinct in the wild due to mining companies exploiting its natural habitat, which is rich in ultramafic substrate, and the lack of sightings of this species since then. These findings are almost identical to those of *Nepenthes alzapana*, Jebb & Cheek, and other species thought to be extinct in the wild. Future phylogenomic studies, grounded in the methods of Murphy et al. (2020), may include some species if existing wild or cultivated specimens exist. Unsampled species are almost certainly extinct as a result of human disturbances in their natural habitats. Time of species publication, availability of specimens, and potential conflicts of interest are all potential barriers to conducting comprehensive phylogenetic research (Mullins, 2000; Meimberg et al., 2001; Meimberg and Heubl, 2006; Golos, 2012; Alamsyah and Ito, 2013; Murphy et al., 2020).

Table 8. Summary of unsampled species to their possible clades based on morphological characteristics and geographical distribution similarities to clades formed by Murphy et al. (2020).

Clade	Unsampled Philippine Species
Mindanao Clade = 13 taxa	<i>N. abgracilis</i> , <i>N. alfredoi</i> , <i>N. candalaga</i> , <i>N. cid</i> , <i>N. extincta</i> , <i>N. kitanglad</i> , <i>N. malimumuensis</i> , <i>N. nebularum</i> , <i>N. ramos</i> , <i>N. saranganiensis</i> , <i>N. tholi</i> , <i>N. erucoides</i> ¹ , <i>N. kampilili</i> ¹
Palawan Clade = 7 taxa	<i>N. abalata</i> , <i>N. gantungensis</i> <i>N. erucoides</i> ¹ , <i>N. campanulata</i> ² , <i>N. kampilili</i> ¹
Graciliflora Clade = 4 taxa	<i>N. maximoides</i> , <i>N. ultra</i> <i>N. leyte</i> , <i>N. negros</i> , <i>N. samar</i> ³ <i>N. erucoides</i> ¹
Insignes Clade = 7 taxa	<i>N. aenigma</i> , <i>N. alzapana</i> , <i>N. manobo</i> , <i>N. cabanae</i> <i>N. leyte</i> , <i>N. negros</i> , <i>N. samar</i> ³

¹ = *N. erucoides* can be potentially nested in either of three clades: Mindanao, Palawan, or Graciliflora; *N. kampilili* can be potentially nested in Palawan clade.

² = *N. campanulata* can be potentially nested in Palawan clade with considerations.

³ = *N. leyte*, *N. negros*, and *N. samar* can be potentially nested in either Graciliflora clade or Insignes clade.

We must sample and analyze the remaining 26 Philippine species (Appendix 2) to fully understand the phylogenetic relationship between the Philippine *Nepenthes* and its relatives. We noted a possible phylogenetic position for these species based on morphology and geographical distribution similarities to nested species from the most comprehensive phylogeny to date (Murphy et al., 2020). To confirm this, a government-funded research extension must be considered. We can use type specimens, vouchers, and tissue samples to conduct DNA sequencing for phylogenetic analysis. We can use the results for conservation efforts. Table 8 shows a list of species

that haven't been sampled yet that might belong to the same clades as species from Murphy et al. (2020) based on their physical features and where they live. Figures 1 and 2 show the distribution of 61 *Nepenthes* species in the Philippines.

Mindanao Clade

***Nepenthes abgracilis* Jebb & Cheek.** It is a species found in Surigao, Mindanao, and has similarities to *N. micramphora*, a nested species within the Mindanao Clade. It differs from *N. micramphora* in longer stem diameter, 3-4 mm width of decurrent leaf wings at node, larger leaf blade size, upper pitchers slightly broadest base about 16 cm long; longer peristome width, lid nectar gland type thinly bordered, and entire spur (Cheek and Jebb, 2013g).

***Nepenthes alfredoi* V.B.Amoroso & Lagunday.** It is possible to have *N. alfredoi* in Mindanao Clade because it differs from *N. zygon* having both pitchers with fringed wings, extending along the tendril for some distance; two-flowered and rarely one flowering for male and female inflorescences (Jebb and Cheek, 2014). *N. alfredoi* is distributed on Mt. Hamiguitan, Davao Oriental, Mindanao. Since *N. zygon* was included in the Mindanao Clade (Murphy et al., 2020) these morphological differences strongly support the suggestion.

***Nepenthes candalaga* Lagunday & Amoroso.** *N. candalaga* is located in Davao de Oro, Mindanao and is closely related to *N. justinae* but differs in several key features: it has a lamina with 2–3 longitudinal veins parallel to the midrib (*N. justinae* has 3 veins). It also has an orbicular pitcher lid, a non-bifid lid spur tip, a triangular lid appendage, short banner-shaped wings below the peristome covering a sixth of the trap's anterior and becoming ridges toward the base, and an absent upper pitcher rim that is widest near the peristome. Locality and morphological features like *N. justinae* (a species nested in Mindanao clade of Murphy et al. (2020)) indicates possible placement of *N. candalaga* in the same clade.

***Nepenthes cid* Jebb & Cheek.** The species is distributed in Northcentral Mindanao, specifically in Bukidnon Province, which happens to be around other *N.* species such as *N. ceciliae*, *N. cornuta*, and *N. pantaronensis*. It is like *N. micramphora* having terete stem in cross-section, stem diameter, width of decurrent leaf wings at node nil, teeth not visible peristome inner edge, and >100 lid nectar glands (Cheek and Jebb, 2013g). This geographical and morphological data considers *N. cid* to be nested within the Mindanao Clade.

***Nepenthes extincta* Jebb & Cheek.** Although thought to be extinct by the authors because of rampant open-cast mining in its natural habitat, its placement within the Mindanao Clade is in no doubt. It is found along the border of Surigao del Sur and Surigao del Norte. It differs from *N. mindanaoensis* (a nested species within the Mindanao Clade) in lacking fringed wings in its pitchers, a cordate lid base, and the indumentum of dense minute grey-white stellate hairs in the midrib (Cheek and Jebb, 2013f).

***Nepenthes kampalili* Lagunday & Amoroso.** *N. kampalili* is found in Davao de Oro, Mindanao which resembles *N. peltata*, a nested species within Mindanao clade of Murphy, 2020. The geographical distribution of *kampalili* and *peltata* strongly supports its placement within the Mindanao Clade. However, according to Lagunday & Amoroso (2024), it is placed in *Nepenthes* section *Villosa*. The features that classify it within this section include blade-like teeth on the peristomes, absence of central basal appendages on the pitcher lid, as well as developed pitcher lids, and preference for high-altitude ultramafic habitats. Phylogenetic analysis by Murphy et al. (2020) indicates that species in section *Villosa* (or *Villosae*) are nested within the Palawan clade. Morphologically, *N. kampalili* could be nested within the Palawan clade.

***Nepenthes kitanglad* Jebb & Cheek.** It differs from *N. saranganiensis* (Table 1) in terms of stems, pitchers, habit, pitcher mouth, lid, and pitcher base. It is found in Bukidnon, Mindanao (Cheek and Jebb, 2013f). The geographical distribution of this species is a strong cause of its placement within the Mindanao Clade.

***Nepenthes malimumuensis* Lagunday, Acma, Cabana, Sabas & V.B.Amoroso.** It belongs to the *Villosae* group (type species: *Nepenthes villosa*) (Cheek and Jebb, 2013f) according to Lagunday et al. (2017) and differs from *N. sumagaya* in having broadly spatulate to ovate leaves, rounded leaf apex, 4 to 5 longitudinal nerves, wings of upper pitchers not apparent or reduced to ribs and reduced to a keel lid appendage. It also differs from *N. truncata* Macfarl. in terms of the lamina, pitcher peristome, and lid appendage. *N. sumagaya* and *N. truncata* were placed in

the Mindanao Clade. The comparative morphology of *N. malimumuensis*, *N. sumagaya*, and *N. truncata* and the phylogenetic data of the latter species suggest its potential placement in the Mindanao Clade.

***Nepenthes nebulorum* G.Mansell & W.Suarez.** It was assigned by Mansell and Suarez (2016) to putative *Regiae* group (Danser, 1928). The species is closely related to *N. robcantleyi* and *N. truncata* and grows sympatrically in lower elevations with *N. truncata* and *N. cfr. cornuta* (Mansell and Suarez, 2016). The placement of *N. robcantleyi* and *N. truncata* in the Mindanao Clade (Murphy et al., 2020) supports our proposal to place the species in the same clade.

***Nepenthes ramos* Jebb & Cheek.** It differs from *N. alata* Blanco (Table 1) in terms of upper pitchers, peristome, lower lid surface, nectar glands, and inflorescences. Although this species was compared to *N. alata* (a nested species within Graciliflora Clade), *N. ramos* is found in Surigao, Mindanao and, having characteristics like other Mindanaoan taxa that were considered part of Danser's and Cheek and Jebb's *N. alata* group (Danser, 1928; Cheek and Jebb, 2013f) the placement of *N. ramos* within the Mindanao Clade is highly considered.

***Nepenthes saranganiensis* Sh. Kurata.** It is the only Philippine species reported to be found in the Sarangani Province, Mindanao. *N. saranganiensis* is a potential species within the Mindanao Clade, just as *N. ramos* is morphologically like *N. alata* with few differences.

***Nepenthes tболи* Jebb & Cheek.** It is the only Philippine species reported to be found in South Cotabato, Mindanao. It is like *N. saranganiensis* with a few differences (Table 1). This species can be nested within the Mindanao Clade, as supported by its morphology and distribution.

Palawan Clade

***Nepenthes abalata* Jebb & Cheek.** It can be found on Panay's Malalison Island, Antique and Culion, Palawan. *N. abalata* has a closer geographical and taxonomic relationship to *N. philippinensis*, which Cheek and Jebb restored from synonymy in 2001 (Cheek and Jebb, 2001). Even though both species live in the western Visayas, they do not appear to be sympatric. Both live at low elevations, lack a distinct petiole, have a midline area on the bottom surface of the lid that is free of typical glands (although *N. abalata* has a few larger perithecoid glands), and have no basal lid appendage. *N. abalata* may be nested within the Palawan clade.

***Nepenthes gantungensis* S.McPherson, Cervancia, Chi.C.Lee, Jaunzems, Mey & A.S.Rob.** It is the only Philippine species reported to be found on Mt. Gantung, Palawan (McPherson et al., 2010). In comparison to *N. deaniana* of the Palawan Clade, the inflorescence of *N. gantungensis* is usually much longer. There are also differences in pitcher morphology, with *N. gantungensis* having a more pronounced peristome. Whereas the lower pitchers of *N. deaniana* and *N. mira* may be reddish-purple all over, *N. gantungensis* does not have this dark pigmentation. Unlike its close relatives, it frequently produces upper pitchers.

Graciliflora Clade, Insignes Clade, and considerations for *N. campanulata*

***Nepenthes aenigma* Nuytemans, W.Suarez & Calaramo and *Nepenthes alzapana* Jebb & Cheek.** These are Luzon species distributed in Ilocos Norte and Mt. Alzapana in Tayabas respectively. The former was placed in a weakly defined Insignes group of Danser, in which *N. ventricosa* was confirmed to be part of the phylogenetically supported Insignes Clade of Murphy et al. (2020). In addition, *N. alzapana* has similar affinities with *N. aenigma* (Table 1) as reported by their authors. We suggest that both species can be potentially nested within the Insignes Clade.

***Nepenthes cabanae* Lagunday & V.B.Amoroso.** It was reported that *N. cabanae* is not a hybrid species because of its unique characters delineating it from others and has a stable population (Lagunday and Amoroso, 2019). Also, it is morphologically close to *N. surigaoensis* under sect. Insignes of Danser (1928) having sessile leaves unevenly clasping up to half of the stem that runs down the internode, four longitudinal nerves, subcylindrical lower pitchers, and a peristome with short triangular teeth not projecting beyond the margin (Cheek et al., 2018). These findings would suggest *N. cabanae* and *N. manobo* are placed together with *N. surigaoensis* under morphologically defined Insignes Clade of Murphy et al. (2020). From a geographical perspective, *N. cabanae* and *N. manobo* might

be nested within Mindanao Clade with a small probability, since both species are found in Pantaron Range, Mindanao although the latter was reported to occur in an ultramafic substrate, unlike the former.

***Nepenthes erucoides* A.S.Rob. & S.G.Zamudio.** It was discovered in Dinagat where *N. viridis* of Graciliflora Clade and *N. mindanaoensis* of Mindanao Clade were found. It can be understood that *N. erucoides* could be placed in either of the clades based on geographical distribution. In contrast, *N. erucoides* might also be placed in the Palawan Clade, morphology-wise. The species has an overall plant form similar to *N. mantalingajanensis* (a nested species in Palawan Clade) but differs in such a way that it has an indumentum that is long, hair rufous and dense, produces both upper and lower pitchers, pitcher shape urceolate to sub-campanulate, more fine peristome with small teeth through the inner margin, some partial peduncles and the rachis of male inflorescences produce very large bracts 8–15 mm long, and seeds lacking well-developed filaments (Robinson et al., 2019).

***Nepenthes leyte* Jebb & Cheek, *Nepenthes negros* Jebb & Cheek, and *Nepenthes samar* Jebb & Cheek.** The species' specific epithet is used as a noun in apposition to the island of that name, to which the species appears to be unique (Cheek and Jebb, 2013d; Cheek and Jebb, 2013f). For the exact geographical distribution of these species, see Table 1. Based on the geographical distribution patterns of species nested within the Graciliflora and Insignes clades of Murphy et al. (2020), the former clade appears to have nested species found in the Visayas and Dinagat, except for the widely distributed species, *N. alata* of Luzon. The latter consists of morphologically similar nested species found in three major island groups of the Philippines (i.e., *N. barcelonae* and *N. ventricosa* of Luzon, *N. burkei* and *N. sibuyanensis* of Visayas, and *N. bellii* and *N. surigaoensis* of Mindanao). We are confident that *N. leyte*, *N. negros*, and *N. samar* could be nested either within Graciliflora or Insignes.

***Nepenthes manobo* Lagunday, Acma, Cabana, Sabas & V.B.Amoroso.** Morphologically, *N. manobo* belongs to sect. Insignes (Cheek and Jebb, 2013f; Lagunday et al., 2017) and differs from *N. surigaoensis* in having 3 longitudinal nerves, sessile petiole clasping $\frac{1}{2}$ of stem diameter, lower pitcher having bulbous to ovate bottom half, cylindrical to the opening, upper pitcher having distinct hip, lid shape orbicular to ovate, and peristome inner margin with teeth-like projections that are short (Lagunday et al., 2017).

***Nepenthes maximoides* Cheek.** It is likely a part of the Graciliflora Clade since it was discovered on Mt. Banahaw, Luzon and it differs from *N. graciliflora* in terms of the upper pitcher, peristome, lid, and basal appendage (King & Cheek, 2020). A sample of *N. alata* sourced from Bontoc, Mountain Province, Luzon, and *N. graciliflora* from Sibuyan was placed in Graciliflora Clade (Murphy et al., 2020).

***Nepenthes ultra* Jebb & Cheek.** For geographical distribution and morphology of *N. ultra*, see Table 1. Having few similarities and differences to *N. alata*, *N. ultra* can most likely be nested within Graciliflora Clade.

***Nepenthes campanulata* Sh. Kurata.** It is a Borneo-endemic limestone specialist pitcher plant (Clarke et al., 2014). Additionally, the count of 61 total Philippine species from King & Cheek (2020) and Pelsner et al. (2020) list may include this species. In this paper, we consider *N. campanulata* as a Philippine species based on Clarke et al. (2014) report of *N. campanulata* sighting in Saint Paul, Palawan wherein groups of these pitcher plants from the limestone cliff formation are similar to Bornean population in terms of habitat niche, plant stature, habit, leaf form, bell-shaped pitchers, and short tendrils. According to Mullins (2000), the sampled *N. campanulata* was nested to Clade (F3), which includes a Philippine group (Clade F3a) and a big Bornean and Sulawesi group (F3c), although it is sister to a separate clade of Philippine and Bornean species in the nuclear tree (Clade D). Furthermore, Murphy et al. (2020) discovered no evidence of a close relationship between sect. *Insignes* and *N. campanulata*, contrary to claim of Clarke et al. (2018). The small Villosae Clade is more closely related to the major *Regiae* Clade, with *N. maxima* and its allies forming a subclade amid the other Bornean *Regiae* taxa (Murphy et al., 2020). The *Regiae* Clade is sister to the combined Palawan and Graciliflora Clades, which is sister to the Mindanao Clade and *N. campanulata* in their derived 177-supermatrix tree (Murphy et al., 2020). Therefore, Mullins' (2000) and Murphy et al.'s (2020) phylogenetic analyses tend to corroborate the report of Clarke et al. (2014) regarding the existence of *N. campanulata* in the Philippines, at least in Palawan. The Philippine *N. campanulata* is potential species within the Palawan clade based on geographical data presented by Clarke et al. (2014).

3.4 Distribution of Philippine *Nepenthes*

An updated distribution maps of Philippine *Nepenthes* were created. The map illustrates the distribution of species based on Murphy et al.'s molecular phylogeny of Nepenthaceae (See Figure 2 and 3).



Figure 1. Geographical distribution of 35 Philippine *Nepenthes* species with respect to their nested clades from Murphy et al. (2020) using angiosperms353 probe set.
Note: *N. sibuyanensis* location unknown is not included in this map.

LEGEND: ● Mindanao Clade
● Insignes Clade
● Palawan Clade
● Graciliflora Clade

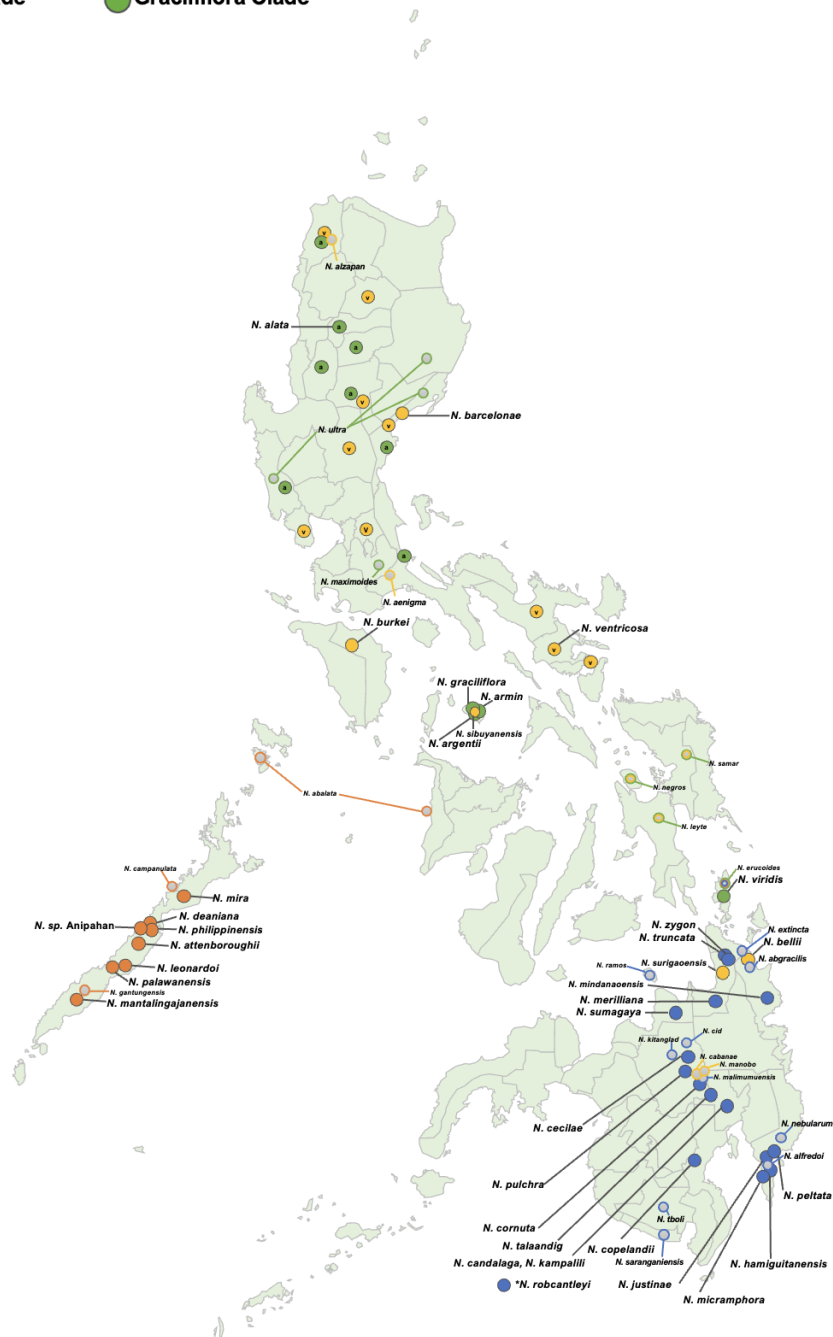


Figure 2. Geographical distribution of 61 Philippine *Nepenthes* species with respect to their nested clades from Murphy et al. (2020) using angiosperms353 probe set. Note: Unsampling species are represented by gray bordered circles and colored lines. These correspond to placement of these species to potential clades. Asterisk at the end of binomial name (*) indicate native/indigenous species. *Distribution data of *N. robantleyi* was not disclosed by taxonomic authors due to conservation concerns.

4.0 Conclusion

Phylogenetic analyses revealed evolutionary relationships between *Nepenthes* species and their ties to biogeographical ranges and morphological differences. Molecular markers and sequencing methods used in these analyses made use of either nuclear or plastid DNA, including 5S-NTS, chloroplast trnL-F intron, trnK intron,

PTR1 (peptide transferase 1), ITS nrDNA, and the angiosperms353 probe set. Previous studies left gaps due to limited sampling, markers with insufficient branching support, trees that could be interpreted differently, and sequencing issues. However, despite the problems with gene conflicts and variable tree interpretations, linkages are still identified, as indicated by the vast agreement between trees built by different approaches and datasets. Using DNA sequencing, most *Nepenthes* species were resolved into well-supported clades, providing novel topological information about lineage evolution.

Murphy et al. (2020) performed the most comprehensive phylogenomic analysis regarding the number of samples, DNA sequencing method and marker used (angiosperms353 probe set), tree construction, and interpretation of all studies addressed in this review. Using 35 recognized Philippine *Nepenthes* species, they revealed a large monophyletic Philippine Clade composed of Mindanao Clade, Palawan Clade, and Graciliflora Clade. The rest of the PH taxa not present in these clades were nested in the Insignes Clade. Although several Philippine species have yet to be sampled, it has been discovered that geographical distribution appears to be a better indication of Philippine species connections than morphology. In this review, we found 25 Philippine species that had never been sampled in any phylogenetic research and hypothetically assigned them to their possible clades formed from Murphy et al.'s tree (2020) using morphological characteristics and geographical distribution. Future studies should consider using molecular analyses to confirm clade placements and demonstrate stronger evolutionary links between Philippine taxa and the rest of the paleotropical species.

Phylogenetics is vital in conserving Philippine endemic plants since the intricate evolutionary history has resulted in a diverse flora with many relicts and derived traits. Phylogenetics based on sequence data explains relatedness patterns more accurately than previously available. When conservation biologists must decide which species to save from extinction, phylogenetics can help them make better choices. The benefits of phylogenetic analysis for plant conservation include clarification of taxonomic status, identification of unique evolutionary lineages, determination of relictual and recently derived species, determination of phylogenetic value for conservation priority setting, and identification of phylogenetically independent comparisons between rare and widespread species.

Because of the growing global biodiversity catastrophe, scientists must devise strategies for effectively allocating conservation efforts. Among these is the suggestion to include information on species' evolutionary relationships directly in the definition of biodiversity conservation priorities and policies. Tissue samples from previously unsampled taxa must be used in future phylogenetic analyses to confirm clade placements and demonstrate stronger evolutionary relationships between Philippine taxa and the rest of the paleotropical species. However, researchers will face numerous challenges due to the changing world, including threats to the species' survival. To name a few examples of human-caused environmental abuse, plant poaching, mining, deforestation, and land conversion for agricultural and industrial use are all threats to extinction.

5.0 Contributions of Authors

S. C. Brillo – conceptualizing, writing, and editing; J. J. D. Salamanes and E. S. Austria – commenting and supervising.

6.0 Funding

Pamantasan ng Lungsod ng Maynila funded the publication of this study.

7.0 Conflict of Interests

The author declares no conflict of interests.

8.0 Acknowledgment

The corresponding author would like to acknowledge Adamson University and Pamantasan ng Lungsod ng Maynila for their support.

9.0 References

- Alamsyah, F., & Ito, M. (2013). Phylogenetic analysis of Nepenthaceae, based on internal transcribed spacer nuclear ribosomal DNA sequences. *Acta Phytotaxonomica et Geobotanica*, (64), 113–126.
- Alejandro, G., Madulid, R., & Madulid, D. (2013). The utility of internal transcribed spacer (nrDNA) sequence data for phylogenetic reconstruction in endemic Philippine *Nepenthes* L. (Nepenthaceae). *Philippine Journal of Science*, (45), 99–110.
- Amoroso, V. B., Lagunday, N., Coritico, F., & Colong, R. (2013). *Nepenthes alfredoi* (Caryophyllales, Nepenthaceae), a new species of pitcher plant from Mindanao, Philippines. *Philippine Journal of Systematic Biology*, (11), 14–19.
- Barcelona, J., Nickrent, D., LaFrankie, J., Callado, J., & Pelsner, P. (2013). Co's digital flora of the Philippines: Plant identification and conservation through cybertaxonomy. *Philippine Journal of Science*, (142), 57–67.
- Berendsohn, W. (2017). Compilation of *Nepenthes* data for the Caryophyllales taxonomic backbone.

- Catalano, M. (2009). *Nepenthes. Growing carnivores – an Italian perspective* (pp. 50–57). Prague.
- Cheek, M., & Jebb, M. (2001). *Flora Malesiana – Nepentheaceae*. Series I, Volume (15).
- Cheek, M. (2011). *Nepenthes robcantleyi* sp. nov. (Nepentheaceae) from Mindanao, Philippines. *Nordic Journal of Botany*, (29)6, 677–681.
- Cheek, M., & Jebb, M. (2013a). Identification and typification of *Nepenthes blancoi*, with *N. abulata* sp. nov. from the western Visayas, Philippines. *Nordic Journal of Botany*, (31)2, 151–156.
- Cheek, M., & Jebb, M. (2013b). *Nepenthes alzapian* (Nepentheaceae), a new species from Luzon, Philippines. *Phytotaxa*, 100(1) 57–60. <http://dx.doi.org/10.11646/phytotaxa.100.1.6>
- Cheek, M., & Jebb, M. (2013c). *Nepenthes ramos* (Nepentheaceae), a new species from Mindanao, Philippines. *Willdenowia*, (43)(1), 107–111.
- Cheek, M., & Jebb, M. (2013d). *Nepenthes samar* (Nepentheaceae), a new species from Samar, Philippines. *Blumea*, (58)1, 82–84.
- Cheek, M., & Jebb, M. (2013e). *Nepenthes ultra* (Nepentheaceae), a new species from Luzon, Philippines. *Blumea*, (58) 241–244.
- Cheek, M., & Jebb, M. (2013f). Recircumscription of the *Nepenthes alata* group (Caryophyllales: Nepentheaceae), in the Philippines, with four new species. *European Journal of Taxonomy*, (69), 1–23. doi: <http://dx.doi.org/10.5852/ejt.2013.69>
- Cheek, M., & Jebb, M. (2013g). The *Nepenthes micramphora* (Nepentheaceae) group, with two new species from Mindanao, Philippines. *Phytotaxa*, (151)1, 25–34.
- Cheek, M., & Jebb, M. (2013h). Typification and redelimitation of *Nepenthes alata* with notes on the *N. alata* group, and *N. negros* sp. nov. from the Philippines. *Nordic Journal of Botany*, (31)5, 616–622.
- Cheek, M., & Jebb, M. (2014). Expansion of the *Nepenthes alata* group (Nepentheaceae), Philippines, and descriptions of three new species. *Blumea*, (59), 144–154.
- Cheek, M., & Jebb, M. (2015). *Nepenthes*, three new infrageneric names and lectotypifications. *Planta Carnivora*, (37), 34–42.
- Cheek, M., & Jebb, M. (2016a). A new section in *Nepenthes* (Nepentheaceae) and a new species from Sulawesi. *Blumea*, (61), 59–62.
- Cheek, M., & Jebb, M. (2016b). *Nepenthes* section *Phyrophytae*. *Planta Carnivora*, 38, 44–45.
- Cheek, M., Tandang, D., & Pelsner, P. (2015). *Nepenthes barcelonae* (Nepentheaceae), a new species from Luzon, Philippines. *Phytotaxa*, (222)(2), 145–150.
- Clarke, C. M. (1997). *Nepenthes of Borneo*. Natural History Publications (Borneo).
- Clarke, C. M. (2001). *Nepenthes of Sumatra and Peninsular Malaysia*. Natural History Publications (Borneo).
- Clarke, C., Lee, C., & Enar, V. (2014). Observations on the natural history and ecology of *Nepenthes campanulata*. *Carnivorous Plant Newsletter*, (43)(1), 7–13.
- Clarke, S., Moran, J., & Robinson, A. (2018). Systematics and Evolution of *Nepenthes*. OUP.
- Danser, B. (1928). The Nepentheaceae of the Netherlands Indies. *Bulletin du Jardin Botanique de Buitenzorg*, 249–438.
- Golos, M. (2012). Reassessing the phylogeny of *Nepenthes* (Nepentheaceae). Retrieved April 2021, from researchgate.net.
- Gronemeyer, T., Coritico, F., Micheler, M., Marwinski, D., Acil, R., & Amoroso, V. B. (2011). *Nepenthes ceciliae*, a new pitcher plant from Mount Kiamo, Mindanao. *McPherson, S. R., New Nepenthes*, (1), 312–324.
- Gronemeyer, T., Coritico, F., Wistuba, A., Marwinski, D., Gieray, T., Micheler, M., Mey, F. S., & Amoroso, V. B. (2014). Four new species of *Nepenthes* L. (Nepentheaceae) from the Central Mountains of Mindanao, Philippines. *Plants (Basel)*, (3)2, 284–303.
- Gronemeyer, T., Coritico, F., Wistuba, A., Marwinski, D., Gieray, T., Micheler, M., Mey, F. S., & Amoroso, V. B. (2016). Two new *Nepenthes* species from the Philippines and an emended description of *Nepenthes ramos*. *Plants*, (5)23.
- Gronemeyer, T., Wistuba, A., Heinrich, V. B., McPherson, S. R., Mey, F. S., & Amoroso, V. B. (2010). *Nepenthes hamiguitanensis* (Nepentheaceae), a new pitcher plant species from Mindanao Island. *Carnivorous Plants and Their Habitats*, (2), 1296–1305.
- Handayani, T. (2017). Flower morphology, floral development and insect visitors to flowers of *Nepenthes mirabilis*. *Biodiversitas*, 1624–1631.
- Heinrich, V. B., McPherson, S. R., Gronemeyer, T., & Amoroso, V. B. (2013). *Nepenthes micramphora* (Nepentheaceae), a new species of *Nepenthes* L. from southern Mindanao, Philippines. *Phytotaxa*, (151)1, 25–34.
- Heubl, G., Bringmann, G., & Meimberg, H. (2006). Molecular phylogeny and character evolution of carnivorous plant families in Caryophyllales – revisited. *Plant Biology*, 821–830.
- Jebb, M., & Cheek, M. (1997). A skeletal revision of *Nepenthes* (Nepentheaceae). *Blumea*, (42), 1–106.
- Johnson MG., Pokorny L, Dodsworth S, Botigüé LR., Cowan RS, Devault, A., Eisehardt WL, Epitawalage N, Forest F, Kim JT, Leebens-Mack JH, Leitch IJ, Maurin O, Soltis DE, Soltis PS, Wong GK, Baker WJ, Wickett NJ. (2018). A universal probe set for targeted sequencing of 353 nuclear genes from any flowering plant designed using k-mer medoids clustering. *Systematic Biology*. doi: <https://doi.org/10.1093/sysbio/syy086>.
- Johnson MG, Gardner EM, Liu Y, Medina R, Goffinet B, Shaw AJ, Zerega NJC, Wickett NJ. (2016). HybPiper: extracting coding sequence and introns for phylogenetics from high throughput sequencing reads using target enrichment. *Applications in Plant Sciences*. (4), 1600016. doi: <https://doi.org/10.3732/apps.1600016>
- King C, Cheek M. (2020) *Nepenthes maximoides* (Nepentheaceae) a new, critically endangered (possibly extinct) species in Sect. Alatae from Luzon, Philippines showing striking pitcher convergence with *N. maxima* (Sect. Regiae) of Indonesia. *PeerJ*. doi: 10.7717/peerj.9899
- Kurata S, Toyoshima. (1972a). *Nepenthes mirabilis* X *N. alata* Sh. Kurata and Toyoshima, a natural hybrid. *Gardens' Bulletin, Singapore*, (26), 157.
- Kurata S, Toyoshima. (1972b) *Nepenthes petiolata* X *N. alata* Sh. Kurata and Toyoshima, a natural hybrid. *Gardens' Bulletin, Singapore*, (26), 158.
- Lagunday NE, Amoroso, VB. (2019). *Nepenthes cabanae* (Caryophyllales, Nepentheaceae), a new species of pitcher plant from Central Mindanao, Philippines. *Philippine Journal of Systematic Biology*, doi: DOI 10.26757/pjsb2019a13005
- Lagunday N, Acma F, Cabana V, Sabas N, Amoroso VB. (2017). Two New *Nepenthes* Species from the Unexplored Mountains of Central Mindanao, Philippines. *Philippine Journal of Science*, (146)2, 159–165.
- Lagunday, N. E., Rosa, S. D., Cleofei, C. M. B., Jr, R. P., Coritico, F. P., & Amoroso, V. B. (2022). *Nepenthes candalaga* (Nepentheaceae), a new species from eastern Mindanao, Philippines. *Phytotaxa*, (554)3, 285–292. <https://doi.org/10.11646/phytotaxa.554.3.7>
- Lagunday, N. E., Yurong, A., & Amoroso, V. B. (2024). *Nepenthes kampalili* (Nepentheaceae), a new species of pitcher plant from the eastern mindanao biodiversity corridor, Philippines. *Phytotaxa*, (644)2, 163–170. doi: <https://doi.org/10.11646/phytotaxa.644.2.8>
- Lauffenburger, A. (1995). Guide to *Nepenthes* Hybrids. *OmnisTerra*
- Linnaeus C. (1737). *Nepenthes*. *Hortus Cliffortianus*.
- Mansell G, Suarez, W. (2016). *Nepenthes nebularum*, A New Species From Mindanao, Philippines. *Carnivorous Plants Newsletter*, (45)4, 130–139.
- McPherson SR. (2009a). Pitcher Plants of the Old World (1)
- McPherson SR. (2009b). Pitcher Plants of the Old World (2)
- McPherson SR, Bourke G, Cervancia J, Jaunzems M, Robinson AS, Fleischmann AS. (2011). *Nepenthes leonardoi* (Nepentheaceae), a new pitcher plant species from Palawan, Philippines. – *Carniflora Australis*; (8)1, 4–19
- McPherson SR, Cervancia J, Jaunzems M, Fleischmann AS, Mey FS, Gironella EP, Robinson AS. (2010). *Nepenthes palawanensis* (Nepentheaceae), a new pitcher plant species from Sultan Peak, Palawan Island, Philippines. in: McPherson, S. R., *Carnivorous plants and their habitats* (2); 1332–1339.
- McPherson SR, Cervancia J, Lee CC, Jaunzems M, Mey FS, Robinson AS. (2010) *Nepenthes gantungensis* (Nepentheaceae), a new pitcher plant species from Mount Gantung, Palawan, Philippines. in: McPherson, S. R., *Carnivorous Plants and their Habitats* (2); 1286–1295.
- Meiberg H, Heubl G. (2006). Introduction of a nuclear marker for phylogenetic analysis of Nepentheaceae. *Plant Biology*, doi: <https://doi.org/10.1055/s-2006-924676>
- Meimberg H, Wistuba A, Ditttrich P, Heubl G. (2001). Molecular Phylogeny of Nepentheaceae Based on Cladistic Analysis of Plastid trnK Intron Sequence Data. *Plant Biology*, (3), 164–175. doi: <https://doi.org/10.1055/s-2001-12897>
- Micheler M, Gronemeyer T, Wistuba A, Marwinski D, Suarez W, Amoroso VB. (2013). *Nepenthes viridis*, eine neue *Nepenthes* Art von der Insel Dinagat, Philippinen. *Das Taubblatt*, (76)2, 4–14
- Mullins JT. (2001). Molecular Systematics of Nepentheaceae. University of Reading; Retrieved from <https://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.271202>
- Murphy B, Forest F, Barraclough T, Rosindell J, Bellot S, Cowan R, ... Cheek, M. (2020). A phylogenomic analysis of *Nepenthes* (Nepentheaceae). *Molecular Phylogenetics and Evolution*, (144), 106668. doi: <https://doi.org/10.1016/j.ympev.2019.106668>
- Pelsner PB, Barcelona JF, Nickrent DL. (2021). *Nepentheaceae*. Retrieved June 10, 2021, from Co's Digital Flora of the Philippines: <https://www.philippineplants.org/Families/Nepentheaceae.html>
- Raven, PH, Axelrod, DI. (1974). Angiosperm biogeography and past continental movements. *Annals of the Missouri Botanical Garden*, (61)3, 539. doi: 10.2307/2395021
- Robinson AS, Zamudio SG, Caballero RB. (2019). *Nepenthes erucoides* (Nepentheaceae), an ultramaficolous micro-endemic from Dinagat Islands Province, northern Mindanao, Philippines. *Phytotaxa*; doi: <https://doi.org/10.11646/phytotaxa.423.1.3>
- Robinson AS, Fleischmann AS, McPherson SR, Heinrich VB, Gironella EP, Peña CQ. (2009). A spectacular new species of *Nepenthes* L. (Nepentheaceae) pitcher plant from central Palawan, Philippines. *Botanical Journal of the Linnean Society*, (159)2, 195–202
- Schwaller R, Raes N, de Boer HJ, Vos RA, van Vugt RR, Gravendeel B. (2016). Phylogenetic analysis of niche divergence reveals distinct evolutionary histories and climate change implications for tropical carnivorous pitcher plants. *Diversity and Distributions*, (22), 97–110. <https://doi.org/10.1111/ddi.12382>
- Thorogood CJ, Bauer U, Hiscock SJ. (2018). Convergent and divergent evolution in carnivorous pitcher plant traps. *New Phytologist*, (217), 1035–1041.

Towards An Integrated Structure and Agency Construction of Political Rights in the Philippines

Milrose Patawaran-Llenas*, Emmanuel D. Batoon

Graduate School, University of Santo Tomas, Manila, Philippines

*Corresponding Author Email: mpllenas@ust.edu.ph

Date received: June 12, 2024

Date revised: July 4, 2024

Date accepted: July 9, 2024

Originality: 97%

Grammarly Score: 99%

Similarity: 3%

Recommended citation:

Patawaran-Llenas, M., Batoon, E. (2024). Towards an integrated structure and agency construction of political rights in the Philippines. *Journal of Interdisciplinary Perspectives*, 2(8), 441-451.
<https://doi.org/10.69569/jip.2024.0302>

Abstract. Political rights in the Philippines continue to be a persistent societal challenge despite ongoing efforts across various sectors to address issues related to their protection. Human rights studies traditionally consider political rights inherent, yet disputes over their interpretation persist, suggesting that consensus depends on aligning definitions with universal human nature. This paper contends that political rights are socially constructed through historical processes involving diverse social structures and agents. Therefore, integrating structural and agential perspectives is crucial for establishing a common societal understanding of these rights. Drawing on social constructionism theories by Benjamin Gregg (2011), Peter Berger (1966), and Anthony Giddens' structuration theory (1984), this study explores how individuals' interactions within society and culture shape the conception of political human rights. An exploratory-sequential mixed-method approach was employed, combining qualitative documentary analysis and interviews to investigate how social structures and agents construct political rights. Quantitative data triangulation further enhanced the study's comprehensiveness and depth. Key findings underscore ongoing efforts to address political rights in the Philippines, highlighting the social nature of their understanding and the necessity for collaborative efforts among government and multiple sectors.

Keywords: Human rights; Political rights; Structure; Agency; Social construction; Social constructs.

1.0 Introduction

The study of human rights encompasses the entirety of human existence. It is fundamentally linked with dignity and founded on principles of equality and fairness that safeguard individual freedoms. Human rights issues persist in the Philippines as a longstanding social concern which is traceable from colonial periods to contemporary Philippine society. Indeed, the concepts of human freedom and equality have deep historical and political roots. The pre-colonial Philippine society was characterized by tribal interdependence where the governance structure of barangays led by chieftains or Datus, reflects early forms of social organization. It was characterized with strong emphasis on communal decision-making and adherence to customs and traditions (PhilRights, 2013; Mintz, 2006). The colonial era which was from Spanish exploration in 1521 through American rule until the Japanese occupation in 1941, and the subsequent post-World War II transitions have shaped Philippine political history profoundly. Issues of human rights became evident in these periods. Furthermore, the period following the 1946 establishment of the Philippine Republic was marked by efforts to address insurgency and human rights challenges. The most remarkable clamor in human rights protection and promotion was under the authoritarian rule of Ferdinand Marcos Sr. On September 21, 1972, Marcos Sr. declared Martial Law in the Philippines which resulted to unprecedented human rights violations in the country. The post-EDSA People Power Revolution 1986 ushered in a new phase of governance and established institutions like the Commission on Human Rights in the 1987 Constitution (CHR) which has been tasked with overseeing human rights protections in the Philippines (Philippine Constitution, 1987). The past administration of former President Rodrigo Duterte

created another challenging period in human rights promotion and protection in the country. His regime was marred by alleged massive human rights violations particularly with its implementation of War on Drugs. Recent assessments show that significant challenges persist despite extensive local and international efforts and documentation promoting human rights in the country. In fact, data from Philippine Human Rights Impact Assessment in December 2021 revealed that international indices consistently point to ongoing concerns such as internet freedom, rule of law, and press freedom (Freedom House, 2021; World Justice Project, 2021; Reporters Without Borders, 2021). Understanding and addressing these issues requires adherence to international norms and consideration of cultural, religious, and social contexts that influence local interpretations and practices related to human rights (UNESCO). In the Philippine society, there are divergent perspectives on human rights which are shaped by governmental structures which are focused on national interests and by the societal elements who advocate for individual liberties. This framework often led to conflicting approaches and policy debates which underscores the need for a unified understanding of human rights concepts across all sectors of society. Bridging these gaps requires an integrated approach that acknowledges both structural influences, such as state institutions, and agential forces, including civil society and advocacy groups, in shaping policies and practices that uphold political rights (Little, 2012; Giddens, 1984; Frolich & Potvin, 2010). The social construction of political rights can be seen as to how these rights as social constructs evolve. According to Berger and Luckmann (1966) social constructs evolve or change because they are created in certain institutions and by specific cultures which are dependent in social conditions such as economic, historical, and political conditions involving social interactions of people. The dialectic relations between structure and agency pertinent to this assumption are the primary focus of this study. The structures are believed to influence the autonomy of the agency while structures are maintained and adapted through the exercise of the agency (Kipo-Sunyezi, 2014; Chatterjee et al., 2019). This study aims to contribute to this understanding by examining the social construction of political rights in the Philippines through an integrated structural-agential framework. By exploring how these rights evolve within specific socio-political contexts, the research sought to inform policies and practices that enhance their protection and promotion in Philippine society.

2.0 Methodology

2.1 Research Design

An exploratory-sequential mixed method was employed to validate the argument empirically. Qualitative methods such as documentary analysis and interviews examined how social structures and agents construct political rights. Additionally, quantitative research was employed to triangulate the data, enhancing the findings' breadth and depth. The integration of qualitative and quantitative data was done in the data analysis aspect of the study. Data obtained from documentary research and interviews with key informants anchored on the research objectives were matched and analyzed thoroughly with the quantitative results obtained from the surveys conducted pertinent to the same objectives and questions of the study. The consistency of the findings proved invaluable in establishing the validity of the data. This entire process facilitated the mixed-method approach in the study's findings.

2.2 Research Locale

The study was conducted in Metro Manila, also known as the National Capital Region (NCR), recognized as a leading region in the Philippines. The area's diverse population, complex human rights issues, and concentration of government institutions contributed significantly to the depth and scope of the human rights study. The focus was on understanding the interactions between governmental structures and societal agents within this dynamic urban setting.

2.3 Research Participants

The study employed data triangulation through a survey method involving 50 respondents from the public, enhancing the depth and breadth of data on the social construction of political rights in the Philippines. Participants included individuals with expertise and/or experience in political rights, aged 18 years and above, regardless of gender, ethnicity, or social status. The structural sources involved participants from key government institutions: policymakers from the legislative branch of the Philippine Congress, units from the executive branch such as the Commission on Human Rights, and various levels of local government units, including barangays. Agential participants included non-state actors with extensive experience in political rights, such as mass media practitioners, human rights advocacy groups, non-governmental organizations, student leaders, and academics.

2.4 Data Gathering Procedure and Analysis

This study employed multiple methods for data collection: documentary research, interviews, and online data collection, aimed at triangulating findings. Documentary research involves analyzing written sources relevant to the study's focus. According to Ahmed (2010), this method is commonly used to investigate physical sources such as public and private documents. This study's documentary research encompassed human rights instruments, government policies, legislative enactments, articles, and newspaper accounts related to human rights issues and advocacy in the Philippines.

In-depth interviews with key informants were conducted onsite and online to explore the nature of human rights, political rights, and related issues based on their lived experiences. Structured interview guides and questionnaires, validated by the dissertation adviser and the Graduate School Research Ethics Committee, facilitated meaningful exploration of these topics.

Furthermore, online data collection methods were utilized for triangulation purposes. This involved administering an online survey to gather additional data sources via the Internet, complementing information obtained from physical survey forms and interviews. The same questionnaires used in onsite interviews were adapted into a Google Form for online survey distribution, allowing respondents to access and complete the survey remotely. The collected data underwent descriptive statistical analysis to derive insights relevant to the study's objectives.

2.5 Ethical Considerations

The study adhered strictly to the highest ethical standards due to its involvement with human subjects. All research methodologies were coordinated by university policies and guidelines, particularly concerning human subjects. Ethical considerations were guided primarily by recommendations from the University Ethics Review Committee. The researcher meticulously followed various protocols throughout the research process. These included obtaining permits and necessary documents from agencies and seeking approval and consent from key informants before conducting interviews or gathering data. Permission letters were drafted and submitted to relevant authorities following institutional policies and guidelines. Respect for individuals in positions of authority was consistently maintained. Participation in the study was voluntary, and key informants were requested to sign informed consent forms. Participants retained the right to withdraw from the study at any point for personal reasons, and their decisions were honored without question. The researcher ensured strict compliance with the Data Privacy Act and adhered to recommendations from the Ethics Review Board to safeguard the individuals involved in the research. Participants' real identities were protected through codes and pseudonyms, ensuring anonymity and privacy. Given the sensitive nature of human rights issues in the Philippines and their political and historical context, the researcher-maintained objectivity and impartiality to preserve the integrity of the information gathered and respect the beliefs and perspectives of participants. Pseudonyms, codes, or labels were employed consistently to shield participants' identities. To mitigate risks associated with the study, the confidentiality of information and data was paramount throughout every phase of the research process. These ethical measures were implemented to uphold the welfare and rights of all study participants.

3.0 Results and Discussion

3.1 Understanding Human Rights

Table 1 shows the research participants understanding of human rights as substantiated by the quote matrix. It is necessary to also delve on this aspect since political rights emanate for the very concept of human rights. The analysis yielded that key informants' understanding of human rights revolves around the following dominant ideas (Table 1) on the descriptions of human rights: (a) universal, (b) dignity of man, (c) God-given, (d) freedom, (e) justice, peace and protection (f) interdependent (g) social responsibility and (h) inherent. These ideas match with the quantitative results where the following dominant responses from the respondents emerged as freedom (14%), inherent (36%) and dignity of the person (10%).

Table 1. Quotation matrix of the conceptual understanding of human rights

Concepts	Quote Matrix
Rights are encompassing and universal	<i>There is an added discriminatory aspect when there is a privilege-meaning inclusiveness-but when you say human rights -those are encompassing -EA</i>
Pertains to the Dignity of man	<i>Human rights are an extension of human dignity-CD</i> <i>The heart of the Church's mission is to defend the dignity of every person-Archbishop Jose Advincula (CBCP News online)</i>
Rights are God-given	<i>So as a human being, man has the dignity given by the Creator, that he be in the likeness of God...He was created in the likeness of God-AI Phil</i> <i>we enjoy this rights not because the constitution give it to us, but these are God given rights,, not necessary in the constitution</i>
Freedom	<i>freedom from fear</i> <i>economic socio-cultural rights ay freedom from wants. -AIPHIL</i> <i>Rights are autonomies for the individual- Assoc.Justice Leonen (on Writ of Kalayaan)</i>
Justice Protection and Peace	<i>peace and order in the community-PHR</i>
Human Rights are interdependent	<i>human rights are indivisible, they are interconnected rights- political-civil-economic-social cultural-rights-PHR</i>
Social Responsibility	<i>Rights are part of our duties to each other, our communities and our societies=Assoc.Justice Leonen (document based)</i>
Human rights are inherent	<i>Human rights are part of human life-in real life rights are there. In everyday life- there are rightst. He eats-that's a right-a right to food</i> <i>He has a job, that is also a right</i> <i>He is part of the union, that is also a right - EA</i>

Table 2 shows the results of the data triangulation using quantitative data pertaining to the understanding of human rights.

Table 2. Descriptive analysis of the conceptual understanding of Human Rights

Concepts	Frequency	Percentage
Freedom	7	14%
Accorded by law, which protects people	1	4%
Basic Foundation of Life	1	2%
Consolidation of Rights	1	2%
Equality	4	8%
Fundamentally God-given	3	6%
Inherent to human beings	18	36%
Principle on how to treat others	1	4%
Protection of People	1	4%
Expression of the right to Live	1	2%
Dignity of the person	5	10%
Entitlement/ Privilege of an individual	3	6%
Guaranteed by Law	1	2%
Guiding principles on how to treat others properly	2	4%
For the protection of people	1	2%
Right to Defend oneself	1	2%
Right to Vote	1	2%
To develop ourselves/ our abilities	1	2%

Table 3 shows the participants' understanding of how human rights ideas are constructed among individuals. The initial ideas that surfaced from key informants in the interview conducted regarding institutions or sectors of society that shape the individual's ideas of human rights connect heavily with the responses gathered through the following quantitative results with the majority, i.e. 56% of the respondents, asserting that the education sector is very influential in terms of how human rights are learned by individuals, followed by media influence (38%) and home or family (22%). Understanding human rights is consistent in all data sources used in the study. Responses

such as the dignity of man, freedom, and inherent are descriptions of human rights that relate to the human rights theories initially discussed in this study. These are, in fact, reflective of how individuals value human rights aside from the mere awareness or knowledge of their existence in human lives. Another significant idea in the data set is the role of different sectors in learning human rights. The social interactions of individuals with different elements of society create knowledge and awareness of human rights. Though dominant sectors were identified from the data sources, the variety of responses, as shown in Table 3, strengthens that social processes are invaluable in constructing ideas about human rights that connect with the theories used in this study.

Table 3. Descriptive analysis of how human rights are learned

Concepts	Frequency	Percentage
advocacy groups/civil society organizations	6	(12%)
cultural norms	2	(4%)
democratic environment	1	(2%)
education/ school	28	(56%)
environment	2	(4%)
existing laws / legal system	4	(8%)
experiences of an individual	1	(2%)
formal institutions of the society	1	(2%)
home/family	11	(22%)
social interactions/friends	4	(8%)
Mass media/ Social Media/ internet	19	(38%)
through reading books	4	(8%)
barangay discussions	1	(2%)
discourse	1	(2%)
the conventional way of learning	1	(2%)
experiences of a person	1	(2%)

3.2 Social Construction of Political Rights

Using thematic analysis and MAXQDA, the data from the research participants' interviews were analyzed regarding their interpretation of political rights. The data obtained showed that the dominant understandings of political rights were social responsibility, participation in state affairs, and legal entitlement. These are the same concepts that emerged from the data triangulation employed to determine the respondents' understanding of political rights based on the survey results presented in Figure 1.

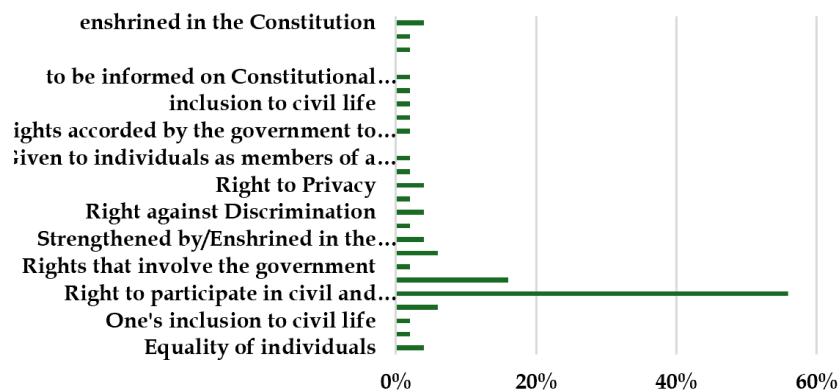


Figure 1. Respondents' understanding of political rights

Political rights are generally interpreted in the political landscape based on the ideas given by the research participants. Most respondents (Figure 1) connected political rights to the right to participate in civil and political affairs or activities of the state and society, which is also considered social responsibility. They are strongly associated with aspects of the right to vote or suffrage and ideas reflective of the state's role in terms of political rights enjoyment or realization.

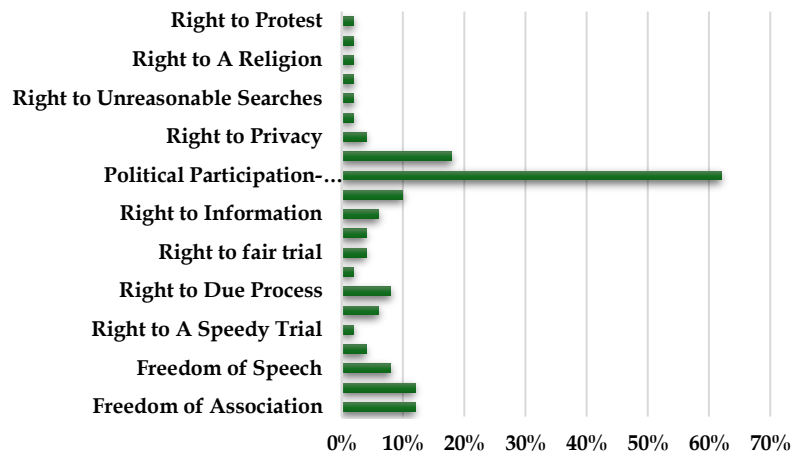


Figure 2. Different types of political rights

There is apparent awareness of the kinds of political rights identified by the respondents that are relevant to their interpretation of political rights. Those political rights shown in Figure 2 are consistent with the dominant interpretations yielded by the data presented in Figure 1, with suffrage/ election/right to vote as the dominantly identified political rights (62%). It must be noted that the notion of equality and justice is evident in the other rights identified by respondents, such as freedom of expression (12%) and freedom of association (12%). The data in Figure 2 also show that respondents view freedom of religion as relevant to political rights (20%), strengthening the concept that kinds of human rights are interrelated and indivisible. The interviews with key informants provided results similar to those of the survey. Political rights are seen as participatory, which dominantly pertains to the right to vote and freedom of speech and expression. Table 4 shows how political rights are socially constructed based on the ideas shared by key informants and other respondents.

Table 4. Quotation matrix of the social construction of political rights

Concepts	Quote Matrix
Education - Teachers - Curriculum/lessons - History - Immersive /actual engagements of students - Civics and Values Education	<i>That's why education is important...to have consciousness so that people have an idea about their political rights -ACT-JG</i> <i>Then, in school, of course, political rights are also learned, in values education, in civic education-MEDIA</i> <i>Based on the survey we conducted in 2020 with SWS, the educators are the most trusted in introducing human rights to people- CHR1</i>
Involvement in Community /student/youth organizing	<i>that's why organizing is a big help...not only inside the school... it's important, so that you can develop critical thinking and translate it into collective action. -CD</i>
Influence of Progressive political organizations	<i>The role played by different organizations, especially the political progressive organizations, is very important to inform our citizens from different sectors of society about their rights. ACT-JG</i>
Family Upbringing	<i>parents molding their children since they were young about sense of social justice because that includes teaching right or wrong, what is appropriate for you to give to others, what is the right justice, parents teach them to their children-MEDIA</i>
Teachings of the Church	<i>even the ten commandments don't lie, don't steal, things like ...those basic tenets of morality TFDP</i>

Actual engagement on advocacies	<i>our actual encounter with the laws..like the basic traffic laws. .as far as maybe complex issues, I think that can contribute to some of our knowledge of the political right- ACT-JG</i>
Legal Frameworks 1987 Philippine Constitution	<i>The Constitution Article 3 Bill Rights reflects the importance of political rights –the provisions addressed to state actors- CHR1</i>
Media/ social media	<i>The media or the social media are of great help in informing people about political rights or issues...just like the last election...the content...the campaigns -CHR2</i>

Delving on the meaningful lived experiences of the key informants, the data obtained in Table 4 show how political rights are socially constructed through the individuals' interactions with structures of the government and the various agencies of society. The data were consistent with the quantitative results as shown in Figure 3.

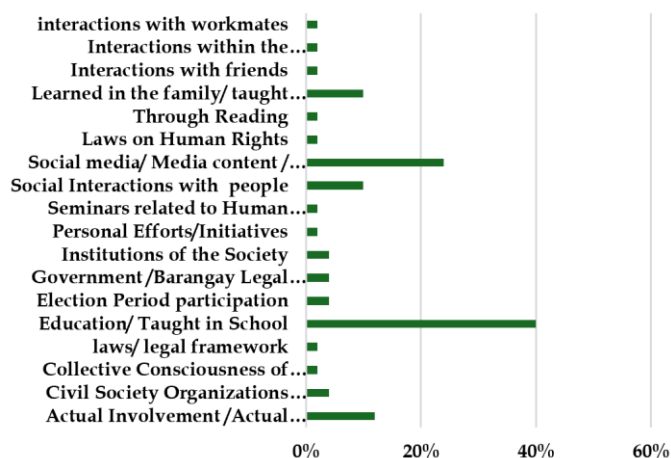


Figure 3. Social construction of political rights

The social construction of political rights transpires within the structures and agencies of society through the social interactions of individuals with one another and with the different social institutions that create the understanding of political rights. It is perceived to be greatly shaped by the education sector (40%), media platforms (24%), actual involvement in society (12%), social interactions (10%) and the role of the family (10%) as presented in Figure 3. These are consistent with the perspectives shared by key informants on how political rights are learned by individuals through identified sectors of society based on the data in Table 4, where education also emerged as the dominant sector that facilitates the social construction of political rights among members of society. This clearly shows the significance of different social institutions in developing awareness of political rights for every individual, i.e., from the personal sphere to the public sphere, political rights can be socially constructed. The message received from different sectors of society forms the basis and context of political rights among individuals. There are three aspects to be considered (Vinney, 2019) in social constructionism, namely: "(a) knowledge, which is the result of the interactions between the society and the individuals; (b) language, which shapes how individuals understand the society and (c) knowledge is politically driven". Berger (1966) theorized that social constructs can evolve because they are created in certain institutions and specific cultures. Anchored on these assertions, analysis, and synthesis of the gathered data of this study, it can be said that the message or knowledge individuals receive from both structures and agencies of society forms the basis and context of political rights among individuals that influence their social behaviours. The impact, thus, creates the knowledge and understanding of political rights, whether positive or negative. Data analysis shows that there are aspects that can be both within the domains of structures and agencies, such as education, which is the dominant sector identified by almost all participants and is reflected in various documents as the most influential in shaping awareness and understanding of political rights. On the other hand, there are elements confined to the government's structures, such as the

Commission on Human Rights, government policies, enactments, and other legal frameworks, which are also acknowledged by civil society that contribute to the understanding or awareness of human rights. The other agencies of society also shape people's awareness and understanding of political rights, such as the strong influence of media platforms, the teachings of the Church and the impact of progressive civil society organizations.

3.3 On Political Rights Situation

The analysis of the data as shown in Figure 4 pertaining to political issues currently taking place in the Philippine society reflect the status of political rights in the country with the numerous issues identified (24 issues). The diversity of issues cited in the study implies the complex political rights issues in the society which research participants perceive as political in nature and the need to analyze the role portrayed by the state. Dominant responses (Figure 4) as regard political rights issues in the Philippine society are red tagging (16%), curtailed freedom of speech (16%), correlated to attacks on journalists (10%); extrajudicial killings (10%) and corruption (10%). These are the same dominant issues perceived to be currently taking place in the Philippines based on the interviews conducted with human rights experts which actually depict a negative image of political rights status in the present society. This includes the controversial Executive Order No.70 or the Whole of Nation Approach to counter insurgency in the country, the Anti-Terrorism Act, and the creation of NTF ELCAC which research participants described as threats to promotion of human rights in the country.

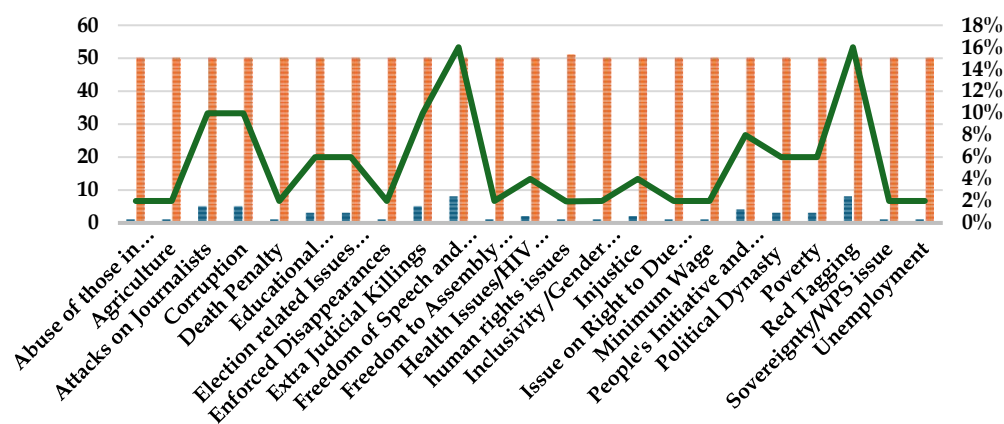


Figure 4. Political rights violations

The struggle towards upholding political rights in the country persists because of the continuing distinction between two social-political frameworks- the government's structures continue to adhere to and promote the National Security Doctrine-everything allegedly for the benefit of the state, i.e. to maintain peace and order by protecting, national security against its perceived enemies. On the other side is the democratic framework of civil society where the government is viewed as duty bearer and the citizens as rights holders. The joint analysis of qualitative and quantitative data on political rights situations and issues in contemporary Philippine society point at the following structural flaws allegedly disguised as national security blankets, namely- the Anti-Terrorism Act, Executive Order No. 70 and the establishment of National Task Force to End Local Communist Armed Conflict (NTF ELCAC) are perceived to have a chilling effect on democratic ideals. Failure of the state to fulfil its duties or responsibilities to its people pushes civil society to use its political rights to redress grievances through collective and progressive social movements, which the government eventually perceives as threats to national security. Thus, it is viewed as a shrinking civic space, especially for progressive political organizations. Freedom is curtailed, and voices are not heard as to redress grievances which the government sees otherwise, the adherence to the rule of law and the protection of national security from the threats of insurgents as one of its primary responsibilities.

Table 5 Joint analysis of qualitative and quantitative data on upholding political rights

Sectors	Course of Action	Quote Matrix
Education	Seminars and trainings for teachers and students on human rights	<i>Teachers really play a big role in developing the critical mind of students...of course I will go back and relearn my lessons from my teachers back then...religion, social studies...history.... PHR</i>
	Capacity training of teachers on Human Rights Education	<i>the basic thing that is really important there is education..to have consciousness so that people have an idea about their political rights..-ACT JG</i>
	Courses/ subjects on human rights	
	Inclusion of human rights in the curriculum More responsive and relevant curriculum on human rights in the Philippine context	<i>ideally it would be part of the curriculum from elementary school, it will be repeated in high school, it will be required in college, regardless of what course you take, we will understand our rights and the obligations of the government because in other countries it is part of the curriculum-A I Phil</i>
	Actual student participation on activities related to human rights study Immersive way of teaching human rights	<i>we only learn about him when we are involved in politics- either -directly or indirectly...EA</i>
	Teaching proper ways of engaging on human rights concerns	<i>When you said directly, you can be in the LGU or in the government...you can also be in civic work or humanitarian...so that's a challenge, so it's like we only know or realize human rights there-PHR</i>
Church	Strengthen call for social justice through preachings/sermon	<i>When you trace the development part of the social teachings, it really became, this is the guide, well of course we have the gospel...but the social doctrines, the social teachings are really strong guides for the hierarchy, lay people, members of the organization who are really engaged on human rights, workers rights, humans rights, protection of life, now we have environmental rights and Pope Francis is emphasizing it ... it is said there that the cry of the earth is the cry of the poor.- CD</i>
	Integrate human rights in preaching	<i>Of course, the church has been a big help, the Catholic and other churches that we can say have an appreciation for human rights. In particular, the Catholic Church has played a big role in developing social teachings because it gives appreciation from the very beginning. in recognizing the rights and dignity of workers. Basically, if you look at the teachings shared by the church, there are those things, basic rights, human rights. Basically, when you look at the teachings shared by the church, there are those things, basic rights, human rights. - A I Phil</i>
	Continued moral guidance-	<i>The institutional Church should be, for example, the Catholic Church being the largest , it should share teachings about human rights as a part of being human.. That's why I welcome Pope Francis' synodality that has a process to listen to ordinary citizens -EA</i>
	Join commercials/TV ads about human rights	
Mass Media/social media	Provide more informative programs on human rights/educational information on human rights	<i>"...to invest a lot of resources on good journalism and good reporting that could touch on the reporting of human rights issues. ...the upheaval of technology that has shaped people's preference" MEDIA FS</i>
	Expose human rights violations/ abuses Post educational content on human rights Stop spreading fake news/control fake news Raise awareness through content/programs Make creative/informative ads on human rights Reach out to younger generation	<i>"People have higher awareness of their political rights because of social media" CHR2</i>

NGOs/ Advocates	Collaborate with the government to strengthen human rights promotion and protection-planning and implementation	<i>Various organizations, especially the political progressive organizations, are doing a great job to inform our citizens from different sectors of society about their rights.</i>
	Continue peacefully with what it is presently doing Go to rural areas and teach people about their rights Community engagement and education Be the voice of those without voice	<i>I think this civil society is becoming an alternative space ACTJG</i>
Commission on Human Rights	Conduct seminars	<i>There are things in the structure that are working. Like The Commission on Human Rights, because mandated by the Constitution</i>
	Support advocacies that will be beneficial to all	<i>No matter who becomes president, nothing can be done, there is CHR..the participation court of the progressive groups of civil society- MEDIA-FS</i>
	Appreciation on the role of CHR as the conscience of the government	
	Continue with its programs and activities to promote human rights in the country	<i>CHR services and initiatives are anchored on Protection, Promotion, Prevention and Policy. -CHR2</i>

Table 5 shows the need to address political rights issues and the perceived ways by which they could be upheld. The primary responsibility emanates from the government which must collaborate with other sectors of society. Institutions considered influential in the social construction of human rights in general and political rights in particular are the same sectors identified as invaluable in upholding human rights in society, such as education, media, family, church, NGOs and the Commission on Human Rights.

3.5 Needs Arising from Political Rights Situation

The data gathered helped determine the needs arising from the political rights situation in the country. Analysed and categorized into two aspects, the agential needs are (a) social justice, (b) responsive and good governance, (c) participatory governance, and (d) rights-based development. On the other hand, the government system asserts (a) the rule of law, (b) peace and order, and (c) progress and development within the ambit of its authority and power. Asserting political rights comes from two vantage points- democratic ideals and national interest. Civil society asserts people's political rights in the context of the democratic system, and the government implements policies in the context of national interest. It must be emphasized that rights are not absolute and are coupled with responsibilities in the same manner that the state has moral and legal obligations to its people, particularly in terms of upholding their human rights. It can be said that the journey of promoting human rights in the country continues. Data shows the need to revisit, if not abolish, existing laws perceived to be detrimental to the flourishing of political rights in the country, such as the Anti-Terrorism Act, EO No.70 and the NTF _ELCAC. They remain the crucial points of contention of government and non-government sectors.

3.6 Structure-Agency Construction of Political Rights

The study points at how the integrated structures and agencies of society influence the individuals' construction of political rights. Documents analysed and data gathered also adhere to the significance of integrated response mechanisms from the structures and agencies of the society to address political rights issues. It must be mentioned that data from this study proves that both the government sector and the other agencies of society recognize and value the contribution of one another in this particular social issue. Table 5 identifies the course of action that sectors can take to uphold political rights in the country. The national government's right-based development agenda (2020-2022) report reflects the need for multi-sectoral participation and integration. As one research participant asserted that the government cannot do it alone, nor can one sector do it, the integrated structure agency approach is already operationalised in theory and in practice.

4.0 Conclusion

The struggle to uphold human rights in Philippine society is ongoing. Political rights are understood within the context of the political landscape, emphasizing participation in state affairs, suffrage, and freedom of speech and

expression. The social construction of political rights emerges from interactions among individuals, shaped by societal structures and agencies. Key influences on understanding and appreciating political rights include education, media, family, the church, and NGOs. These sectors are considered crucial in upholding political rights, with significant roles attributed to the state in their realization. The education sector is the most influential in shaping individuals' understanding and support of political rights. This highlights the necessity for a new legislation or sets of policy programs that institutionalize the teaching of human rights within the Philippine educational system. Integrating state power with the collective efforts of various societal agencies can enhance the promotion and protection of human rights through multisectoral approaches and a rights-based development agenda. This necessitates revisiting existing laws or amending policies, such as Executive Order No. 70, to address human rights broadly and political rights specifically. Such measures would ensure a more comprehensive and effective approach to human rights education and advocacy in the Philippines.

5.0 Contributions of Authors

The authors express their equal contribution in this work. The authors reviewed and approved the final version of this research output.

6.0 Funding

This work received no specific grant from any funding agency.

7.0 Conflict of Interests

All authors declare that they have no conflicts of interest

8.0 Acknowledgment

The authors would like to acknowledge the invaluable contributions of all the research participants who shared their time and knowledge to realise this study. Their insights and meaningful experiences on human rights in different contexts gave breadth and depth to this work. Above all, we are grateful to our Almighty God for this research output that its fruition glorifies His Goodness.

9.0 References

- Ahmed, J. (2010). Documentary Research Method: New Dimensions. *Indus Journal of Management & Social Science (IJMSS)*, 4, 1-14.
- Berger, P., & Luckmann, T. (1966). *The social construction of reality: A treatise in the sociology of knowledge*. New York: Anchor Books.
- Chatterjee, I., Kunwar, J., & Den Hond, F. (2019). Anthony Giddens and structuration theory. In S. Clegg, & M. Pina e Cunha (Eds.), *Management, Organizations and Contemporary Social Theory* (pp. 60-79). Routledge. <http://doi.org/10.4324/9780429279591-4>
- Frohlich, K. L., & Potvin, L. (2010). Commentary: Structure or agency? The importance of both for addressing social inequalities in health. *International Journal of Epidemiology*, 39(2), 378-379. <https://doi.org/10.1093/ije/dyp372>
- Gregg, B. (2012). *Human Rights as Social Construction*. Cambridge University Press. <https://doi.org/10.1017/CBO9781139059626>
- Human Rights Principles and Rights. (n.d.). Asia Pacific Human Rights Information Center Hurights Osaka, 15-32. https://www.hurights.or.jp/archives/other_publications/section1/pdf/Principles%2C%20Rights%2C%20Duty%20and%20Pedagogy.pdf
- Kipo-Sunyezi, D. (2014). Agency-Structure Relation in Social Sciences: Reflections on Policy Implementation. *Asian Social Science*, 10(2), 19-26. <http://doi.org/10.5539/ass.v10n2p18>
- Mintz, M. (2006). Crime and Punishment in Pre-Hispanic Philippine Society. *Intersections: Gender, History and Culture in the Asian Context*, (13). <http://intersections.anu.edu.au/issue13/mintz.html> (22.10.2010)
- Meta Response: Philippines Human Rights Impact Assessment. (2021, December). https://about.fb.com/wp-content/uploads/2021/12/Meta-Response_Philippines-Human-Rights-Impact-Assessment
- Mihr, A. (2012). *Towards a Human Rights Pedagogy*. Council of Europe Janusz Korczak Seminar on Education for Democracy, European Youth Centre, Strasbourg. <https://rm.coe.int/16802f9acd>
- PhilRights. (2013). From four nodes of history: The human rights challenge in the Philippine security sector. *Philippine Human Rights Information Center*, 1-104.
- Vinney, C., Dill-Shackleford, K. E., Plante, C. N., & Bartsch, A. (2019). Development and validation of a measure of popular media fan identity and its relationship to well-being. *Psychology of Popular Media Culture*, 8(3), 296-307. <https://doi.org/10.1037/ppm0000188>

Relationship Between Perceived Impulsive Buying Behavior and Allowances of Students

Gabriel Joseph C. Pascual, Andrea Ella Mae L. Ongchap, Alyssa Shannen O. Calacday,
Angel Anne Eumi O. Castillo, Rosanne Coleen B. Cuartero, Krixian Irish M. Rarang,
Jemish Marielle R. Retamal, Mary Vida L. Tumbali*
Univerisity of Santo Tomas – Senior High School, Manila, Philippines

*Corresponding Author Email: mltumbali@ust.edu.ph

Date received: June 6, 2024

Date revised: July 4, 2024

Date accepted: July 10, 2024

Originality: 93%

Grammarly Score: 99%

Similarity: 7%

Recommended citation:

Pascual, G.J., Ongchap, A.E.M., Calacday, A.S., Castillo, A.A.E., Cuartero, R.C., Rarang, K.I., Retamal, J.M., Tumbali, M.V. (2024). Relationship between perceived impulsive buying behavior and allowances of students. *Journal of Interdisciplinary Perspectives*, 2(8), 452-460. <https://doi.org/10.69569/jip.2024.0266>

Abstract. The rapid growth of technology has significantly influenced the purchasing behavior of Filipino consumers. Increased access to a wide range of products and services via online channels has diversified consumer buying patterns. This study explores the effects of online impulsive buying behavior on the allowances of Grade 12 ABM students in Manila within the context of prevalent online shopping. The researchers hypothesized that online impulsive buying behavior, influenced by price and distribution strategies, promotion, and product features, significantly impacts students' allowances. Using a quantitative approach and a self-designed survey questionnaire, the researchers collected and analyzed data using descriptive and inferential statistics, including Pearson's Correlation coefficient. The results indicate that impulsive buying behavior does affect the allowances of Grade 12 ABM students in Manila. However, these specific factors play a minimal role, suggesting the presence of other influential factors. These findings could inform strategies to manage impulsive buying behavior among students, contributing to the field of consumer behavior and psychology. Future research should analyze students' spending patterns to provide insights into effective budgeting strategies.

Keywords: Purchasing behavior; Online impulsive buying behavior; Students; Allowance; Manila.

1.0 Introduction

Allowance refers to the money the parents give their children for a particular time. Students budget this money by managing their finances (Labito & Supramono, 2017). Meanwhile, budgeting refers to grouping expenses into different categories and limiting each group's spending (Galperti, 2019). It is vital to think before acting, as it plays the most significant role in managing finances. Moreover, this allows one to plan how and where to spend money. People use this method to manage their finances and to achieve their financial goals. Furthermore, budgeting their allowances gives students more control over their spending and buying decisions (Labito & Supramono, 2017).

In terms of online buying, Sari et al. (2021) found out that online buying has become standard due to its convenience. Moreover, online purchasers receive benefits such as cashback and discounts. These things attract them to spend more but can also result in allowance problems. According to a study by Zulfaris (2020), students with a high level of financial proficiency are more likely to save because they know the significance of their reserved funds. Furthermore, this study stated that parents' guidance can also help establish the financial management of their children. People need money to survive; it allows them to buy necessities and basic needs. In addition, it prepares the youth for their future, strengthening the importance of proper budgeting of allowance.

However, budgeting allowances may sometimes be challenged when responding to wants. People may sometimes buy something due to the current heat or the pressure to do so without a valid reason for purchasing it. According to Kumar et al. (2016), impulsive buying is buying something without thinking about it thoroughly. It is reactive and emotional. However, it is essential to note that excessive buying is excluded from impulsive buying. As stated in Hawkins Stern's impulsive buying theory, price and distribution, needs/motivation, promotion strategies, service quality, outstanding shop displays, and product features are the factors that induce impulsive buying behavior (Carlson, 2021).

According to Haidi (2021), price is the most dominant factor that affects a consumer's buying decision. Moreover, the price can also positively influence their buying decision; as the price of a product goes lower, it can encourage them to purchase the product. Furthermore, one of the other factors is product distribution. Distribution refers to the process of the delivery of the product from the company to the consumers. This factor is a marketing strategy companies use to determine what products should be delivered and what medium/channel to provide those products. In addition, companies use promotion strategies to advertise their products to their consumers. This strategy is done by communicating to their consumers on different platforms. Through promotional activities, companies can gather data regarding what products positively impact their customers, which can also help them increase their sales (Haidi, 2021). Lastly, product features are one of the factors of impulsive buying, also known as product attributes, consisting of labels, packaging, colors, design, and product quality. Consumers use the information presented in the product feature to make purchasing decisions (Puspaningrum, 2018). Based on the different studies conducted, these factors show relationships to consumers' buying decisions and allowances. These factors can help shape the methodology, especially regarding how the questions would be formulated.

In light of the previous studies, limited studies discuss the relationship between impulsive buying behavior and allowance budgeting, especially in the Philippines, where many have indulged in purchases, particularly online. This study aimed to address this gap in the view of Accountancy, Business, and Management (ABM) students in one of the private universities in Manila. This study delved into how online impulsive buying behavior regarding price and distribution, promotion strategies, and product features relates to the allowances of Grade 12 ABM students in Manila. Furthermore, it explored how these factors affect the buying behavior itself. Lastly, it described its budgets and other aspects through the lens of Grade 12 ABM students.

2.0 Methodology

2.1 Research Design

The study utilized a quantitative data collection and analysis approach. The research design is descriptive correlational research, which tests the relationships between two variables using statistical data. Thus, the researchers investigated the relationship between impulsive buying behavior and the allowances of Grade 12 ABM students in Manila through descriptive correlational research.

2.2 Research Locale

The study was conducted in one of the top universities in Manila. This specific institution offers the ABM strand, which is the target audience of the researchers. With this, the researchers wanted to conduct their study with these students, considering this is one of their areas of expertise. However, the survey was conducted online through Google Forms because face-to-face interactions are still limited.

2.3 Research Participants

The researchers formulated and incorporated their questions into survey forms in this study. A senior high school in Manila has 213 ABM students of the Batch 2024 aged 18 and above. The researchers themselves gathered this information with the help of the school administration. However, only 138 students aged 18 and above were given the questionnaires. The number of respondents is calculated using the Raosoft online sample size calculator, where the total population is 213, with a confidence level of 95% and a margin of error of 5%. According to a study conducted by Ahmat et al. (2018), they utilized Raosoft to calculate the sample size from a population of 764 students, which resulted in 256 students, with a 95% confidence level and a margin error of 5%. This study further proves that Raosoft is a reliable sample size calculator. Students from the said strand are inclined to take business and monetary lessons, which give them more knowledge about money. The respondents were recruited through simple random sampling. The only thing in common was that they were Grade 12 ABM students in Manila, all

chosen randomly. After identifying the population, the researchers utilized the Wheel of Names randomizer to determine the respondents. The Wheel of Names is a randomizer tool that provides randomly selected names from a list of names. As per the study of Sajri et al. (2022), which uses the random sampling technique, they utilized the Wheel of Names software to select their samples. This further established the reliability and validity of the said randomizer software.

2.4 Research Instrument

This study utilized a self-made survey questionnaire, validated by an expert in the field and given to the respondents online via Google Forms. The researchers decided upon this mode of data collection as face-to-face interactions with respondents are limited so that the respondents can be easily reached through online survey forms. The said survey questionnaire contains a total of 29 questions covering the two variables of the study: impulsive buying behavior and allowance. The division of questions are as follows: two (2) for Demographic, four (4) for allowance, and twenty-three (23) for online impulsive buying behavior, precisely seven (7) in general, three (3) for the price, three (3) for distribution strategies, six (6) for promotion strategies, and four (4) for product features. The survey questionnaire made use of closed-ended questions as well as yes or no questions.

2.5 Data Gathering Procedure

Before gathering data, the researchers acquired a clearance from the university's research ethics committee. A permit to survey the respondents must be obtained to push through with the data collection. The data were collected from January – March 2024. A validator, an expert in this field, has validated these questionnaires. Once validated, it was prepared to be sent to the respondents on a given day, and a deadline was set to close off the survey. When the questionnaires were disseminated, the researchers coordinated with each block president to ensure that each block had received the questionnaires and fulfilled the required number of responses. After the survey was closed, the researchers organized the data in preparation for data treatment.

2.6 Ethical Considerations

This research study followed ethical guidelines. The collected data were securely stored on Google Drive, specifically a shared drive designated for research endeavors and the personal laptop of the corresponding researcher. Rigorous security measures were implemented, such as configuring restricted settings to grant access solely to authorized researchers, ensuring the confidentiality and integrity of the stored information, and the password for the folder housing the data remains strictly within their control. This precaution ensured that the data remained accessible in case of necessary revisions or further insights to be explored. The data gathered were strictly utilized to complete the current study and will not be used for irrelevant or unrelated purposes. The obtained data remained accessible for the investigators until the completion of the study; as part of the researchers' commitment to data privacy and compliance with ethical standards, all collected data will be systematically and permanently deleted from the storage locations and Google Drive two (2) years from the commencement of the study.

Since this study was behavioral, there was a psychological impact on the respondents. Thus, the informed consent form disseminated to the respondents contained the foreseeable risks and outcomes of the survey. These psychological risks may include guilt, shame, and social comparison. Moreover, reflecting on their buying behavior may cause emotional distress due to overthinking their motivation and attitude. Participation in this study was voluntary, and the respondents were not obligated to participate. The research team fully respected the participants' rights, and participants have the right to withdraw from the study at any moment if they experience discomfort or worry. Lastly, The study results may be presented at a conference or published in an academic journal. However, the respondents' identities will remain private and confidential.

3.0 Results and Discussion

3.1 Students' Profile

Table 1 presents the age profile of Grade 12 ABM students in Manila. Results showed that the majority, or 82.1% of the total respondents, were 18 years old, with a frequency of 115, while the remaining 17.9% were 19 years old and above, with a frequency of 25. This result agrees with SHS students' generally accepted age range, which is 16 - 18 years old (Macha et al., 2018). The study's limitation of only having grade 12 students resulted in most 18-year-olds, with a few aged 19 and above.

Table 1. Age distribution

Age	Frequency	Percentage
18 years old	115	82.1
19 years old and up	25	17.9

Table 2 presents the profile of the Grade 12 ABM students in Manila regarding their monthly allowance. Results showed that the majority, or 40.7% of the total respondents, have an allowance ranging from Php 4,001 and above with a frequency of 57. In contrast, the minority, or 15% of the total respondents, have an allowance ranging from Php 3,001 to Php 4,000 with a frequency of 21.

Table 2. Monthly allowance distribution

Monthly Allowance	Frequency	Percentage
Below PhP2,000.00	25	17.9
PhP2,001.00 to PhP3,000.00	37	26.4
PhP3,001.00 to PhP4,000.00	21	15.0
PhP4,001.00 and above	57	40.7

Table 3 shows that 28 (20%) of the respondents use above 75% of their total allowance, 52 (37.1%) spend in the range of 50% to 75%, 34 (24.3%) spend in the range of 25% to 50%, and 26 (18.6%) spend 25% of their allowance on impulsive purchases. This indicates that most respondents spend approximately 50% to 75% of their monthly allowances on impulse purchases.

Table 3. Allowance spent on impulse buying

Percentage of Monthly Allowance Used	Frequency	Percentage
Above 75% of total allowance	28	20
Between 50% and 75% of total allowance	52	37.1
Between 25% and 50% of total allowance	34	24.3
Below 25% of total allowance	26	18.6

3.2 Impulse Buying Behavior

Figure 1 shows that 86.4% of the respondents answered that they engaged in impulse buying, and 7.1% answered that they did not. Lastly, 6.4% are still determining if they participate in the act. It is concluded that most respondents know that they engage in impulse buying. The results are close to the study of Barcelona et al., 2022, which concluded that Generation Z (which the respondents belong to) engage in impulsive buying.

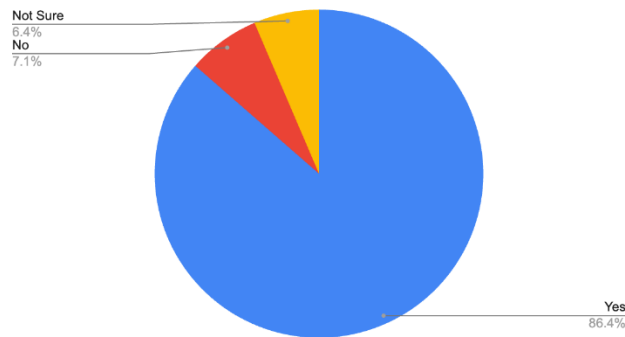
**Figure 1.** Impulsive buying behavior response

Figure 2 shows that 46.4% of the respondents are more inclined to buy products online due to the cheaper pricing compared to physical outlets, and 42.1% strongly agree. However, 10% of the respondents disagree, and 1.4% strongly do not buy products online because of their lower prices. Based on a study by Haidi (2021), the price can positively influence their buying decision; as the price of a product goes lower, it can encourage them to purchase the product, which is a clear indication of the results of the figure below.

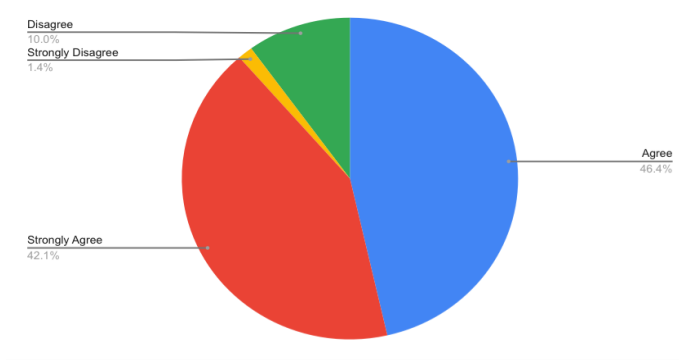


Figure 2. Inclination to buy products online due to cheaper pricing

Figure 3 shows that 49.3% agree and 40% strongly agree that they experience negative effects on their allowances due to price factors. On the other hand, 9.3% voted that they disagreed, and 1.4% strongly disagreed with the statement. This indicates that most of the respondents' allowances agree that they are affected negatively when making impulse purchases due to their purchase price. This is similar to the study of Akash (2021), wherein consumers tend to spend higher values when sellers apply pricing strategies such as discount pricing, bundle pricing, or psychological pricing.

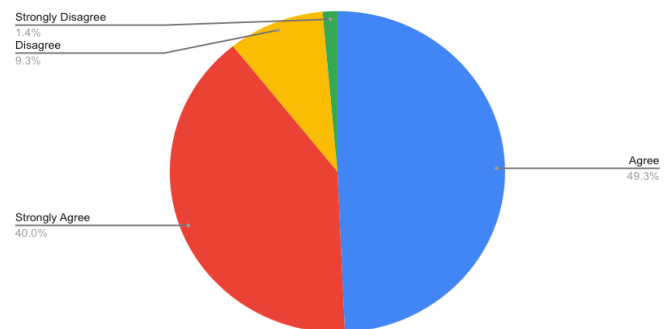


Figure 3. Effect of Price as a Factor of impulse buying on the budgeted allowance

Figure 4 illustrates that 19.3% of the respondents strongly agree, and 50% agree that their budget allowance is affected negatively in making impulsive purchases due to distribution. While 27.9% disagree and 2.9% strongly disagree with it. This data indicates that distribution negatively affects most respondents' allowances when making impulsive purchases. This clearly indicates that Carlson's (2022) study that stated distribution influences consumers' observing impulsive buying behavior is evident in the figure below.

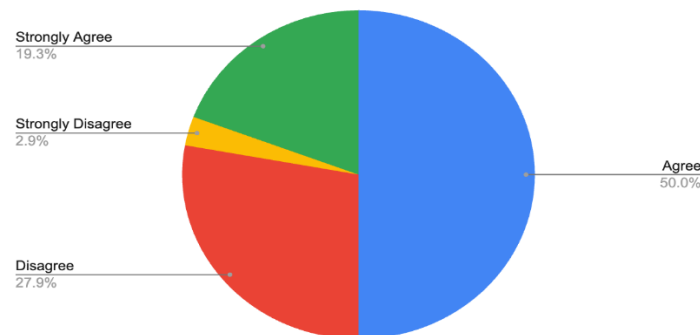


Figure 4. Effect of Distribution as a Factor of impulse buying on the budgeted allowance

Figure 5 shows that 47.9% of the respondents agree that product promotion results in impulse buying, negatively affecting their budgeted allowance, and 31.4% strongly agree. On the other hand, 18.6% disagree that product promotion has anything to do with their impulse buying that negatively impacts their budgeted allowance, while 2.1% strongly disagree. Pandey and Parmar's (2019) findings indicate that sales promotion schemes influence consumers' online shopping behaviour. This study is relevantly seen in Figure 5.

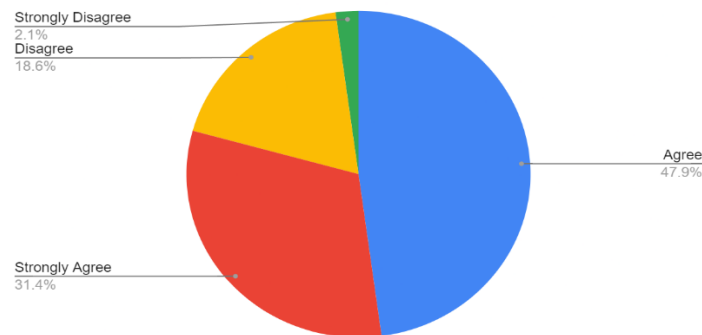


Figure 5. Effect of Product Promotion as a Factor of impulse buying on the budgeted allowance

Figure 6 shows that 50.7% of the respondents agree, and 36.4% strongly agree that product features negatively affect their budgeted allowances. Alternatively, 10% disagree with the statement, and 2.9% strongly disagree. This implies that most respondents agree that their budgeted allowances are negatively affected when product features influence impulse purchases. As stated in Hawkins Stern's impulsive buying theory, product features are one of the factors that induce impulsive buying behavior (Carlson, 2021), which accepts the results of Figure 6.

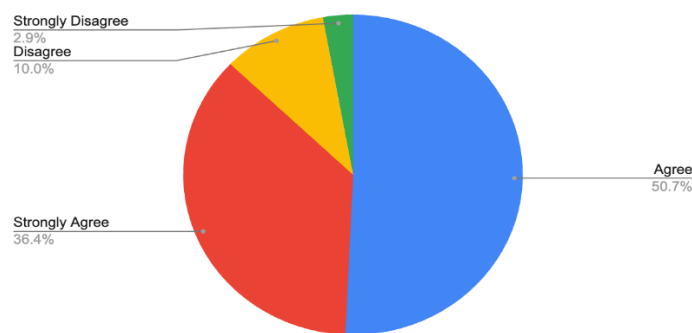


Figure 6. Effect of Product Features as a Factor of impulse buying on the budgeted allowance

3.3 Relationship Between Variables

Table 4 analyzes the relationship between price and online impulsive buying behavior of Grade 12 ABM students in Manila.

Table 4. Analysis of the relationship between impulsive buying behavior and price

Variables	R-value	Description	p-value	Alpha	Decision	Remarks
Impulsive Buying Behavior and Price	0.344	Direct Low Relationship	.000	0.05	Reject Ho ₁	Significant

Results revealed a direct low relationship between the two variables ($r=.344$). Furthermore, it revealed statistically significant evidence to reject the first null hypothesis ($p<.05$), which implied that a significant relationship exists between price and online impulsive buying behavior of Grade 12 ABM students in Manila. It can be concluded that the impulsive buying behavior of the students is lowly related to the price of the products. Table 4 aligns with

the findings of Zhou and Gu (2015), who studied how prices are presented and can influence impulsive buying behavior.

Table 5 examines the relationship between distribution strategies and online impulsive buying behavior of Grade 12 ABM students in Manila.

Table 5. Analysis of the relationship between impulsive buying behavior and distribution strategies

Variables	R-value	Description	p-value	Alpha	Decision	Remarks
Impulsive Buying Behavior and Distribution Strategies	0.363	Direct Low Relationship	0.000	0.05	Reject Ho ₂	Significant

Results revealed a direct low relationship between the two variables ($r=.363$). Furthermore, it revealed statistically significant evidence to reject the second null hypothesis ($p<.05$), which implied a significant relationship between distribution strategies and online impulsive buying behavior of Grade 12 ABM students in Manila. The impulsive buying behavior of the students is closely related to the companies' distribution strategies for their products. This coincides with the findings of Zhang et al. (2023), which explored price effects on impulsive buying decisions and accepted the results in Table 5.

Table 6 analyzes the relationship between promotion strategies and online impulsive buying behavior of Grade 12 ABM students in Manila.

Table 6. Analysis of the relationship between impulsive buying behavior and promotion strategies

Variables	R-value	Description	p-value	Alpha	Decision	Remarks
Impulsive Buying Behavior and Promotion Strategies	0.346	Direct Low Relationship	0.000	0.05	Reject Ho ₃	Significant

Results revealed a direct low relationship between the two variables ($r=.346$). Furthermore, it revealed statistically significant evidence to reject the third null hypothesis ($p<.05$), which implied a significant relationship exists between promotion strategies and online impulsive buying behavior of Grade 12 ABM students in Manila. This indicates a connection between promotional strategies and impulsive buying, which was concluded in the study by Hasim (2018) on the influence of sales promotions in Malaysia. Therefore, it can be concluded that the impulsive buying behavior of the students is lowly related to the companies' promotional strategies for their respective products.

Table 7 assesses the relationship between product features and online impulsive buying behavior of Grade 12 ABM students in Manila.

Table 7. Analysis of the relationship between impulsive buying behavior and product features

Variables	R-value	Description	p-value	Alpha	Decision	Remarks
Impulsive Buying Behavior and Product Features	0.263	Direct Low Relationship	0.000	0.05	Reject Ho ₄	Significant

Results revealed a direct low relationship between the two variables ($r=.263$). Furthermore, it revealed statistically significant evidence to reject the last null hypothesis ($p<.05$), which implied that a significant relationship exists between product features and online impulsive buying behavior of Grade 12 ABM students in Manila. Based on the study of Ahmad et al. (2023), the relationship between product features and online impulsive buying behavior among students was stated. Their findings show a weak positive correlation, indicating that product features influence impulsive buying but do not make a primary factor. Therefore, it can be concluded that the impulsive buying behavior of the students is lowly related to product features.

4.0 Conclusion

Impulsive buying behavior regarding price and distribution, promotion strategies, and product features significantly affects the allowances of Grade 12 ABM students in Manila. Additionally, these students also perceive that impulse buying negatively affects their allowances. Impulse buying behavior is prevalent among Grade 12 ABM students in Manila and is more dominant among females than males. Furthermore, these

students are mostly 18 years old, but these may be attributed to ethical considerations of having persons of legal age participate in this study. Senior high school students in Manila mostly have allowances above the PhP4,000.00 bracket, which can be because many of them live in dormitories, hence the high threshold. The study also concluded that most students spend 50 - 75% of their allowances on impulse purchases, and most depend only on their allowances.

Impulsive buying behavior and price and distribution strategies have a low correlation; therefore, price marginally affects the impulsive buying behavior of Grade 12 ABM students in Manila. Distribution strategies also have a low correlation with impulsive buying behavior, with their effect only being minimal. Additionally, impulsive buying behavior and promotion strategies have a low correlation, suggesting that although price contributes to the impulsive buying tendencies of Grade 12 ABM students in Manila, it only plays a small role. Moreover, impulsive buying behavior and product features have a low correlation, concluding that product features affect the impulsive buying behavior of Grade 12 ABM students in Manila but only to a minimal degree. Lastly, price and distribution strategies, promotion strategies, and product features affect the impulsive buying behavior of Grade 12 ABM students in Manila. Still, there is no significant effect from any of the aforementioned factors. It can be concluded that many factors can influence these students' impulsive buying behavior and are not limited to the previously mentioned factors.

This study revealed the relationship between the factors of online impulsive buying and the allowance of Grade 12 students. The results showed that certain factors hurt the students' allowance. Thus, future researchers should investigate other factors of online impulsive buying, such as the physiological effect and the influence of gender on the decisions made by Grade 12 ABM students, to show the long-term effects on allowances. Furthermore, analyzing the students' spending patterns can provide insights into the most effective way to budget their finances. Future studies could investigate the students' spending behavior using qualitative research design such as a focus group discussion (FDG). This research design will contribute to an in-depth understanding of their budgeting techniques and how they prioritize their expenses. Moreover, qualitative research would offer a deeper understanding of how students' lifestyles and spending habits contribute to their impulsive buying behavior.

Future researchers can choose a wider sample size since this study was conducted within a small local area. A similar study can be done with a broader location to gain more respondents and results. This analysis can further elaborate on how the factors of impulsive buying greatly influence gender. Moreover, when choosing a broader location, the range of the student's allowance will be more extensive, which can help determine whether there is a difference between students' lower and higher allowances for their impulsive decisions.

5.0 Contributions of Authors

Alyssa Shannen O. Calacday	Acknowledgements, List of Figures, Tables, and Appendices, Scope and Limitations, Review of Related Literature, Synthesis, Data Gathering Procedure, Ethical Consideration, Summary of Findings, Letter to Validator, Research Instrument, Informed Consent Form, General Revisions
Angel Anne Eumi O. Castillo	Background of the Study, Definition of Terms, Review of Related Literature, Research Locale, Results and Discussion, Informed Consent Form
Rosanne Coleen B. Cuartero	Suggested the Research Topic, Definition of Terms, Significance of the Study, Review of Related Literature, Results and Discussion, Itemized Budget
Andrea Ella Mae L. Ongchap	Corresponding Researcher, Background of the Study, Objectives of the Study, Review of Related Literature, Population and Sampling, Respondents, Recommendation, Research Instrument, Informed Consent Form, Timetable, General Revisions
Gabriel Joseph C. Pascual	Leader, Abstract, Background of the Study, Statement of the Problem, Objectives of the Study, Hypothesis, Review of Related Literature, Synthesis, Theoretical Framework, Research Design, Instrumentation, Treatment of Data, Conclusions, Research Instrument, Formatting of Research Instrument, Timetable, General Revisions and Formatting
Krixian Irish M. Rarang	Conceptual Framework, Review of Related Literature, Instrumentation, Results and Discussion, Verification of information across document, Revisions of the aforementioned parts
Jemish Marielle R. Retamal	Scope and Limitations, Review of Related Literature, Definition of Terms, Informed Consent form, Conceptual Framework, Respondents, Results and Discussion
Mary Vida L. Tumbali	Adviser, Checking, Revisions, Evaluation

6.0 Funding

The author(s) disclosed no receipt of the following financial support for this article's research, authorship, and publication. The authors solely support the study.

7.0 Conflict of Interests

The authors have no conflicts of interest to declare. All authors have seen and agree with the manuscript's contents, and there is no financial interest to report. We certify that the submission is original work and is not under review at any other publication.

8.0 Acknowledgment

The researchers would like to express their wholehearted gratitude to the people who provided personal and professional support for this study. Completing this research was only possible with the help and assistance of these respected individuals. The researchers express their sincere gratitude and appreciation to those who provided invaluable personal and professional assistance throughout this study. Without the unwavering support of these esteemed individuals, the successful completion of this research would not have been possible.

9.0 References

- Ahmad, S. S., Zakaria, A., & Husin, T. (2023). Impulse Buying Behavior In Higher Education: Unraveling The Influence Of Situational Factors. *Advanced International Journal Of Business, Entrepreneurship And SME's*, 5(17), 61–70. <https://doi.org/10.35631/aijbes.517006>
- Ahmat, S. N., Muda, M. R., & Neoh, C. F. (2018). Self-Esteem Level and Its Relationship to Academic Performance among Undergraduate Pharmacy Students in a Malaysian Public University. *Indian Journal of Pharmaceutical Education and Research*, Volume 52. doi : 10.5530/ijper.52.2.21.
- Akash, M. (2021) Effects Of Pricing On Consumer Buying Decisions Among Major Supermarkets In Nairobi County, Kenya. Chandaria School of Business in Partial Fulfillment of the Requirement for the Degree of Masters in Business Administration (MBA) <https://www.studocu.com/in/document/assam-don-bosco-university/managerial-economics/mehta-akash-mba-2021/42593427>
- Barcelona ,A.B. , Angeles R.G. , Clemente,C.A. , Dela Cruz, S.B. , Maliban,R.O. , Santos,J.G. , Tan,J.D. (2022). #Budolfinds: The Role of TikTok's Shopee Finds' Videos in the Impulsive Buying Behavior of Generation Z Consumers. <https://doi.org/10.11594/ijmaber.03.11.18>
- Carlson, D. J. (2021). Hawkins & Stern's impulse buying theory. *LinkedIn*. <https://www.linkedin.com/pulse/hawkins-stern-impulsebuying-theory-d-john-carlson/>
- Galperti, S. (2019). A theory of personal budgeting. *Teaching Economics*, 22(2), 117-130. doi: 10.3982/TE2881
- Hadi, A. S. (2021). The influence of product attribute, promotion mix, distribution channel, and price toward repurchase intention on iPhone. *Asian Management and Business Review*, 95-104. doi: 10.20885/AMBR
- Hasim, M. A., Shabi, K. S., Shamsudin, M. F., & Ali, A. M. (2018). The Relationship between Sales Promotions and Online Impulse Buying in Malaysia. *Opcion*, 34(16), 295-308.
- Kumar, A., Bezawada, R., Rishika, R., Janakiraman, R., & Kannan, P. K. (2016). From Social to Sale: The Effects of Firm-Generated Content in Social Media on Customer Behavior. *Journal of Marketing*, 80(1), 7–25. doi: 10.1509/jm.14.0249
- Labito, A. M., & Supraromo. (2017). Can Allowance, Personal Budgeting and Self Control as Mediating Role Manage Compulsive Buying Behavior Among College Students? *International Journal of Social Sciences & Educational Studies*, 4(3), 1-10. doi: 10.23918/ijsses.v4i3p1
- Pandey, A. & Parmar, J. S. (2019). Exploring Demographic Differences in Consumer's Online Shopping Behavioural Intention. *Seshadripuram Journal of Social Sciences (SJSS)*. <https://srf.set.edu.in/downloads/journal-issue/2021-SJSS-VOL-3-ISSUE-1.pdf#page=8>
- Puspaningrum, A. (2018). Hypermarket customer loyalty: Product attributes and image mediated by value and customer satisfaction. *Journal of Business and Retail Management Research*, 13(2), 84-97. doi: 10.24052/JBRMR/V13IS02/ART-08
- Sajri, N. A. A., Mohtar, L. E., & Ramly, R. (2022). Development and Usability of JUQUANJI Game in Quantum Theory of Light Among Pre-Service Physics Teacher. *Journal of Physics: Conference Series*. doi: 10.1088/1742-6596/2309/1/012083
- Sari, R., Utama, S., & Zairina, A. (2021). The Effect of Online Shopping and E-Wallet on Consumer Impulse Buying. *Asia-Pacific Management and Business Application*, 9 (3) 231-242. doi: 10.21776/ub.apmba.2021.009.03.3
- Zhang, Z., Zhang, N., & Wang, J. (2022). The Influencing Factors on Impulse Buying Behavior of Consumers under the Mode of Hunger Marketing in Live Commerce. *Sustainability*, 14(4), 2122. <https://doi.org/10.3390/su14042122>
- Zhou, H., & Gu, Z. (2015). The effect of different price presentations on consumer impulse buying behavior: The role of Anticipated Regret. *University Of Santo Tomas Senior High School*. 82 *American Journal of Industrial and Business Management (Print)*, 05(01), 27–36. <https://doi.org/10.4236/ajibm.2015.51004>
- Zulfaris, M., Mustafa, H., Mahussin, N., Alam, K., Daud, Z. (2020). Students and Money Management Behavior of a Malaysian Public University. *Journal of Asian Finance, Economics and Business* 7(3), 245-251. doi: 10.13106/jafeb.2020.vol7.no3.245.

Adoption of Artificial Intelligence Technologies in the Philippine Construction Industry: A Review of Literature

John Vincent L. Santos^{1*}, Joefil C. Jocson²

¹Holy Cross College, Sta. Rosa, N.E., Inc., Nueva Ecija, Philippines

²Nueva Ecija University of Science and Technology, Nueva Ecija, Philippines

*Corresponding Author Email: j.vince103@gmail.com

Date received: June 23, 2024

Date revised: July 5, 2024

Date accepted: June 11, 2024

Originality: 88%

Grammarly Score: 99%

Similarity: 12%

Recommended citation:

Santos, J.V., Jocson, J. (2024). Adoption of artificial intelligence technologies in the Philippine construction industry: a review of literature. *Journal of Interdisciplinary Perspectives*, 2(8), 461-471.
<https://doi.org/10.69569/jip.2024.0304>

Abstract. This review explores the adoption of Artificial Intelligence (AI) technologies in the Philippine construction industry, focusing on the extent and scope of adoption, influencing factors, readiness, and associated benefits and challenges. Utilizing the Technology-Organization-Environment (TOE) framework, Technology Readiness Index (TRI), and diffusion of innovation theory, the study synthesizes findings from 20 articles published between 2014 and 2024. Findings reveal a promising yet varied landscape of AI integration, driven by the need for improved cost management, enhanced decision-making, and higher quality standards. Successful AI adoption involves digital readiness, robust data management, and stakeholder engagement. Benefits include enhanced productivity, cost-efficiency, decision-making capabilities, sustainability, and safety. However, significant challenges such as data quality, technological complexity, ethical concerns, and the need for a skilled workforce remain. Overcoming these challenges through strategic planning and investment is crucial for the growth of AI adoption in the Philippine construction industry.

Keywords: AI adoption; Philippine construction industry; Cost management; Technological integration; Sustainability.

1.0 Introduction

In recent years, the global construction industry has increasingly turned to Artificial Intelligence (AI) technologies to address its challenges, including labor shortages, cost overruns, and the need for greater efficiency and safety (Adeloye et al., 2023). Worldwide, AI was leveraged to optimize project management, enhance predictive maintenance, and improve overall productivity (Jambol et al., 2024). Countries like Bahrain, France, and Germany made significant strides in integrating AI into their construction practices, resulting in substantial improvements in project outcomes and operational efficiencies (Aljawder & Al-Karaghoul, 2024; Pan & Zhang, 2023). These advancements set a precedent for other nations, showcasing the potential benefits of AI in transforming the construction sector.

The construction industry is a cornerstone of economic development globally, including in the Philippines, where it plays a crucial role in infrastructure growth and employment (Siman, 2023). As this sector navigates the complexities of modernization, the adoption of Artificial Intelligence (AI) technologies stands out as a transformative potential (Bang & Olsson, 2022). AI offered promises of efficiency gains, improved safety measures, and enhanced project management capabilities, which significantly benefited the Philippine construction landscape (Korke et al., 2023). However, the Philippine construction industry faced challenges such as limited technological infrastructure, a shortage of skilled professionals, and regulatory hurdles (Dimaculangan, 2023;

This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC 4.0).

Subia et al., 2019; Santos et al., 2022). Understanding the current state of AI adoption in the Philippines is essential for identifying these barriers and developing strategies to overcome them.

This scholarly review explored the current state of AI adoption within the Philippine construction industry, addressing several key research questions. Firstly, it described the extent and scope of AI technology implementation across various construction practices and projects in the Philippines. Understanding this current state is critical for stakeholders and policymakers to identify existing gaps and opportunities for further integration of AI (Dwivedi et al., 2021). Secondly, the review explored the factors influencing AI adoption in the Philippine construction industry. By examining these factors—ranging from technological feasibility and cost-effectiveness to regulatory frameworks and organizational readiness—this research aims to uncover the motivations and barriers shaping AI uptake in Philippine construction (Obana, 2024). Moreover, the study investigated how the Philippine construction industry can prepare for the integration of AI technologies. This includes identifying challenges such as the shortage of skilled AI professionals and the need for targeted investments in infrastructure and training. Addressing these challenges will be essential for maximizing the potential benefits of AI while mitigating risks (Shahriar et al., 2023). Lastly, the review assessed both the potential benefits and challenges associated with AI integration in the Philippine construction industry. By examining local case studies and best practices, the research aims to derive actionable insights that can inform strategic decision-making and policy formulation (Khan et al., 2024).

To sum up, this research is motivated by the imperative to comprehensively understand the landscape of AI adoption in Philippine construction, anticipate future trends, and provide practical recommendations for stakeholders to harness AI's transformative potential effectively. By addressing these research questions, this study seeks to contribute to the ongoing discourse on technological innovation within the Philippine construction industry.

Theoretical and Conceptual Framework

The adoption of AI technologies in the construction industry is a process influenced by various factors. To understand this complexity, several key concepts and theories are instrumental. This research leverages several theoretical and conceptual frameworks to examine the adoption of AI technologies in the Philippine construction industry. The primary theoretical framework is the Technology-Organization-Environment (TOE) framework, which describes the relationship between technological, organizational, and environmental factors that influence technology adoption (Lin & Chen, 2023). The TOE framework is particularly relevant as it provides a comprehensive perspective on the factors affecting AI adoption in this sector.

In addition to the TOE framework, the Technology Readiness Index (TRI) serves as another framework for this study. The TRI measures the readiness of individuals and organizations to adopt new technologies, offering a critical assessment of the Philippine construction industry's preparedness for AI integration (Lai & Lee, 2020). This framework is essential for understanding the industry's current capabilities and identifying areas needing improvement (Santos & Jocson, 2021). The theoretical anchor for this research is the diffusion of innovation theory, which explains how new technologies are adopted and spread within a society (Okour et al., 2021). This theory is pertinent as it provides insights into both the benefits and challenges associated with AI adoption in the construction industry, guiding the analysis of how AI can be effectively integrated (LlenadaSantos, 2022).

The application of these frameworks to the research questions is as follows: the TOE framework addresses the current state of AI adoption and the factors influencing it, corresponding to research questions 1 and 2. The TRI framework is applied to research question 3, which focuses on how the industry can prepare for AI integration. The diffusion of innovation theory is relevant to research question 4, which explores the potential benefits and challenges of AI adoption.

2.0 Methodology

This research reviewed the literature on the adoption of AI in the Philippine construction industry. To achieve this objective, a systematic review of existing studies was conducted. The systematic review approach was chosen because it allows for identifying, selecting, and analyzing relevant literature on AI adoption in the Philippine construction industry (Ismail et al., 2021). Following the guidelines of the Preferred Reporting Items for Systematic

Reviews and Meta-Analyses (PRISMA) statement, this approach ensured a structured and transparent review process.

Data collection involved a comprehensive search of electronic databases, including Google Scholar, JSTOR, and EBSCO. Keywords such as "Philippines," "Construction Industry," "artificial intelligence," and "AI technology" were used to identify relevant studies. Initially, 150 articles were identified through this search. These articles were then screened and assessed for eligibility, resulting in 20 articles being selected for inclusion in the final review. This selection process ensured that only the most pertinent studies were included, providing a focused and relevant dataset for analysis.

The sample for this study consisted of 20 articles published between 2014 and 2024, all written in English. Purposive sampling was employed to select articles that met specific eligibility criteria relevant to the study's focus on adopting AI in the Philippine construction industry. This sampling technique was crucial in ensuring that the selected articles were directly relevant to the research questions and provided comprehensive insights into the current state and challenges of AI adoption in the industry.

The data analysis technique used in this study was thematic analysis. Each selected article was thoroughly read and analyzed to identify key themes related to AI adoption in the Philippine construction industry. These themes were then organized and presented coherently, offering a comprehensive review of the literature. This analytical approach allowed for a deep understanding of the factors influencing AI adoption and the specific challenges faced by the industry.

However, the study had some limitations. The primary limitation was the potential for selection bias, as only articles written in English and published between 2014 and 2024 were included in the review. Additionally, the study relied solely on literature and did not incorporate empirical data, which may limit the generalizability of the findings. Despite these limitations, the study provides valuable insights into the current state of AI adoption in the Philippine construction industry.

Ethical considerations were carefully adhered to throughout the study. All selected articles were properly cited to acknowledge the original authors' contributions and avoid plagiarism. Any potential conflicts of interest were disclosed to maintain transparency. Since the study did not involve human participants, ethical approval was not required, and the review process adhered to standard ethical guidelines for literature reviews.

3.0 Results and Discussion

3.1 Current State of AI Adoption

Adopting AI technologies in the Philippine construction industry transforms various sector aspects, significantly improving efficiency, accuracy, sustainability, and safety, as shown in Table 1. One key area of impact is cost estimation and budgeting. AI, particularly Artificial Neural Networks (ANN), provides accurate cost predictions and enhances budgeting methods. This is crucial for financial planning and project success, as shown in studies by Roxas et al. (2019) and Allam et al. Roxas & Ongpeng (2014) and Gante et al. (2022) further highlight how ANN models improve structural cost estimation and road construction cost forecasting, benefiting financial management in construction projects.

In project management and performance, AI technologies enable predictive modeling, which enhances decision-making and project outcomes. According to Fernandez et al. (2021) and Lim et al. (2021), AI is used in predictive modeling and construction management, especially in low-cost housing projects. This leads to more efficient processes and better project performance, improving timelines, resource allocation, and overall productivity in the construction industry. Sustainability and environmental impact are also critical areas where AI is making substantial contributions. AI improves green building ratings and integrates sustainable materials into construction projects, as noted by Lat et al. (2022) and Silva et al. (2020). Additionally, Cataldo et al. (2022) discuss the role of AI in sustainable supply chain management (SSCM), promoting sustainability throughout the construction supply chain. These advancements help the industry adopt more environmentally friendly practices and comply with global sustainability standards.

Table 1. Identified sub-themes in the current state of AI adoption

Sub-themes	Applications	Related Literature
AI in Cost Estimation and Budgeting	Accurate cost predictions and budgeting improvements	Roxas et al. (2019); Allam et al.; Roxas & Ongpeng (2014); Gante et al. (2022); Lim et al. (2021)
AI in Project Management and Performance	Predictive modeling and construction management	Fernandez et al. (2021); Lim et al. (2021)
AI in Sustainability and Environmental Impact	Green building ratings, sustainability improvements, and SSCM	Lat et al. (2022); Silva et al. (2020); Cataldo et al. (2022)
AI in Safety and Compliance	Safety technologies and PPE compliance detection	Magon & Imbang (2022); Reyes et al. (2022)
AI in Material and Structural Optimization	Optimizing concrete properties and 3D printing	Silva et al. (2020); Nebrida (2022); Alejandrino et al. (2020)
AI in Geotechnical and Structural Analysis	Soil profiling, geotechnical analysis, and structural health monitoring	Galupino & Dungca (2022); Villanueva et al. (2022)
AI in Efficiency and Documentation	Enhancing supply chain efficiency and problem documentation	Encabo (2023); Pusod & Villaverde (2021)

Safety and compliance are crucial for the construction industry, and AI technologies significantly enhance these aspects. Magon & Imbang (2022) and Reyes et al. (2022) report on the development of AI-driven safety technologies and the use of Convolutional Neural Networks (CNN) for detecting personal protective equipment (PPE) compliance. These innovations help mitigate risks and ensure worker safety on construction sites, addressing one of the industry's most pressing concerns. AI also proves invaluable in material and structural optimization. It optimizes concrete properties for better material efficiency and environmental sustainability, as highlighted by Silva et al. (2020). The integration of AI in 3D printing, discussed by Nebrida (2022) and Alejandrino et al. (2020), further enhances material efficiency and automates building processes, representing a significant technological advancement in construction practices.

AI benefits geotechnical and structural analysis through advanced soil profiling and structural health monitoring. Studies by Galupino and Dungca (2022) and Villanueva et al. (2022) demonstrate machine learning for soil profiling and deep learning for crack detection, ensuring construction projects' structural integrity and safety. These applications improve the accuracy of geotechnical assessments and facilitate proactive maintenance of structures. Lastly, AI enhances efficiency and documentation within the construction industry. Encabo (2023) notes that AI improves supply chain efficiency, leading to streamlined operations and better resource utilization. Pusod and Villaverde (2021) emphasize the role of AI in documenting construction problems, which enhances project management and workflow efficiency. These improvements reduce delays, minimize costs, and ensure smoother project execution.

3.2 Factors Influencing AI Adoption

Various factors influence the adoption of AI technologies in the Philippine construction industry, each with significant implications for the sector's growth and development, as shown in Table 2. Cost and Operational Efficiency are major drivers of AI adoption. Studies by Encabo (2023) and Nebrida (2022) highlight AI's potential to reduce operational costs and boost productivity. Accurate cost estimation, as discussed by Roxas et al. (2019) and Allam et al., is crucial for efficient project planning and execution. Construction companies must invest in AI technologies to stay competitive by managing costs effectively and enhancing overall efficiency.

In Project Management and Decision-Making, AI enables more efficient project planning and accurate decision-making, especially in complex projects like road construction (Gante et al., 2022). Pusod and Villaverde (2021) note that AI can reduce delays and solve construction problems more effectively. This suggests that adopting AI can lead to more timely project completions and improved problem-solving capabilities, which are vital for maintaining project schedules and budgets.

Table 2. Identified sub-themes in the current state of AI adoption

Sub-themes	Factors	Related Literature
Cost and Operational Efficiency	Operational cost benefits, accurate cost estimation	Encabo (2023); Nebrida (2022); Roxas et al. (2019); Allam et al.
Project Management and Decision-Making	Efficient project planning, accurate decision-making, delay reduction, problem solving	Gante et al. (2022); Pusod & Villaverde (2021)
Quality and Performance Improvement	High-quality project outputs, socio-economic progress, workmanship, policy development	Fernandez et al. (2021); Lim et al. (2021)
Safety and Regulatory Compliance	Safety enhancements, regulatory compliance, deep learning advancements	Magon & Imbang (2022); Reyes et al. (2022)
Sustainability and Environmental Impact	Sustainable material use, urbanization, environmental concerns, energy efficiency	Manahan Malasan et al. (2021); Lat et al. (2022)
Technological and Data Challenges	Data completeness and quality, technology limitations	Roxas et al. (2019); Galupino & Dungca (2022); Alejandrino et al. (2020)
Ethical and Skill Considerations	Ethical concerns, skill requirements	Nebrida & Oliveros (2023); Cataldo et al. (2022)

Quality and Performance Improvement is another area where AI plays a crucial role. Fernandez et al. (2021) and Lim et al. (2021) emphasize the need for high-quality project outputs and the socio-economic progress driven by AI adoption. Addressing workmanship defects and developing policy guidelines to support AI implementation is essential for enhancing construction quality. Embracing AI can lead to higher-quality constructions that meet industry standards and societal needs. Safety and Regulatory Compliance are also critical. AI technologies enhance safety regulations and ensure compliance, particularly through advancements like deep learning for PPE compliance (Magon & Imbang, 2022; Reyes et al., 2022). This implies that AI can significantly reduce workplace accidents and ensure adherence to safety standards, crucial for worker safety and legal compliance.

In Sustainability and Environmental Impact, AI adoption is driven by the need for sustainable material use and addressing environmental concerns (Manahan Malasan et al., 2021; Lat et al., 2022). AI helps manage urbanization challenges and improve energy efficiency. AI can support the construction industry's efforts to become more sustainable and environmentally friendly, aligning with global sustainability goals. However, the industry faces Technological and Data Challenges. Ensuring data completeness and quality is a significant hurdle, as Roxas et al. (2019) and Galupino & Dungca (2022) highlight. Current AI technologies also have inherent limitations (Alejandrino et al., 2020). Overcoming these challenges requires substantial investment in technology and data infrastructure. Companies must prioritize data management and technological upgrades to leverage AI's benefits fully.

Lastly, Ethical and Skill Considerations are crucial for AI adoption. Ethical concerns related to AI use must be addressed, as noted by Nebrida and Oliveros (2023). Additionally, there is a need for skilled personnel to manage and implement AI technologies effectively (Cataldo et al., 2022). The construction industry must invest in training and education to develop the necessary skills and address ethical issues, ensuring responsible and effective AI implementation. Overall, the identified factors affecting the adoption of artificial intelligence in the construction industry were encompassed by the technological, organizational, and environmental factors that influence technology adoption according to the TOE framework (Lin & Chen, 2023).

3.3 Preparations for AI Adoption

The adoption of AI technologies in the Philippine construction industry stands to revolutionize key aspects, driven by extensive preparation outlined in recent literature, as shown in Table 3. Central to this transformation is integrating Digital Tools and Modeling, such as BIM AI software and MATLAB simulations, highlighted by Nebrida & Oliveros (2023) and Roxas et al. (2019). These tools promise enhanced project visualization, streamlined collaboration, and improved decision-making, addressing longstanding design and project management inefficiencies.

Table 3. Identified sub-themes in the preparations for AI adoption

Sub-themes	Preparation Factors	Related Literature
Digital Tools and Modeling	Digital modeling, BIM AI software, and MATLAB use	Nebrida & Oliveros (2023); Roxas et al. (2019); Allam et al.
Data Collection and Analysis	Comprehensive data collection, analysis of past projects	Roxas et al. (2019); Roxas & Ongpeng (2014); Allam et al.; Gante et al. (2022)
Stakeholder Training and Education	Workforce training, stakeholder education, and relations	Nebrida & Oliveros (2023); Fernandez et al. (2021); Encabo (2023)
Assessment and Evaluation	Assessment tools, meta-cognitive analysis, policy guidelines	Fernandez et al. (2021); Lim et al. (2021)
Algorithm Development and Validation	Algorithm development, statistical tools, model training	Pusod & Villaverde (2021); Silva et al. (2020); Galupino & Dungca (2022); Villanueva et al. (2022)
Sustainability and Innovation	Sustainability assessment, green building ratings, innovation mapping	Lat et al. (2022); Magon & Imbang (2022)
Practical Applications and On-Site Utility	Practical application development, 3D printing impacts	Villanueva et al. (2022); Nebrida (2022)
Financial and Technological Support	Smart technology investment, ML algorithm implementation	Cataldo et al. (2022); Alejandrino et al. (2020)

Data Collection and Analysis emerge as foundational pillars for AI readiness. Roxas et al. (2019) and Allam et al. emphasize robust data collection methods and advanced analytics using tools like MATLAB. Effective use of historical project data, noted by Gante et al. (2022), enhances predictive capabilities and optimizes cost estimation and resource allocation, thereby reducing project risks and improving efficiency. The importance of Stakeholder Training and Education cannot be overstated in fostering AI adoption. Nebrida and Oliveros (2023) stress the need for workforce training in digital modeling and AI technologies, ensuring stakeholders can leverage these tools effectively. Fernandez et al. (2021) advocate for meta-cognitive analysis and stakeholder education to align expectations and enhance project outcomes. This preparation is crucial for overcoming initial resistance to change and maximizing the benefits of AI integration.

Assessment and Evaluation methodologies, including assessment tools and policy guidelines formulation (Lim et al., 2021), are essential for measuring the impact and success of AI implementations. These frameworks facilitate continuous improvement and ensure AI applications meet industry standards and regulatory requirements, fostering an environment conducive to innovation and sustainable growth. In terms of Algorithm Development and Validation, advancements in machine learning algorithms (Pusod & Villaverde, 2021; Silva et al., 2020) play a pivotal role in predictive modeling and real-time decision support in construction projects. Robust algorithmic frameworks and validation processes are critical for enhancing AI-driven applications' accuracy, reliability, and performance metrics.

Sustainability and Innovation are driving forces behind AI adoption in the construction sector. Lat et al. (2022) highlight AI's role in sustainability assessments and green building ratings, aligning with global environmental initiatives. Magon and Imbang (2022) stress innovation mapping and socioeconomic reviews to identify opportunities for AI-driven advancements that contribute to economic development and environmental stewardship. As discussed by Villanueva et al. (2022) and Nebrida (2022), practical applications and on-site utility underscore the tangible benefits of AI technologies in enhancing construction processes and project outcomes. From optimizing material usage to improving methodologies, these applications illustrate AI's transformative potential in mitigating challenges and advancing industry standards.

However, realizing these benefits hinges on addressing Financial and Technological Support. Cataldo et al. (2022) advocate for strategic investments in smart technologies and financial support, particularly for SMEs, to facilitate widespread AI adoption. Alejandrino et al. (2020) stress the importance of handling large datasets and

implementing scalable machine learning algorithms, highlighting the need for robust technological infrastructure to sustain long-term AI integration.

3.4 Benefits of AI Adoption

Adopting AI technologies in the Philippine construction sector promises transformative benefits across several critical dimensions, as highlighted by the identified sub-themes in the literature shown in Table 4.

Table 4. Identified sub-themes in the benefits of AI adoption

Sub-themes	Associated Benefits	Related Literature
Increased Productivity and Efficiency	Increased operational efficiency, enhanced project delivery speed	Nebrida & Oliveros (2023), Encabo (2023), Lim et al. (2021)
Improved Cost Management	Reduced operational costs, accurate cost predictions	Roxas et al. (2019), Roxas & Ongpeng (2014), Pusod & Villaverde (2021)
Enhanced Decision-Making	Informed decision-making, improved forecasting	Fernandez et al. (2021), Allam et al., Magon & Imbang (2022)
Higher Quality and Sustainability	Use of sustainable materials, improved environmental impact assessments	Manahan Malasan et al. (2021), Lat et al. (2022), Silva et al. (2020)
Optimization of Processes	Material optimization, production efficiency improvement	Alejandrino et al. (2020), Nebrida (2022)
Safety and Compliance	Enhanced safety compliance, protocol integration	Reyes et al. (2022), Galupino & Dungca (2022), Villanueva et al. (2022)
Innovation and Technological Advancement	Technological innovation, advancement in construction methods	Gante et al. (2022), Cataldo et al. (2022)
Economic Competitiveness	Improved economic competitiveness, alignment with socio-political settings	Magon & Imbang (2022), Cataldo et al. (2022)
Environmental Benefits	Environmental sustainability benefits, reduction of carbon footprint	Lat et al. (2022), Nebrida (2022), Silva et al. (2020)
Digital Transformation	Adoption of digital methods, efficiency gains through automation	Nebrida & Oliveros (2023), Encabo (2023), Galupino & Dungca (2022)

One of the primary advantages is Increased Productivity and Efficiency. AI-driven tools, as demonstrated by Nebrida & Oliveros (2023), Encabo (2023), and Lim et al. (2021), significantly enhance operational efficiency and expedite project delivery. AI accelerates project timelines and boosts overall productivity by automating routine tasks, optimizing resource allocation, and streamlining workflows. Moreover, Improved Cost Management emerges as another pivotal benefit. Studies by Roxas et al. (2019), Roxas & Ongpeng (2014), and Pusod & Villaverde (2021) underscore AI's ability to facilitate precise cost predictions and reduce operational expenses. Through advanced analytics and predictive modeling, AI enables better financial planning, risk management, and budget adherence, which is essential for sustainable project execution in the Philippine context.

AI adoption also enhances Decision-Making capabilities within the industry. Fernandez et al. (2021), Allam et al., and Magon and Imbang (2022) highlight AI's role in providing data-driven insights and improving forecasting accuracy. By leveraging real-time data analysis and predictive algorithms, stakeholders can promptly make informed decisions, mitigate risks, and capitalize on opportunities, enhancing project outcomes and stakeholder satisfaction. Integrating AI contributes significantly to Higher Quality and Sustainability practices in construction. Research by Manahan Malasan et al. (2021), Lat et al. (2022), and Silva et al. (2020) emphasizes AI's capacity to promote sustainable construction methods through the use of eco-friendly materials and enhanced environmental impact assessments. AI-driven tools optimize material usage, minimize waste, and facilitate energy-efficient construction practices, aligning with global sustainability goals and regulatory requirements.

Furthermore, AI supports process Optimization by improving material selection, enhancing production efficiency, and optimizing operational workflows, as noted by Alejandrino et al. (2020) and Nebrida (2022). These

advancements streamline construction operations and enhance scalability and adaptability to market demands, further driving efficiency gains and cost savings. Regarding Safety and Compliance, AI technologies ensure enhanced safety protocols and regulatory compliance on construction sites. Reyes et al. (2022), Galupino & Dungca (2022), and Villanueva et al. (2022) illustrate AI's capability in real-time safety monitoring, risk prediction, and protocol integration, fostering a safer working environment and reducing accidents.

Moreover, AI adoption stimulates Innovation and Technological Advancement in construction methods. Gante et al. (2022) and Cataldo et al. (2022) emphasize how AI facilitates technological innovation by enabling advanced construction techniques and integrating smart technologies. This innovation enhances project efficiency and positions Philippine construction firms at the forefront of global technological advancements. Economically, AI adoption contributes to Improved Economic Competitiveness by optimizing resource allocation, improving project efficiency, and aligning with socio-political settings, as discussed by Magon & Imbang (2022) and Cataldo et al. (2022). These benefits enhance industry competitiveness, attract investment, and stimulate economic growth, creating opportunities for local businesses and job creation.

Lastly, AI adoption promotes Environmental Benefits by fostering sustainable construction practices and reducing the carbon footprint. Lat et al. (2022), Nebrida (2022), and Silva et al. (2020) highlight how AI enables efficient resource use, minimizes environmental impact, and supports green building initiatives, aligning with global sustainability agendas.

3.5 Challenges of AI Adoption

The adoption of AI technologies in the Philippine construction industry presents promising opportunities, alongside several significant challenges that must be addressed to fully realize its potential, as shown in Table 5. Adopting AI technologies in the Philippine construction industry presents promising opportunities alongside several significant challenges that must be addressed to realize its full potential. Ethical and Security Concerns stand out as critical hurdles, as highlighted by Nebrida & Oliveros (2023) and Reyes et al. (2022). Data privacy, algorithm bias, and cybersecurity risks need careful management to ensure ethical use and protect sensitive information, which is essential for maintaining trust and credibility within the industry.

Table 5. Identified sub-themes in the challenges of AI adoption

Sub-themes	Associated Challenges	Related Literature
Ethical and Security Concerns	Ethical implications, security risks	Nebrida & Oliveros (2023), Reyes et al. (2022)
Financial Constraints	Funding challenges, financial investments	Encabo (2023), Cataldo et al. (2022)
Data Complexity and Quality	Handling complex data, ensuring data accuracy	Roxas et al. (2019), Gante et al. (2022), Silva et al. (2020)
Stakeholder Trust and Acceptance	Building trust, stakeholder acceptance	Roxas et al. (2019), Roxas & Ongpeng (2014)
Accuracy and Adaptability of Models	Ensuring model accuracy, adapting models to diverse project conditions	Lim et al. (2021), Galupino & Dungca (2022), Villanueva et al. (2022)
Technological Complexity	Managing complex AI technologies, technological risks	Galupino & Dungca (2022), Alejandrino et al. (2020)
Policy and Regulatory Challenges	Adhering to policy guidelines, regulatory compliance	Lim et al. (2021), Pusod & Villaverde (2021)
Long-term Sustainability	Sustainable integration of AI technologies, longevity of AI solutions	Cataldo et al. (2022), Nebrida (2022)
Skills and Workforce Adaptation	Skills gap, workforce training, and adaptation	Encabo (2023), Nebrida & Oliveros (2023)
Integration with Existing Systems	Integrating AI with current systems, compatibility issues	Pusod & Villaverde (2021), Silva et al. (2020)

Financial Constraints pose another substantial challenge. Encabo (2023) and Cataldo et al. (2022) underscore the funding challenges and significant financial investments required for implementing AI technologies. Overcoming these barriers requires strategic financial planning, potential partnerships with financial institutions, and demonstrating a clear return on investment to stakeholders. Data Complexity and Quality represent fundamental challenges in AI adoption, as noted by Roxas et al. (2019), Gante et al. (2022), and Silva et al. (2020). Handling large volumes of complex data while ensuring accuracy and reliability is crucial for the effectiveness of AI applications in construction. Robust data management strategies, advanced analytics capabilities, and rigorous validation processes are necessary to mitigate errors and enhance decision-making outcomes.

Building Stakeholder Trust and Acceptance is crucial for successful AI adoption. Roxas et al. (2019) and Roxas & Ongpeng (2014) emphasize the importance of transparency in AI processes and demonstrate tangible benefits to gain acceptance among project managers, contractors, and regulatory bodies. Effective communication and addressing concerns proactively can help mitigate resistance to technological change. Ensuring the Accuracy and Adaptability of Models is another challenge, particularly in diverse project conditions and environments, highlighted by Lim et al. (2021), Galupino & Dungca (2022), and Villanueva et al. (2022). AI models must be continuously refined and adapted to specific project requirements to maintain reliability and effectiveness in decision-making processes.

Technological Complexity presents challenges in managing advanced AI technologies and addressing associated risks, as Galupino & Dungca (2022) and Alejandrino et al. (2020) noted. This includes understanding and mitigating technological risks, ensuring system compatibility, and integrating AI seamlessly into existing workflows without disrupting operations. Addressing Policy and Regulatory Challenges is crucial for navigating legal frameworks and compliance requirements, as Lim et al. (2021) and Pusod & Villaverde (2021) highlighted. Adhering to evolving policies and regulations governing AI adoption in construction ensures legal compliance and minimizes regulatory risks.

Long-term Sustainability of AI solutions requires sustainable integration and ongoing maintenance, as Cataldo et al. (2022) and Nebrida (2022) emphasize. Ensuring the longevity and scalability of AI implementations involves strategic planning, resource allocation, and adaptation to technological advancements over time. Moreover, Skills and Workforce Adaptation presents challenges due to the skills gap and the need for workforce training in AI technologies, as noted by Encabo (2023) and Nebrida and Oliveros (2023). Upskilling the workforce, fostering a culture of innovation, and investing in continuous education are essential for maximizing the benefits of AI adoption and driving industry-wide transformation. Finally, Integration with Existing Systems involves overcoming compatibility issues and ensuring seamless integration of AI technologies with current construction systems, highlighted by Pusod & Villaverde (2021) and Silva et al. (2020). Careful planning, technical expertise, and phased implementation strategies can minimize disruptions and optimize operational efficiency.

4.0 Conclusions

The current state of AI adoption in the Philippine construction industry reveals a promising yet varied landscape. Technologies such as 3D printing, predictive modeling, and machine learning are being integrated to enhance project delivery and operational efficiency. Despite these advancements, the adoption rate varies across different sectors and organizations, reflecting a nascent stage of AI integration in the industry. Continued efforts to embrace these technologies can position the industry to meet modern challenges better and capitalize on opportunities for innovation and growth.

Several factors influence the adoption of AI in the Philippine construction sector. Key drivers include improved cost management, enhanced decision-making, and higher quality standards. However, financial constraints, data complexity, and stakeholder trust present significant barriers. Understanding and addressing these factors is essential for creating a conducive environment for AI adoption, ultimately leading to more efficient and effective construction processes. Preparation for AI adoption involves several critical steps. Digital readiness, including workforce training and data management, is paramount. Stakeholder engagement and developing robust technological frameworks are also crucial to ensure smooth integration and functionality. By focusing on these preparatory measures, the construction industry can harness AI's full potential, driving significant improvements and fostering a culture of innovation and continuous improvement.

The benefits of AI adoption in the Philippine construction industry are manifold. AI technologies enhance productivity, cost-efficiency, and decision-making capabilities while promoting sustainability and safety. These advancements improve the quality of construction projects and contribute to economic competitiveness and environmental stewardship. By leveraging these benefits, the industry can set a path for leadership in the global construction landscape, achieving higher standards and greater operational success. Despite the potential benefits, the challenges of AI adoption must be addressed to realize its full potential. Data quality, technological complexity, ethical concerns, and the need for a skilled workforce pose significant hurdles. Overcoming these obstacles through strategic planning, stakeholder engagement, and investment in technology and human resources will pave the way for sustainable growth and innovation in the sector. By tackling these challenges head-on, the Philippine construction industry can enhance its competitiveness and contribute to broader socio-economic progress.

Future studies could explore the longitudinal impact of adopting AI in the construction industry. Further investigation into the effectiveness of AI tools and technological applications in improving the efficiency of construction methods can also yield innovative approaches that enhance the adoption of AI. Additionally, comparative studies across different construction methods, including traditional and AI approaches, would provide insights into the advantages and disadvantages of adopting or integrating AI with the current construction practices.

5.0 Contributions of Authors

The authors confirm the equal contribution in each part of this work. All authors reviewed and approved the final version of this work.

6.0 Funding

This work received no specific grant from any funding agency.

7.0 Conflict of Interests

All authors declare that they have no conflicts of interest.

8.0 References

- Adeloye, A. O., Diekola, O., Delvin, K., & Gbenga, C. (2023). Applications of Artificial Intelligence (AI) in the construction industry: A review of Observational Studies. *Applied Sciences Research Periodicals*, 1(4), 28-38.
- Alejandrino, J. D., Concepcion, R. S., Lauguico, S. C., Tobias, R. R., Venancio, L., Macasaet, D., ... & Dadios, E. P. (2020). A machine learning approach of lattice infill pattern for increasing material efficiency in additive manufacturing processes. *Int. J. Mech. Eng. Robot. Res.*, 9(9), 1253-1263. <https://doi.org/10.18178/ijmerr.9.9.1253-1263>
- Aljawder, A., & Al-Karaghoul, W. (2024). The adoption of technology management principles and artificial intelligence for a sustainable lean construction industry in the case of Bahrain. *Journal of Decision Systems*, 33(2), 263-292. <https://doi.org/10.1080/12460125.2022.2075529>
- Allam, J., Dayag, R. M., Fronza, J. C., Tumaliuan, J. A., & Abana, E. Predicting Road Construction Project Costs In Municipalities Through Artificial Neural Network Modeling.
- Bang, S., & Olsson, N. (2022). Artificial intelligence in construction projects: a systematic scoping review. <https://doi.org/10.32738/JEPPM-2022-0021>
- Cataldo, I., Banaitis, A., Samadhiya, A., Banaitienė, N., Kumar, A., & Luthra, S. (2022). Sustainable supply chain management in construction: An exploratory review for future research. *Journal of Civil Engineering and Management*, 28(7), 536-553. <https://doi.org/10.3846/jcem.2022.17>
- Dimaculangan, E. (2023). Issues and challenges in the Philippine construction industry: An opportunity for BIM adoption. *Bitlis Eren University Journal of Science and Technology*, 13(2), 93-119. <https://doi.org/10.17678/beusci.1279862>
- Dwivedi, Y. K., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., Crick, T., Duan, Y., Dwivedi, R., Edwards, J., Eirug, A., Galanos, V., Ilavarasan, V., Janssen, M., Jones, P., Kar, A.K., Kizgin, H., Kronemann, B., Lal, B., Lucini, B., Medaglia, R., & Williams, M. D. (2021). Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. *International Journal of Information Management*, 57, 101994. <https://doi.org/10.1016/j.ijinfomgt.2019.08.002>
- Encabo, P. L. (2023, August). Artificial intelligence in supply chain: Status and constraints-The Philippine experience. In *AIP Conference Proceedings* (Vol. 2823, No. 1). AIP Publishing. <https://doi.org/10.1063/5.0162493>
- Fernandez, J., Silva, D. L., & De Jesus, K. L. M. (2021). Hybrid Neural-Based Model for Predicting the Construction Project Performance of High-Rise Building Projects in Metro Manila, Philippines. In *Modern Management based on Big Data II and Machine Learning and Intelligent Systems III* (pp. 274-281). IOS Press. <https://doi.org/10.3233/FAIA210258>
- Galupino, J., & Dungca, J. (2022). Estimating Ground Elevation using Borehole Information: A Case of Metro Manila, Philippines. <https://doi.org/10.5109/5909058>
- Galupino, J., & Dungca, J. (2022). Machine learning models to generate a subsurface soil profile: A case of Makati City, Philippines. *GEOMATE Journal*, 23(95), 57-64.
- Gante, D. V., Silva, D. L., & Leopoldo, M. P. (2022). Forecasting construction cost using artificial neural network for road projects in the department of public works and highways region XI. In *Modern Management based on Big Data III* (pp. 64-71). IOS Press. <https://doi.org/10.3233/FAIA220084>
- Ismail, S. N., Ramli, A., & Aziz, H. A. (2021). Influencing factors on safety culture in mining industry: A systematic literature review approach. *Resources Policy*, 74, 102250. <https://doi.org/10.1016/j.resourpol.2021.102250>
- Jambol, D. D., Sofoluwe, O. O., Ukato, A., & Ochulor, O. J. (2024). Transforming equipment management in oil and gas with AI-driven predictive maintenance. *Computer Science & IT Research Journal*, 5(5), 1090-1112. <https://doi.org/10.51594/csitrj.v5i5.1117>
- Khan, R., Usman, M., & Moinuddin, M. (2024). From Raw Data to Actionable Insights: Navigating the World of Data Analytics. *International Journal of Advanced Engineering Technologies and Innovations*, 1(4), 142-166.
- Korke, P., Gobinath, R., Shewale, M., & Kharode, B. (2023). Role of Artificial Intelligence in Construction Project Management. In *E3S Web of Conferences* (Vol. 405, p. 04012). EDP Sciences. <https://doi.org/10.1051/e3sconf/202340504012>
- Lai, Y. L., & Lee, J. (2020). Integration of technology readiness index (TRI) into the technology acceptance model (TAM) for explaining behavior in adoption of BIM. *Asian Education Studies*, 5(2), 10. <https://doi.org/10.20849/aes.v5i2.816>
- Lat, K. C. A., Silva, D. L., & de Jesus, K. L. M. (2022, January). Neural network-based approach for identifying the influence of factors affecting the green building rating of a rural housing construction. In *2022 International Conference on Management Engineering, Software Engineering and Service Sciences (ICMSS)* (pp. 36-43). IEEE.
- Lim, R. U., Silva, D. L., & De Jesus, K. L. M. (2021). Mitigating Construction Deficiencies: An Impact Analysis for Low-Cost Housing Developments Utilizing Artificial Neural Network. In *Modern Management based on Big Data II and Machine Learning and Intelligent Systems III* (pp. 241-247). IOS Press. <https://doi.org/10.3233/FAIA210254>
- Lin, C. H., & Chen, W. H. (2023). A technology-organization-environment (TOE) framework based on scientometry for understanding the risk factors in sustainable water resources management. *Water Resources Management*, 37(15), 5849-5869.
- LlenadaSantos, J. V. (2022). Comparative Analysis of Mobile Applications for its Integration in College Mathematics Subjects. *EDUCATIO: Journal of Education*, 6(4), 324-345.

- Magon, S. A., & Imbang, G. A. (2022, December). The future of the Philippine safety industry through scenario building. In 2022 IEEE 14th International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment, and Management (HNICEM) (pp. 1-6). IEEE.
- Manahan Malasan, C., S. Villaverde, B., L. Silva, D., & M. de Jesus, K. L. (2021, December). Artificial neural network with sensitivity analysis: Predicting the flexural strength of concrete pavement using locally sourced dilapidated concrete as partial replacement. In Proceedings of the 2021 5th International Conference on Computer Science and Artificial Intelligence (pp. 408-414). <https://doi.org/10.1145/3507548.3507611>
- Nebrida, J. (2022). Automated onsite construction: 3d printing technology. Journal of Engineering Research and Reports.
- Nebrida, J. A., & Oliveros, O. (2023). Artificial Intelligence Utilized in 3D Printing Construction Technology. Asian Journal of Advanced Research and Reports, 17(4), 20-25. <https://doi.org/10.9734/ajarr/2023/v17i4476>
- Obana, L. R. (2024). Collaboration of Artificial Intelligence and Project Management.
- Okour, M. K., Chong, C. W., & Abdel Fattah, F. A. M. (2021). Knowledge management systems usage: application of diffusion of innovation theory. Global Knowledge, Memory and Communication, 70(8/9), 756-776. <https://doi.org/10.1108/GKMC-08-2020-0117>
- Pan, Y., & Zhang, L. (2023). Integrating BIM and AI for smart construction management: Current status and future directions. Archives of Computational Methods in Engineering, 30(2), 1081-1110.
- Pusod, M. G. M., & Villaverde, B. S. (2021). Solution suggesting application model to minimize delays and cost overrun for low to midrise building construction in pampanga. Civ. Eng. Archit, 9(6), 1920-1937.
- Reyes, R. C., Sevilla, R. V., Zapanta, G. S., Merin, J. V., & Maaliw, R. R. (2022, July). Safety gear compliance detection using data augmentation-assisted transfer learning in construction work environment. In 2022 IEEE International Conference on Electronics, Computing and Communication Technologies (CONECTT) (pp. 1-6). IEEE.
- Roxas, C. L. C., & Ongpeng, J. M. C. (2014, March). An artificial neural network approach to structural cost estimation of building projects in the Philippines. In DLSU Research Congress (Vol. 2, No. 2, pp. 1-8). De La Salle University-Manila.
- Roxas, C. L. C., Roxas, N. R., Cristobal, J., Hao, S. E., Rabino, R. M., & Revalde, F. (2019, November). Modeling road construction project cost in the Philippines using the artificial neural network approach. In 2019 IEEE 11th International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment, and Management (HNICEM) (pp. 1-5). IEEE.
- Shahriar, S., Allana, S., Hazratifard, S. M., & Dara, R. (2023). A survey of privacy risks and mitigation strategies in the Artificial Intelligence life cycle. IEEE Access, 11, 61829-61854.
- Santos, J., & Jocson, J. (2021). A Comparative Analysis of Productivity Improvement Techniques in Educational Institution of Holy Cross College. Canadian Journal of Educational and Social Studies, 1(1), 14-32. <https://doi.org/10.53103/cjess.v1i1.2>
- Santos, J. V. L., Lansangan, R. M. B., Marcos, E. V., Florencondia, N. B., & Cabrera, F. S. (2022). Effective Leadership Style of Engineering Managers in the Government Construction Agency: National Irrigation Administration-UPRIIS Division V. <https://doi.org/10.47191/etj/v7i1.04>
- Silva, D. L., de Jesus, K. L. M., Villaverde, B. S., & Adina, E. M. (2020, February). Hybrid artificial neural network and genetic algorithm model for multi-objective strength optimization of concrete with Surkhi and buntal fiber. In Proceedings of the 2020 12th International Conference on Computer and Automation Engineering (pp. 47-51).
- Siman, B. P. (2023). A Critical Analysis of the Philippine Construction Industry: Current Trends, Forecast, and Business Focus for Engineering Design Firms. International Journal of Multidisciplinary: Applied Business and Education Research, 4(8), 2691-2699. <https://doi.org/10.11594/ijmaber.04.08.01>
- Subia, E. G. S., Jocson, E. J. C., & Florencondia, E. N. T. (2019). Flood prevention and mitigation initiatives towards a flood-free city. American Scientific Research Journal for Engineering, Technology, and Sciences (ASRJETS), 58(1), 215-224.
- Villanueva, A., Balba, J. K. B., Beceril, C. D., Belza, J. L. G., Tagle, R. I. P., Venal, M. C. A., & Rosales, M. M. (2022, June). Crack detection and classification for reinforced concrete structures using deep learning. In 2022 2nd International Conference on Intelligent Technologies (CONIT) (pp. 1-6). IEEE.

Coping Through the Unforeseen: Comparison of Adaptive Strategies on Learning Modalities of Students in Public and Private Educational Institutions

Joaquin Dave M. Arquero*, Francheska Reine S. Dela Cruz, Avril Christi B. Soriano,
Althea Kim Albert R. Belmonte, Jose Miguel N. Romero, Joseph A. Villarama
Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines

*Corresponding Author Email: joaquindave.arquero@ushs.ph.education

Date received: June 25, 2024

Date revised: July 6, 2024

Date accepted: July 12, 2024

Originality: 92%

Grammarly Score: 99%

Similarity: 8%

Recommended citation:

Arquero, J. D., Dela Cruz, F.R., Soriano, A.C., Belmonte, A.K.A., Romero, J.M., & Villarama, J. (2024). Coping through the unforeseen: comparison of adaptive strategies on learning modalities of students in public and private educational institutions. *Journal of Interdisciplinary Perspectives*, 2(8), 472-478.
<https://doi.org/10.69569/jip.2024.0309>

Abstract. The COVID-19 pandemic prompted numerous studies on students' challenges; however, relatively little attention has been given to their coping mechanisms. This study qualitatively compared the adaptive strategies employed by students from public and private institutions during Online Distance, Blended, and Face-to-Face Learning. Grounded on Kolb's Learning Style Theory, this phenomenological research examined the various coping mechanisms utilized by Grade 10 students from public and private schools in the Philippines who were selected using convenience and snowball sampling methods. Data were analyzed following Colaizzi's method, providing a rigorous framework for interpreting the findings. Results revealed that private school students encountered significant academic difficulties due to isolation, relying primarily on self-driven coping strategies. In contrast, public school students faced challenges related to workload and socioeconomic factors, turning to hobbies, family, and peer support to manage their stresses. These findings highlighted the distinct differences in how students from various educational settings cope with pressures brought on by the pandemic. Future studies are strongly recommended to encompass broader parameters, extend over longer periods, and include more mature subjects to capture a broader range of experiences with different learning modalities. A comprehensive approach would provide deeper insights into students' coping mechanisms and adaptive strategies across educational contexts. This study underscores the importance of understanding the diverse coping mechanisms employed by students. It highlights the need for supportive measures tailored to students' unique challenges in different educational settings. Addressing these needs is crucial in developing effective strategies to support students' well-being and academic success in the face of ongoing and future educational disruptions.

Keywords: Blended Learning; Coping mechanisms; Educational Institutions; Full Face-to-Face Classes; Online Classes.

1.0 Introduction

People's instinct is to adapt to their surroundings when faced with certain circumstances. How does one cope with sudden changes? How does one manage to find ways to become accustomed to life in order to survive? This study focuses on the adaptability of Grade 10 students from private and public schools in the Philippines as they encounter various learning modalities. This research gears towards investigating the differences or similarities in how students adapt to new circumstances and if their situation is a massive factor in how they cope. Recent studies on learning styles and preferred learning modalities show a remarkable correlation between students' study habits

and preferred learning modalities in the new normal. Particular difficulties in these processes prevent or delay learning, preventing understanding.

Concerning this, people spend quite some time of their life at school. Their learning habits can be traced to how they face circumstances where they are left with no choice but to adapt to their surroundings, showing a significant relationship between the challenges and difficulties and coping mechanisms of students Candy et al. (2024) in the Philippines. That is precisely what happened with Grade 10 students when the pandemic hit. In 2020, when the coronavirus disease 2019 (COVID-19) was worsening with every passing second, the country realized that education could not be halted any further, which then affected the educational sector of several provinces of the Philippines (Andriesse & Song, 2024). Thus, online classes began. As this becomes the new normal, a study on the proportion and determinants of depression among students showed that 79.2% of their participants experience moderate to severe depression. Students' coping mechanisms can be discovered based on their learning preferences.

While previous studies focused on online learning modality, which has not captured the face-to-face challenges of students, Rasheed et al. (2020) investigated the challenges in the component of blended learning as experienced by students, teachers, and educational institutions. Moreover, Graham (2013) highlighted the opportunities brought by online components, such as learning flexibility, cost-friendliness, and pedagogical richness. However, the findings emphasized that the world modernizes because of technology; therefore, those affected by this learning modality find it challenging to manage these issues. It further capitalized that the skills required for both students and teachers are changing daily (Villarama et al., 2023) and that technological advances are too fast for some educational facilitators to adapt. Hence, it makes education overwhelming for both digital and non-digital-born students.

In essence, acknowledging the challenges of students during the different phases of education and analyzing how they cope with unveiling if it showcases any difference due to their environment may be of help in future studies as it serves as a basis for considering the general well-being of students in terms of learning through various capacities in an ever-evolving academic landscape in the Philippines and abroad. Therefore, this study aimed to compare the coping mechanisms used by public and private educational institution students who have experienced various learning modalities: online, blended, and full in-person classes. In addition, it is targeted to uncover the students' experiences from online classes transitioning to full face-to-face classes, mainly to make adjustments in the implemented learning modality and provide a suitable learning mode that compliments students' adaptive strategies.

2.0 Methodology

2.1 Research Design

This phenomenological qualitative research analyzed the coping mechanisms employed by Grade 10 students in public and private educational institutions in the Philippines who participated in online classes, blended learning modes, and entire face-to-face class setups during the academic year (AY) 2022-2023.

2.2 Research Locale

Two public and private schools, San Jose City, Science City of Muñoz, and Cabanatuan City, Nueva Ecija, Philippines, served as research locales.

2.3 Research Participants

Two students of different sexes from each participating public and private school were selected for semi-structured interviews through convenience and snowball sampling techniques. These techniques enabled researchers to engage with populations that are typically difficult to sample effectively. A total of 12 participating students, six male and six female students, served as respondents.

2.4 Research Instrument

This study employed ten semi-structured interview guide questions that were checked and validated by three experts and teachers (Language, Research, and Social Science). Following the ethical guidelines for conducting research, voluntary participation and consent in responding to these questions were ensured.

2.5 Data Gathering Procedures

The purpose of the study was discussed with the respondents, and their permission was obtained before the interview. A schedule of interview sessions and consent forms were secured to record the respondents' answers.

The data was analyzed thematically following Colaizzi's method. Before categorizing the themes, the researchers continuously assessed the responses, noting their similarities and differences. The categories were organized based on clusters of related responses to address the main issues raised by the study. Data cross-checking was employed to validate the results further.

2.6 Ethical Considerations

This research study was evaluated by the Central Luzon State University (CLSU) Ethics Research Committee (ERC) on March 14, 2023, with approval code 2023-167.

3.0 Results and Discussion

Theme 1. Hobbies as an outlet for releasing emotional and mental stress

In pursuit of mental and emotional soundness, engaging in a hobby, defined by the Cambridge Dictionary as the activity one does for personal pleasure and satisfaction when not working, is a common practice for most. In fact, according to the Philippine Statistics Authority in their 2018 Census of Philippine Business and Industry: Arts, Entertainment, and Recreation, 4,087 establishments in the country engage in arts, entertainment, and recreation activities. This includes learning a new skill, doing outdoor activities, entering the world of books and linguistics, or unleashing one's inner artist through drawing and painting.

The COVID-19 pandemic ignited the interest of society to utilize hobbies as a way of mitigating the depression and anxiety brought on by the sudden isolation from the outside world (Villarama et al., 2022). Taking the time to pursue hobbies is one of the best predictors of lower levels of depressive symptoms, and such "simple" coping strategies may help in battling anxiety and depression during the COVID-19 pandemic and lockdown (Fullana et al., 2020). As the class set-up shifted from pre-pandemic face-to-face classes to online distance learning (ODL), students had to find ways to lessen this unforeseen change's emotional and mental strain. With that, the need for effective coping strategies was introduced, and pursuing a hobby was one of them. Most participants from public educational institutions engaged in books, linguistics, and arts as a means of mitigating the stresses brought by the ODL set-up that they had to deal with.

"As I have said earlier, reading books (something I do during my healing time) became my coping mechanism."

"Back then (during ODL), I did not go out but usually played the guitar."

"I kept drawing and creating art during those times."

"When my mind is in chaos, I weave to relieve myself."

In a study by Hartono (2022), having a hobby is a fundamental way to lessen stress as it provides joy and works as a stress reliever when one focuses on the hobby. One common hobby is related to arts and crafts; making art involves the complex dialog and connection between emotion, cognition, and the senses, therefore enhancing stress management. Whether in arts, language, or music, engaging in an activity that allows complete focus and concentration and providing a solemn healing time can be a way to battle the emotional and mental strain that the unforeseen changes in education bring.

Theme 2. Socialization and its effects

The impact of the pandemic has been felt worldwide across different sectors of society. High school students, for example, have been affected by school disruption, shifting to different learning modalities and physically socializing. Students' frustration with their distance learning experiences adversely affected their emotional and mental outcomes. Thus, socially connected people provide social support, which is essential for mental and physical well-being. Social support is the perception or experience of being appreciated and cared for by others and being part of a social network that can be relied on to aid one another when needed (Villarama et al., 2024; Wills, 1991).

"Because when we get together, it is fun. Sometimes, we also work together on assignments."

*"My friends and I are talking to each other to forget our problems for a while."
"My friends, since they are the ones who are witnessing what is happening at school, I went to them."*

Students seek help from their peers to cope with stress. Their relationships and communication with their friends are their way of coping.

"Sometimes when I need help, my sibling, but when it is closer to me because he is my brother, it is like a plus that he will help me and then support me."

Family members may serve as every student's support system as a coping strategy. Specifically, they rely on their siblings because of their bond and connection to understand what each other needs when encountering mental and emotional strain.

Theme 3. Relying on oneself: The effect of intrapersonal relationship

The pandemic brought new challenges to face worldwide. Two whole years of uncertainty haunted students as they sought to find stable ground through the obscurity of the pandemic. In the thick of uncertainty, students often had to rely on themselves to navigate their workloads, life, and personal exploration. With the sudden onset of the pandemic, students had little time to adjust their surroundings and relationships to adapt. Students were forced to rely on themselves as it was challenging to find the means to get support from others, especially with the nature of the lockdown.

*"I just pushed through on my own as there was nobody else to help because of the lockdown."
"I did not have anyone to vent my struggles to, just myself."*

Students turned to themselves for motivation and assurance through online classes as a coping strategy. They turned to their hobbies, music, habits, and emotions to deal with the stress induced by the online class and its new set of unfamiliar workloads and challenges.

*"I just do my hobbies when I am sad. When I cannot take it anymore, I will do my hobbies."
"I give time to myself like [...] anything, anything I want, then when I am fine, that is when I go back."*

This reliance on oneself ultimately boiled down to isolation and solitude to focus only on one's weight in problems. Interaction with others proved too draining to be worth it anymore; weighing their options, students imposed a lockdown on themselves.

*"Back then, when there's problems at home, I locked myself in so they would not see what I have been doing."
"I isolate myself. Like I will go out on my own, eat, and such. When I am tired, I will eat out on my own. Isolating myself. There are also books."*

After the lockdown subsided and face-to-face classes resumed, the students could retain their intrapersonal relationships—however, the ability to reconnect with others allowed for the waning of self-dependence.

*"My friends and I just talk to forget our problems briefly."
"It feels easier when you have someone with you doing work."
"I go to my friend's house sometimes since I have a car."*

The importance of a healthy interpersonal relationship was highlighted by Aswin et al. (2022), where it was found that interpersonal intelligence leads to improved scores in mathematics. The ability to find motivation through oneself is associated with resilience during the pandemic in the form of grit, though Bono et al. (2020) did not affect academic functioning. Rotas and Cahapay (2021) found that students who underwent online learning coped through the stresses of lockdown by regulating themselves and turning to their hobbies and outlets to distract themselves from the weight they had to carry to survive the pandemic.

Theme 4. Socioeconomic Status: The gap in socioeconomic standing

Educational inequality occurs in multiple forms. Van and Mijs (2010) discussed its existence through the inequality of educational opportunity in terms of the influence of social background on students' test scores and learning. It opened various struggles and opportunities for students, especially during ODL, and has become one of the factors for their preferred learning mode and affected their capability to cope.

Socioeconomic status played a vital role in students' education quality during ODL. Private school students are commonly privileged in terms of access to proper school materials, such as technology, an essential component of ODL. This led to a preference for ODL as the most manageable workload for private school students to handle among the three learning modalities.

In contrast, most participants from public educational institutions have limited access to and prior knowledge of technology, which hindered them from seeing the beauty of online education and ODL being the least manageable workload.

"I did not have any gadgets to use in online class; I just borrowed from someone who has."

Magsambol (2020) and Rasheed et al. (2020) revealed that new requirements in blended learning rise as the world modernizes and technology emerges. There is an apparent gap between those who can purchase essential school materials in the new educational sector. However, despite the distinction between the two, students from both educational institutions experienced difficulties understanding lessons due to the diversion of focus and absence of physical teaching.

"We do have modules that the teachers are discussing; however, I get distracted by other apps, which divert my attention from listening to the discussion."

This is supported by the study of Hazelrigg (2020), who stated that using technology in class, such as laptops or phones, was distracting to almost half of the students in the survey.

Theme 5. Role of Educational Institutions

Education plays a significant part in one's life in terms of heightened knowledge and understanding. Shaping a child's mind until it is in the full-shaped form to be filled with the intelligence they would collect along the way. The role of educational institutions is not to be disregarded as they supply knowledge instruments that one may need as they continue to their future. However, in light of the abrupt adjustment the world had to make when the pandemic hit, it cannot be denied that the role of these institutions was halted. Moreover, it was a hardship that every student had to face. These circumstances led to multiple studies regarding the mental toll it took on students, and the results are beyond comparison.

Circumstances such as the absence of in-person teacher assistance, the proper teaching of subjects needed to be learned in the educational system, and the overloaded workload students had to carry until their education institution was ready for a face-to-face class—all of these were factors of the heightened depression rate in the world. According to a scientific brief reported by the World Health Organization, during the pandemic, the global prevalence of anxiety and depression escalated by a massive 25%. Taking into account that this was only the first year of the pandemic,

"I do not understand some of the modules because they were not taught."

"You must still understand and learn the lessons because it is only online. It is not being taught."

Further, in in-person teaching, students must fully grasp the idea of their lessons. Not to mention that these hardships were limited to the students and the whole educational facilities, such as teachers. However, amenable attempts were made not further to hinder the flow of knowledge through education. Basilaia and Kvavadze (2020) interpreted how difficult it was to switch from a face-to-face learning modality to sudden online distance learning, yet these educational institutions made appreciable attempts.

Upon certainty, the role of educational institutions can be expanded to the curriculum that should be established as early as possible in one's life. Following the expansion of the roles, it can be specified in the curriculum and discipline of moral philosophy, visual perception, anecdotes, observation learning, and peer influence (InsightsIAS, 2019). However, the role of educational institutions is not only limited to academic purposes; it can also be amplified to cultural and socioeconomic topics (Huwaida, 2018). In further support of the statement, Huwaida (2018) also stated how the young generation is capable to a great extent, and the educational institution they are enrolled in can either hinder this or be the stepping stone to reach the said extent.

4.0 Conclusion

Students from private and public educational institutions have experienced significant challenges in acquiring knowledge in the three learning modalities. Physical interactions and communication with peers, family, teacher-student, and student-teacher played vital roles in their experiences in both hardships and opportunities in learning through the different teaching approaches. Students from private educational institutions experienced academic struggles that revolved only around the concept of 'isolation' itself. Their experiences concentrated on how online and flexible teaching affect the quality of learning. Meanwhile, students from public educational institutions have more flexible academic struggles, which revolve around isolation, heavier workloads, and socioeconomic status, tremendously impacting their situation, quality, and coping.

The study showed that students from public educational institutions utilize their preferred adaptive strategy better than students from private institutions; most rely on themselves and their academic privilege, which lessens their struggles to cope. It also showed that most of the students' adaptive strategies are about nurturing their hobbies and the reliance on their family and peers as outlets for releasing emotional and mental stress and their support system. This study revealed that the world is always unexpected; people experience different hardships and cope with them depending on their current situation, so keeping an eye on this topic should help one overcome their micro and macro academic challenges.

5.0 Contributions of Authors

The authors confirm the equal contribution to every part of this research. All authors reviewed and approved the final version of this paper.

6.0 Funding

This research did not receive any particular financial assistance of any kind.

7.0 Conflict of Interests

The authors declare no conflict of interest.

8.0 Acknowledgment

The student-authors wish to express their profound gratitude to their research adviser, Professor Joseph Agbuya Villarama for the guidance throughout the process and to the Ethics Research Committee of Central Luzon State University (CLSU) for their comprehensive ethical review and approval of this study.

9.0 References

- Andriesse, E., & Song, M. H. (2024). Analyzing Educational Challenges and Youth Well-Being during the COVID-19 pandemic in Iloilo Province, the Philippines. *Philippine Social Science Journal* (University of Negros Occidental-Recoletos- Online)/Philippine Social Science Journal (University of Negros Occidental-Recoletos-Print), 7(1), 20-29. <https://doi.org/10.52006/main.v7i1.877>
- Aswin Aswin, Dasari, D., Dadang Juandi, & Kurniawan, S. (2022). Analysis of Factors That Influence Students' Mathematical Critical Thinking Skills: Intrapersonal Intelligence and Learning Motivation. *Aksioma: Jurnal Program Studi Pendidikan Matematika/Aksioma : Jurnal Program Studi Pendidikan Matematika*, 11(3), 2248-2248. <https://doi.org/10.24127/ajpm.v11i3.5440>
- Basilaia, G., & Kvavadze, D. (2020). Transition to Online Education in Schools during a SARS-CoV-2 Coronavirus (COVID-19) Pandemic in Georgia. *Pedagogical Research*, 5(4). <https://eric.ed.gov/?id=EJ1263561>
- Bono, G., Reil, K., & Hescocox, J. (2020). Stress and well-being in college students during the COVID-19 pandemic: Can grit and gratitude help?. *ResearchGate*, 10(3), 39-57. <http://dx.doi.org/10.5502/ijw.v10i3.1331>
- Cambridge Dictionary (2024). Hobby. <https://dictionary.cambridge.org/us/dictionary/english/hobby>
- Candy, M., Celeste, L., Amorin, R., Tibus, J., & Cataluna, M. (2024). Modular Instruction: Challenges, Difficulties and Coping Mechanisms among Filipino University Students. *Journal for Educators, Teachers and Trainers*, 15(1). <https://doi.org/10.47750/jett.2024.15.01.005>
- Census of Philippine Business and Industry: Arts, Entertainment and Recreation Activities in CAR (2018). Philippine Statistics Authority. <https://rssocar.psa.gov.ph/content/2018-census-philippine-business-and-industry-arts-entertainment-and-recreation-activities>
- Fullana M. A., Hidalgo-Mazzei D., & Vieta F., Radua J. (2020). " Coping behaviors associated with decreased anxiety and depressive symptoms during the COVID-19 pandemic and lockdown". *ScienceDirect*, 275(1), 80-81. <https://doi.org/10.1016/j.jad.2020.06.027>
- Graham, C. R. (2013). Emerging Practice and Research in Blended Learning. Taylor & Francis, 333-350. <https://doi.org/10.4324/9780203803738-28>
- Hartono, M. (2022). Drawing Hobby As a Medium to Manage Stress and Self-development. *VCD (Journal of Visual Communication Design)*, 7(1), 43-52. <https://doi.org/10.37715/vcd.v7i1.2905>
- Hazelrigg, N. (2020). Survey shows nearly half of students distracted by technology. *Inside Higher Ed | Higher Education News, Events and Jobs*. <https://www.insidehighered.com/digital-learning/article/2019/07/10/survey-shows-nearly-half-students-distracted-technology>
- Huwaida, R. (2018). The Paramount Role of Educational Institutions. *Daily Outlook Afghanistan*, the Leading Independent Newspaper. https://outlookafghanistan.net/editorialdetail.php?post_id=19893
- Insta Ethics: The role of family, education institutions, and society in inculcating values (2019). InsightsIAS. <https://www.insightsonindia.com/2022/08/01/insta-ethics-role-of-family-education-institution-and-society-in-inculcating-values/>

- Magsambol, B. (2020). Back to school during a pandemic: Issues that need to be solved before October 5. *Rappler*. <https://www.rappler.com/newsbreak/explainers/school-opening-philippines-issues-need-solution-before-october5-202>
- Rasheed, R. A., Kamsin, A., & Abdullah, N. A. (2020). Challenges in the online component of blended learning: A systematic review. *Computers & Education*, 144, 103701. <https://doi.org/abs/pii/S0360131519302544>
- Rotas, E., & Cahapay, M. (2021). From stress to success: Exploring how Filipino students cope with remote learning amid COVID-19 pandemic. *Journal of Pedagogical Sociology and Psychology*, 3(1), 27-35. <https://doi.org/10.33902/JPSP.2021366608>
- Van, H. G., & Mijs, J. J. B. (2010). Achievement Inequality and the Institutional Structure of Educational Systems: A Comparative Perspective. *Annual Review of Sociology*, 36(1), 407-428. <https://doi.org/10.1146/annurev.soc.012809.102538>
- Villarama, J. A., Santos, J. P. E., Adsuaara, J. P., Antalan, J. A. A. R., & Gundran, J. F. (2022). What's on Your Mind? Impact of Online Education on Students' Mental Wellness. *Journal of Education and e-Learning research*, 9(4), 240-248. <https://doi.org/10.20448/jeelr.v9i4.4243>
- Villarama, J. A., Fabros, B. G., Valdez, M. S., & Adsuaara, J. P. (2023). Multitasking language and Mathematics educators: Effects on teaching performance in Hyflex environ. *International Journal of Learner Diversity and Identities*, 30(2), 455-471. <https://ijldi-cgrn.com/wp-content/uploads/2023-30-2-46.pdf>
- Villarama, J. A., Barcelita, K. J. C., Pilien, R. V., & Cristano, W. A. V. (2024). Padlet: Post-Pandemic Avenue For a More Dynamic Language and Literature Learning Through Enhanced Technology Integration. *Issues in Language Studies*, 13(1), 304-321. <https://doi.org/10.33736/ils.6149.2024>
- Wills, T. A. (1991). Social support and interpersonal relationships. *American Psychological Association*, 265-289. <https://psycnet.apa.org/record/1991-97117-010>
- World Health Organization (2022). COVID-19 pandemic triggers 25% increase in prevalence of anxiety and depression worldwide. <https://www.who.int/news/item/02-03-2022-covid-19-pandemic-triggers-25-increase-in-prevalence-of-anxiety-and-depression-worldwidew>

How Modern Machinery Replaces Laborers? A Comparative Study of Their Livelihood Before and After Implementation

Verline Gaudeene A. Dilla*, Reginald Ludwig G. Dalusong, Lesley Jane R. Elacion,
Franz Cedrick R. Mina, Roxzyleen Andreih C. Vasquez, Joseph A. Villarama
Central Luzon State University, Nueva Ecija, Philippines

*Corresponding Author Email: dillaverline0518@gmail.com

Date received: June 22, 2024

Date revised: July 7, 2024

Date accepted: July 13, 2024

Originality: 92%

Grammarly Score: 99%

Similarity: 8%

Recommended citation:

Dilla, V.G., Ludwig, R.L., Elacion, L.J., Mina, F.C., Vasquez, R.A., & Villarama, J. (2024). How modern machinery replaces laborers: A comparative study of their livelihood before and after implementation. *Journal of Interdisciplinary Perspectives*, 2(8), 479-487. <https://doi.org/10.69569/jip.2024.0305>

Abstract. With modernization, the agricultural sector has increasingly adopted modern machinery, raising concerns about its impact on farm laborers, whose roles are being supplanted by these advanced technologies. This study examined the effects of mechanization on the livelihood of farmers in the Science City of Muñoz, Nueva Ecija, Philippines. Employing a phenomenological qualitative approach and convenience sampling, the research focused on five Filipino farmers who participated in in-depth, semi-structured interviews using a validated, researcher-developed interview guide. Data were analyzed using Colaizzi's 7-Step Method. The findings reveal that the prevalence of modern machines has significantly contributed to unemployment and financial hardship among farm laborers, posing challenges to their livelihoods. Additionally, the farmers highlighted the importance of education in the agricultural sector and the erosion of the "bayanihan spirit" (communal unity) due to the introduction of modern machinery. This study underscores the dual-edged nature of mechanization: while enhancing efficiency, it also inflicts substantial socio-economic costs on farm workers. Consequently, it calls for a deeper understanding and proactive measures to address the adverse effects on laborers affected by agricultural mechanization.

Keywords: Agriculture; Farm laborers; Mechanization; Modern machinery; Agricultural workers.

1.0 Introduction

The construction industry and the agricultural sector highly demanded a workforce—laborers were under the working class (with the hierarchical model as the basis); they were the ones in charge of manual labor, production, and the vital role of being the powerhouse of these industries. Employed agricultural workers were to work in crop fields, livestock, and food production facilities. Under the image of having an employer, these workers did not have any part in the possession of the equipment used, much less the land they worked on.

The nature of the workforce reflected the seasonal fluctuations in demand for agricultural labor. Moreover, working hours were long, especially when the planting and harvesting seasons commenced. However, these workloads decreased when off-peak seasons struck. Usually, the majority of employed agricultural workers' livelihoods in first- and third-world countries were based on the demand for them, primarily signed for contractual labor only. As per the report, 26.7%, or approximately 2 billion people, obtained their wages from having a livelihood connected with agriculture. In the Philippines, agriculture also suffered a significant decrease in employment that started with 24.5% (9.7 million) in October 2020, 24.6% (10.77 million) in October 2021, and 22.5% (10.60 million) in October 2022 (Baclig, 2022).

Because agricultural workers' minimum wages were typically low or nonexistent, they chose to maximize their potential and working hours to increase their earnings. However, farm laborers have not extended their shift hours to account for self-sufficiency in essential and significant food; one way is by introducing innovative technology and techniques (Mogato, 2018).

Data found that the 14.2 percent (5.7 million) recorded in October 2020 went for a dip in October 2021 with a 12.4 percent value of 5.4 million. It recently declined in October 2022 with an 11.8 percent decline; this led to 5.6 million losses of skilled workers in the field, fishing, forestry, and farming (Baclig, 2022). Even though the introduction of machinery was evidence of advancement and provided additional livelihood opportunities, it was also the reason for unemployment. Many were affected by the layoffs of agricultural agencies due to the advancement of machinery. In the Science City of Muñoz, the Philippine Rice Research Institute (PhilRice) and the Philippine-Sino Center for Agricultural Technology, government entities, and farms all over the town adopted modern machinery. Meeting the standard set by machines was unlikely for traditional farmers, as the capabilities of this equipment were of high precision for crop farming. Education was a significant factor, as adverse labor shortages affected agricultural production. The spontaneous spread of modern agricultural machinery indeed started taking over in the present time (Zheng et al., 2022; Zhou, 2022).

This study investigated and induced the performance of the laborers included in the decline of manual labor demands due to the prominence of modern machines. This focused specifically on their financial struggles before and after the widespread use of modern machines. Therefore, in line with the forgotten laborers, there was potentially extended assistance to the workers regarding financial and educational difficulties, as well as the further technological enhancement of the machines.

Knowledge and wisdom helped you garner information in your chosen careers and be your leverage for job opportunities. Education gave way to introducing the efficiency and stability that machines provided, leading to a cheaper and more profitable yield because of the long lifespan of these machines and their optimal maintenance for their development and profits. If education was present, the policies would be more effective by then. Based on the collected data, education became the harbinger of successful adoption, establishing a firm foothold that resulted in a bountiful yield (Paltasingh & Goyari, 2018). Furthermore, education was the core of knowledge; it also offered extracurricular activities involving farming and gardening (Bang, 2019). Similarly, farming was widespread in agricultural education as a further level of education for laborers who were interested or agricultural enthusiasts (Rice & Kitchel, 2018).

Farm work—a rigorous process that took months to harvest produce—was never menial work for laborers. One of the factors that contributed to agriculture's mechanization was education. The impact of education on the agriculture industry was undeniably the reason for laborers to broaden their horizons. Skills that benefited them long-term included handling production, marketing, and financial difficulties (Ninh, 2021). Agricultural laborers were characterized by their educational background once they entered the field of mechanization. College-level education encompassed agritourism, where agritourism related to farm visits. The information gathered is considered agricultural literacy (Brune et al., 2020).

Implementing different farming styles and machines improved the technologies that helped farming today. The agricultural sector significantly relied on technology, as it was used in food production and was much more efficient in reaching the needed quota. India has made remarkable progress in terms of agriculture. However, unlike neighboring countries, their horticultural and agricultural productivity could be higher (Kapur, 2018).

Mechanization reflected modernization and provided immediate changes in farming patterns, as not only did it increase production but also involved the financial improvement of a household (Lu, 2009) for primary farm owners in a world where technological advancement had a relevant role in upgrading every sector of the economy with machines. Hence, for both the private and public sectors and the participation of non-governmental organizations, there was no doubt that this increased the usage, popularity, and rapid development of mechanized equipment (Fuad & Flora, 2019).

Employers and field owners who used mechanized machinery to fulfill the heavy-duty farming process mostly looked for farmers with educational attainments and polished skills concerning technology. Education contributed to the inclusive growth of economic and agricultural output. (Wouterse & Badian, 2019). Different handling areas require specific proficiency, especially when the machinery has embedded data needed for total concentration. Laborers needed to input specific data, much more if the job required them to record the data after the machinery was used once it was done with farming.

As time passed, there was no doubt that every industry improved in efficacy. They implemented machines to reduce human labor. The agricultural industry, no less, did go with the revolution, and they implemented mechanization to lessen the manual labor of farmers. Farming after mechanization became increasingly reliant on machinery and technology. Tasks such as planting, harvesting, and tilling were often performed by machines, making farming more efficient and cost-effective, which attained sustainability in agricultural enhancement and food security. It was more desirable to have a set of strategies. More importantly, countries' conditions are derived from their policymaking (Emami et al., 2018). the assistance of technology. More importantly, countries' conditions are derived from their policymaking (Emami et al., 2018).

When traditional, manual, and animal farming fell behind, agricultural machinery helped these things flourish. It eventually boosted medium and low production outputs to achieve environmentally friendly and high-quality agricultural growth (Zhou et al., 2022; Peng et al., 2019). Farm machinery technology followed specific measures, such as cultivation and expanded opportunities to promote agricultural machinery (Chen & Zhang, 2021; Xu & Song, 2021). In the field, the application of machines had advantages such as 1) decreasing the use of agricultural tools and 2) saving the input labor cost. Although manipulating the field by utilizing machines, particularly combined tillage, removed traditional and manual operations like a) turning, b) harrowing, c) ridge raising, d) stubble planting, and e) base fertilizer application (He et al., 2018).

Unlike traditional practice, machines provided ease in farming, faster operations, and better results. The work was no longer tedious, especially in harvesting, as the combine harvester offers two-in-one operations (harvesting and threshing). Moreover, using machines also generated income as owners ventured into farm service provision enterprises. Mechanization had a wide variety of contributions to the agricultural sector. Not only did it enhance agricultural productivity and economic growth, but it also helped reduce labor costs. In addition, the land area doubled in size. Mechanization made farming activities more accessible, such as sowing, planting, fertilizing, and harvesting crops, as it did not involve strenuous and time-consuming labor, unlike before (Heritage Osofowora, 2022).

Back in the ancient period, agriculture and its traditional way were common for sustainability in livelihood. This supported the production of their food. The Philippines produced coconut, mangosteens, papayas, and bananas (Favre, 2019). It is known for its sandy beaches and vast fields (Alyosha, 2020), where the Filipino people still practice traditional farming methods (Healthy Options, 2019). In particular, the Ivatans in Bataan still dip their hands in muddy rice paddies to tend crops through 1) crop rotation, 2) fallowing, 3) water harvesting, and others (Healthy Options, 2019).

The colonization of the West in the country dominated various sectors, including the fields and farms – one of the largest industries (Blancaflor, 2018). Steam-powered machines' popularity changed the labor concept in agriculture. The acceptance of machines is justifiable, as stated; it gave multiple advantages to the country, particularly in its economy, even though it was part of a group of developing ones (Emami et al., 2018).

Researchers were also raising questions regarding the impact of agricultural machinery on agricultural production (Deng et al., 2020). Savings, quality, and efficiency were the two main aspects affected: the level of labor cost caused a significant decline in agricultural profitability (Li et al., 2017) as the price of agricultural machinery was much lower than labor cost (Tian et al., 2020). Thus, farmers who relied on agricultural machinery drastically reduced labor costs (Yao, 2009; Luo & Qui, 2021). In terms of quality and efficiency, agricultural machinery was able to perform actions that effectively improved the utilization rate of agricultural resources. Land leveling and land preparation reduced the need for weed and insect pest control (He et al., 2018; Nam et al., 2021). Other actions

were combined fertilization and sowing, which ensured accuracy and reduced the cost of seeds and fertilizer (Liu & Zhou, 2018).

As countries continued their pursuit of technology, the Philippines needed to catch up with the rising popularity of mechanized farming. Many industries, including agriculture, were beginning to recognize the importance of advanced intelligent systems, whether on farm or fruit classification technology. Ford Tractor was one of those companies that hopped on the advancement of technology in agriculture in the Philippines. They supplied rice planters throughout the country to serve as farmers' friends in maximizing their yield and, simultaneously, lessen the health risks of labor. A *rice planter* was a machine replanting rice seedlings in the paddy field. The farmer must load a mat-type rice nursery and maneuver the machine properly throughout the field as the machine automatically picks the rice and transplants it onto the soil (Food Tractor Philippines, 2023).

A revolutionary guide map was one of the Department of Agriculture's (DA) critical strategies as the national government and private sectors made advancements. The guide map gave the following services: 1) Identifying the recommended crops to be grown in each location in the country, 2) Determining the area of the shallow groundwater tables, 3) Saying the needed fertilizers to patch up the gaps of nutrients in a particular soil, and 4) Acknowledging the limitations of the specific community in terms of poverty (Mogato, 2018).

Aside from the advancement in the innovation of hybridization of rice seed, PhilRice launched mobile and desktop applications in the long run, which they were also using. Launched in 2013, Rice Crop Manager (RCM) efficiently reached out to agricultural laborers, particularly farmers all over the nation, recommending their needs to help in their yield of crops. Currently, RCM has made 1.46 million recommendations (Mogato, 2018). Another of their applications was the Leaf Color Computing (LCC) Application, which was used to check the nitrogen status of rice plants and replace the four-stripped handy "ruler" Leaf Color Chart (Philrice, 2021). PhilRice also developed an application that extended help for farm laborers to increase their value in the chain, called AgriDOC App. This application provides the following services: 1) Recording of expenses and activities, 2) Allowing the users to visit their farms on Google Maps, and 3) Reminding the users of farm-related tasks (Mogato, 2018).

Research studies have shown that manually classifying decreases yield. Factors such as fatigue and lack of training affected the sorting process of fruits. Inaccuracies were the major problem, with high variability following the list of dilemmas (Brosnan & Sun, 2002). Furthermore, manual processing consumes much time and is fragile to its surroundings (Bhargava & Bansal, 2018). As a result, research on machine learning algorithms arose using Random Forest to determine the crystalline coconut maturity level.

These factors highly impacted the laborers; one man must do the job, and the workers must team up. Farmers' responses led up to themes on the impacts of mechanization in their lives: 1) employment, 2) sufficiency of food, 3) education, particularly the youth, 4) income in terms of monthly, and 5) production processes in agriculture (Declaro-Ruedas et al., 2020). Farm laborers adapted coping strategies to the undesired impact of farm mechanization, including 1) minimization and budgeting in food expenses and 2) migrating season to look for alternative jobs as a source of income.

2.0 Methodology

2.1 Research Design

This phenomenological qualitative research design investigated the experiences of laborers affected by mechanization, particularly in the agriculture industry. This grasped common viewpoints and attributed labor experiences in traditional farming to mechanized farming. It discussed the underlying aspects of the unemployment of several farmers in different agencies and barangay in the Science City of Muñoz.

2.2 Research Locale

The study was conducted in two areas in the Science City of Muñoz, Nueva Ecija: a government entity, PhilSCAT, and a farm around Bantug. Science City of Muñoz is a 4th class municipality of Nueva Ecija with a total land area of 14,793 hectares and a present population of 102,823 as of December 2023. It is one of the five cities of the province.

2.3 Research Participants

This qualitative research used convenience sampling. Five (5) participants were from the Science City of Muñoz, Nueva Ecija, Philippines. The laborers came from different entities, making the results more effectively diverse. A code was assigned to each participant to maintain the participants' privacy and/or anonymity. The prepared guide questions were reviewed and validated by five (5) experts composed of statisticians and teachers.

2.4 Research Instrument

During two weeks involving semi-structured interviews with five (5) respondents, the study was guided by a set of 22 open-ended self-constructed guide questions. The instrument was fractionated into three components: 1) informed consent form and data privacy clause, 2) questions on the perspectives and experiences of respondents on how modernization of machinery affects their livelihood as laborers after its implementation, and 3) questions on challenges and opportunities on the outgoing presence of machinery in the agricultural sector.

2.5 Data Gathering and Analysis Procedure

The respondents were contacted for in-person meetings. During the initial meeting, informed consent forms were secured, while the research purpose was explained thoroughly to the participants. A set of researcher-made interview guide questions relating to the farmers' livelihood before and after mechanization was used for all five respondents in a one-on-one semi-structured interview. The respondents were well-informed and willingly agreed to have their interviews documented using audio recordings. The data gathered undergo the 7-step Colaizzi's Method to reach an in-depth understanding: 1) reading the transcript for familiarization, 2) collecting statements with relevance and a sense of the concept that the study investigates, 3) understanding the meanings of the collected statement, 4) bracketing extracted words into themes, 5) identifying the explanation and description of the structure of the phenomenon, 6) generating a report regarding the core of the concept this study investigates and its importance, and 7) proving the validity of the results by letting the participants give feedback.

2.6 Ethical Considerations

The Central Luzon State University (CLSU) Ethics Research Committee (ERC) reviewed and approved this research on March 14, 2023, with an ERC Code 2023-163.

3.0 Results and Discussion

Using a thematic analysis, the answers of the participants were coded and categorized, forming three major themes: (1) difficulty in sustaining livelihood, (2) education and its essential role, and loss of the sense of "*bayanihan* spirit" (communal unity).

Table 1. Themes

Themes	Exemplary Quotations
Difficulty in Sustaining Livelihood	Before, harvesting was done manually; now, machines do it, such as the combine harvester that they pertain to. Because of this, you can't engage anymore in agriculture work by means of hand and sweat, which would lessen your source of income in life.
Education and Its Important Role	Education has a huge role because if you have an enforced educational background, you can have a chance to be successful in life. However, what would [mechanization] contribute when you do not have money to buy machinery?
Loss of the of the Sense of " <i>bayanihan</i> spirit" (communal unity)	Solidarity was no longer eminent since people prioritized their lives, unlike before.

3.1 Difficulty in Sustaining Livelihood

Laborers had difficulty sustaining their livelihood after machines' popularity in the agricultural sector. Participants have acknowledged the unfavorable consequences the machines have brought to them in terms of employment and financial stability that contributes to their overall livelihood. Regardless of the ease the machines gave to physical labor, it also meant to replace the job itself of the laborers: hand tractor plows the field, reaper mows the rice, and thresher separates the rice grain from the straw.

"Before, harvest was done manually; now, machines do it, such as the combine harvester that they pertain to, and because of it, you cannot engage anymore in the agriculture work using hand and sweat. That would lessen your source of income in life."

Subjects could tell that despite the hard work and effort the agriculture industry demanded back then, more income was entering, favoring their life before. With farming being removed from their sources of income and them heavily relying on this, the introduction of machinery agriculture without compensation or plan for the affected laborers caused them to further susceptibility to poverty. One factor of this is the difficulty in meeting their daily needs, which they battled even before the machinery and has increased now after the implementation of machinery.

"The work on agriculture was more difficult back then, but there was more money. Today, life is easier, but the poor are left behind."

"Life was easier back then than it is now; back then, when you had karyada, you had money every day; now, with machinery, we have lost our karyada."

"Those without fields have been affected; they cannot mow, so what will they eat?"

On the other hand, two participants said their lives before and after the implementation felt the same due to market price inflation.

"Our lives were the same as before, but the expenses were minimal. Now, we can hardly save money due to inflation."

Based on the article by Nguyen (2022), food insecurity in the country is in a growth spurt as it only relies on imported food rather than its produce, considering the population to feed.

Due to the unemployment in the agricultural sector, subjects considered changing occupations, such as construction workers and tricycle drivers, as a substitute for their source of income. They have mentioned that their lives with these jobs are better than when in agriculture as they have assurance of money regularly coming in.

"I will choose life at present. Because when I work in construction, it pays daily. It pays higher than what you get in farming. Now, our lives are quite comfortable because of construction work."

As explained by Nakamura (2018), technological unemployment has been nothing new since the advancement of technology and the introduction of machinery. Machinery made people's lives easy. However, they also made their lives difficult, especially the ones in the working class. The findings created awareness of the machines' negative impact on their lives. This is supported by Magbitang et al. (2022), who found that technological innovations such as the mechanized reaper have caused unemployment and migration among farmers. This led the farm workers to engage in alternative livelihood endeavors like poultry and livestock production. Agriculture no longer provides much income despite countless efforts poured into farming. Alternative jobs have become the savior of many modern farmers, who can no longer support their families with farming.

Borah et al. (2024) obtained results that showed the barriers faced by the farmers in Assam, India, to adopting Climate Smart Adaptive Livelihood Technology (CSALT). The most significant problem appeared to be the limited skills regarding using CSALT, which is matched by the farmers' lack of awareness about CSALT in general. The insufficiency of the farmers' resources to invest in the said technology was also identified as an important barrier.

3.2 Education and Its Important Role

Laborers acknowledge the significance of education in finding jobs and operating agricultural machinery. Education is essential to everyone. It helps us reach our highest potential while getting or exploring new ideas. It helps us obtain skills, techniques, information, and knowledge that can aid us in our growth and development, impersonally and personally (Team et al., 2022).

"Education has a huge role because if you have an enforced educational background, you can have a chance to be successful in life. However, what would [mechanization] contribute when you do not have money to buy machinery?"

Education has a vital role in the livelihood of laborers, improving how they can utilize the tools and information they have to be efficient in producing their produce. However, while education is extremely vital-formal education is not available for everyone, so everyone should try to make knowledge readily available.

According to a study conducted in Vietnam by Ninh (2021) on the economic role of education in agriculture, education gives farmers the tools to acquire and apply knowledge to develop marketing, financing, and production solutions. Most of the participants responded that education can help them secure better opportunities for their jobs. In a study set in Nepal by Pudasaini (1983), education in agriculture is more effective for productivity in a modern environment than in a traditional one. This study highlighted the great relevance of education in agriculture, which is in line with Ninh (2021), who found that education helps in the output of rice farming households as it provides them with better management of large farms. Furthermore, this implies that policies aiming to provide quality education to rural people will effectively enhance their income and trigger long-term economic and agricultural growth.

Mbanasor et al. (2024) highlighted that educated farmers are more likely to comprehend new information, including modern improved technologies, which makes them better equipped. This is after they found a significant result regarding the crucial importance of formal education in farmers' decision-making process regarding Climate Smart Agriculture (CSA) methods. They explained that education asserts wider channels to the farmers, including, most importantly, the media, thereby expanding the foundation of their knowledge.

3.3 Loss of the Sense of "bayanihan spirit" (communal unity)

The reduction of manual labor happened when machines replaced them. The sense of "Bayanihan" dissipates with the lack of laborers. The subjects were in harmony with their responses regarding the "Bayanihan" since, without interactions, the unity and cooperation to achieve their goal of harvest, which was once in full swing back then, became absent.

"Solidarity was no longer imminent since people prioritize their own life, unlike before."

Ever since the introduction of machinery into the agricultural sector, laborers have tried to redeem themselves and battle with machines' capabilities. However, as time goes by, machines' competency and efficiency increase, leaving the laborers behind. Hence, the sense of "Bayanihan" was lost. Laborers now only prioritize their families as they think of alternative ways to stay afloat and have their daily necessities met.

According to Medrano et al. (2015), the introduction of machines to help with the labor involved in farming eventually intervened with the farmers' tradition as the "bayanihan" was on the brink of extinction.

The machines helped lessen the laborers' workload as they no longer had to do manual labor. Nevertheless, despite this approach and the efficiency of the machines, it is indisputable that machines significantly impacted the livelihood of laborers and affected the "Bayanihan."

The sense of the farmers' solidarity is slowly dissipating, as stated by Medrano et al. 2015 in which machines did almost everything that farmers could do. This made each farmer far more competitive with the others, further losing camaraderie and solidarity among farmers and their families. Farmers were left with dust as the machines started to take over manual and technical labor.

According to Rodulfo et al. (2021), farmers were met with insufficient farm labor as machines took over. They had experienced difficulties in securing any farming contract, especially during peak season for land preparation, planting, and even harvesting. In their results, it was stated that farm respondents of this study that labor ranged from sufficient to abundant. However, some respondents expressed that securing availability for farm labor, such as land preparation, planting, and manual harvesting, became problematic as machines were used.

With that, work became a struggle as they were left to compromise and fend for themselves, making them look for alternative jobs outside of the range of farming.

Moreover, their chance to farm came infrequently, leading to the loss of "Bayanihan," as they considered themselves first before others. Unity slowly perished as farmers went on their own and took the remaining labor tasks as their own since this was the basis for their wages. They lamented that they had no choice but to think only of themselves and their family, as it was the only way to provide their daily necessities.

Birungi et al. (2024) found the significance of trust and commitment by the farmers of Uganda to each other regarding collective marketing. Their result showed the high level of trust in the integrity and goodwill of the farmers to help each other as being united and performing in large units gives incentives to the farmers. This suggested a strong sense of belonging, obligation, and interest in persevering in marketing the rice collectively.

4.0 Conclusion

Mechanization makes farming more efficient and accessible, yet it comes at a cost. It hurts the livelihood of the laborers, making them seek alternative jobs to sustain life. The results reveal how the themes affect each other. Nueva Ecija is one of the top rice producers in the Philippines. Farming is the sole source of livelihood for almost every household. Due to the rising popularity of mechanized farming, their income is now not the same as before, leading them to resort to a different job or a temporary source of income, usually referred to as a "sideline." This answers the questions focusing on the respondents' financial stability before and after implementing machinery and fulfills the determination of alternative sources of income. Now, education comes into play, as employers prefer adept employees. Even though experience counts as leverage, education is the main decision-maker for employers. However, as stated in the results, education is not available for everyone, as socioeconomic status hinders their right to study. Free education does not exactly mean accessible education, as schools are not present in secluded communities. Hence, this solely explains how education affects an individual's ability to adapt to agricultural sector mechanization. Machines are now their competitors, and educational attainment in job seeking is their dream crusher. They have no choice but to push back communal unity and prioritize themselves and their families first. In conclusion, the continuous advancement of technology and the unwavering implementation of mechanization push farmers to fall behind in the fast-paced environment, which certainly impacts their performances due to the discouragement they encounter.

5.0 Contributions of Authors

The authors confirm their contribution to the paper as follows:

Study conception and design: DILLA, Verline Gaudene A., DALUSONG, Reginald Ludwig G., ELACION, Lesley Jane R., MINA, Franz Cedrick R., VASQUEZ, Roxzyleen Andreih C., VILLARAMA, Joseph A.

Data collection: DILLA, Verline Gaudene A., DALUSONG, Reginald Ludwig G., ELACION, Lesley Jane R., MINA, Franz Cedrick R., VASQUEZ, Roxzyleen Andreih C., VILLARAMA, Joseph A.

Analysis and Interpretation of results: DILLA, Verline Gaudene A., DALUSONG, Reginald Ludwig G., ELACION, Lesley Jane R., MINA, Franz Cedrick R., VASQUEZ, Roxzyleen Andreih C., VILLARAMA, Joseph A.

Draft manuscript preparation: DILLA, Verline Gaudene A., VASQUEZ, Roxzyleen Andreih C., VILLARAMA, Joseph A.

Manuscript revision: DILLA, Verline Gaudene A., VASQUEZ, Roxzyleen Andreih C., VILLARAMA, Joseph A.

6.0 Funding

This research did not receive any particular financial assistance of any kind.

7.0 Conflict of Interests

The authors affirm that they do not have any competing interests.

8.0 References

- Alyosha. (2023, January 29). 20 things the Philippines is known and famous for. Hey Explorer.
- Bacig, C. E. (2022, December 8). PH farms getting empty: Agriculture job loss a worrying trend. PIDS - Philippine Institute for Development Studies.
- Bang, G. H. (2019). A new paradigm to general agricultural education in elementary school. *Journal of Korean Practical Arts Education*, 25(3), 43–59. <https://doi.org/10.29113/skpaer.2019.25.3.004>
- Bhargava, A., Bansal, A. (2018). Fruits and vegetables quality evaluation using computer vision: A review. *Journal of King Saud University - Computer and Information Sciences*, 33 (3), 243–257, <https://doi.org/10.1016/j.jksuci.2018.06.002>
- Birungi, P., Agea, J. G., Bayiyana, I., Kyazze, F. B., Mulugo, L. W., & Ndaula, S. (2024). Smallholder farmers' trust and commitment influence collective marketing outcomes for the rice producer organizations in mid-western Uganda. *International Journal of Agricultural Extension*, 12(1), 51-70. <https://doi.org/10.33687/ijae.012.001.4816>

- Blancaflor, S. (2018, October 1). 120 years after Philippine independence from Spain, Hispanic influence remains. NBC News. <https://www.nbcnews.com/news/asian-america/120-years-after-philippine-independence-spain-hispanic-influence-remains-n912916>
- Brosnan, T., Sun, D. W. (2002). Inspection and grading of agricultural and food products by computer vision systems—a review. *Computers and Electronics in Agriculture*, 36 (2-3), 193-213. [https://doi.org/10.1016/S0168-1699\(02\)00101-1](https://doi.org/10.1016/S0168-1699(02)00101-1)
- Brune, S., Knollenberg, W., Stevenson, K. T., Barbieri, C., & Schroeder-Moreno, M. (2020). The influence of agritourism experiences on consumer behavior toward local food. *Journal of Travel Research*, 60(6), 1318-1332. <https://doi.org/10.1177/0047287520938869>
- Borah, A., Gogoi, P. B., & Rahman, B. (2024). Perceived barriers to the adoption of Climate Smart Adaptive Livelihood Technology (CSALT) by the farmers in flood prone areas of Assam. *International Journal of Environment and Climate Change*, 14(2), 227-231. <https://doi.org/10.9734/IJECC/2024/v14i23940>
- Chen, S. S., & Zhang, X. Q. (2021). Agriculture green and high-quality development of Fujian province under new era. *Sci. Tech. Mana. Res.* 18, 96-104.
- Declaro-Ruedas, M. Y. A., Bais, L. S. (2020). Coping strategies of the farm laborers toward farm mechanization in Central, San Jose, Occidental Mindoro. *Journal of Asian Rural Studies*, 4(1), 109-118. <https://dx.doi.org/10.20956/jars.v4i1.2149>
- Deng, X., Yan, A., Xu, D., & Qi, Y. (2020). Land registration, adjustment experience, and agricultural machinery adoption: Empirical analysis from rural china. *Land*, 9(3), 89. <https://doi.org/10.3390/land9030089>
- Emami, M., Almassi, M., Bakhoda, H. (2018). Agricultural mechanization, a key to food security in developing countries: strategy formulating for Iran. *Agriculture & Food Security*, 7, 24. <https://doi.org/10.1186/s40066-018-0176-2>
- Favre, L. (2019). 10 Things to Know About the Philippines. USNews. <https://www.usnews.com/news/best-countries/articles/2019-06-20/10-things-to-know-about-the-philippines>
- Ford Tractor. (2023). Rice Transplanter in the Philippines: Ford Tractor. Ford Tractor Philippines. <https://fordtractor.ph/rice-transplanter-philippines/>
- Fuad, M. A. F., & Flora, U. M. A. (2019). Farm mechanization in Bangladesh: A review. *International Journal of Research in Business Studies and Management*, 6(9), 15-29. <https://doi.org/10.1016/j.jafr.2021.100225>
- He, J., Li, H. W., Chen, H. T., Lu, C. Y., and Wang, Q. J. (2018). Research progress of conservation tillage technology and machinery. *Transaction of the Chinese Society for Agricultural Machinery*, 49, 1-19.
- Healthy Options. (2019, June 8). Back to our roots: Traditional farming methods in the Philippines. <https://shop.healthyoptions.com.ph/blogs/articles/back-to-our-roots-traditional-farming-methods-in-the-philippines>
- Kapur, R. (2018). Usage of Technology in the Agricultural Sector. *Acta Scientific*, 2(6). <https://actascientific.com/ASAG/ASAG-02-0103.php>
- Li, T., Yu, W., Balenzentis, T., Zhu, J., & Ji, Y. (2017). Rural demographic change, rising wages, and the restructuring of Chinese agriculture. *China Agricultural Economic Review*, 9(4), 478-503.
- Liu, H. H., & Zhou, H. (2018). Analysis on farmers' selection behavior of mechanized-transplantation and its influencing factors: Based on the perspective of link cost and survey data of the main rice producing area in Jiangsu. *Journal of Hunan Agricultural University*, 44(1), 32-37. [https://doi.org/10.13331/j.cnki.jhau\(ss\).2018.01.005](https://doi.org/10.13331/j.cnki.jhau(ss).2018.01.005)
- Lu, F-M. (2009). The role of agricultural mechanization in the modernization of Asian agriculture: Taiwan's experience. *Engineering in Agriculture, Environment, and Food*, 2(4), 124-131. <https://doi.org/10.11165/eaef.2.124>
- Luo, M. Z., & Qui, H. L. (2021). Agricultural machinery socialization service adoption, endowment difference and alleviation of rural economic relative poverty. *South China J. Econ*, 2, 34-51.
- Magbitang, T. D., Fulong, L. V., Sabaulan, J. S., & Ramos, B. A. (2022). Effect of the modern rice harvesting technology to the livelihood of the farm workers in select barangays of an independent city in Northern Luzon. *International Journal of Innovative Science and Research Technology*, 7(9), 901-904. <https://ijisrt.com/assets/upload/files/IJISRT22SEP409.pdf>
- Medrano, J. C., Villanueva, K., & Tindown, D. J. (2015). Rice combine harvester: Its effects to the livelihood of rice-field tenants in a second class municipality. *Asia Pacific Journal of Multidisciplinary Research*, 4(4), 112-118. <https://www.apjmr.com/wp-content/uploads/2016/10/APJMR-2016.4.4.17.pdf>
- Mbanasor, J. A., Kalu, C. A., Okpokiri, C. I., Onwusiribe, C. N., Nto, P. O. O., Agwu, N. M., & Ndukwu, M. C. (2024). Climate smart agriculture practices by crop farmers: Evidence from South East Nigeria. *Smart Agricultural Technology*, 8, 2772-3755. <https://doi.org/10.1016/j.jatech.2024.100494>
- Mogato, A. A. (2018, July 26). In the Philippines, technology is seeping into agriculture. Bworldonline. <https://www.bworldonline.com/special-reports/2018/07/26/175993/in-the-philippines-technology-is-seeping-into-agriculture/>
- Nakamura, H. & Zeira, J. (2018, June 26). Automation and unemployment: Help is on the way. <http://dx.doi.org/10.2139/ssrn.3202622>
- Nam, K., Suk, S. D., & Byeong-il, A. (2021). The empirical analysis of production cost reduction effects from the agricultural machinery rental policy. *Journal of Rural Development*, 44(2), 51-78. <https://doi.org/10.22004/ag.econ.330820>
- Ninh, L. K. (2021). Economic role of education in agriculture: Evidence from rural Vietnam. *Journal of Economics and Development*, 23(1), 47-58. <https://doi.org/10.1108/JED-05-2020-0052>
- Heritage Osofowora. (2022, November 11). Product spotlight - The importance of mechanization as a service. Crop2Cash. <https://www.crop2cash.com.ng/blog/product-spotlight-the-importance-of-mechanization-as-a-service/>
- Paltasingh, K. R., & Goyari, P. (2018). Impact of farmer education on farm productivity under varying technologies: case of paddy growers in India. *Agricultural and Food Economics*, 6(1), 1-19. <https://doi.org/10.1186/s40100-018-0101-9>
- Peng, J., Wu H, Song J, & Li M. (2019). Impact of agricultural mechanization level on farmers' cropping index in Hubei Province. *Zhongguo Shengtai Nongye Xuebao/Chinese Journal of Eco-Agriculture*, 27(3): 380-390. <https://doi.org/10.13930/j.cnki.cjea.180624>
- PHILRICE. (2021, January 12). Leaf color computing app | PRRL. Philippine Rice Research Institute. <https://www.philrice.gov.ph/leaf-color-computing-app/>
- Pudasaini, S. P. (1983). The effects of education in agriculture: Evidence from Nepal. *American Journal of Agricultural Economics*, 65, 509-515. <https://doi.org/10.2307/1240499>
- Rice, A. H., & Kitchel, T. (2018). Agriculture teachers' integrated belief systems and its influence on their pedagogical content knowledge. *Journal of Agricultural Education*, 59(1), 51-69. <https://doi.org/10.5032/jae.2018.01059>
- Rodulfo, V. A., Del Rosario, A. C., Larona, M. V. L., Salandanan, A. D., Bautista, M. G. O., & Querijero, N. J. V. B. (2021). Effects of the extensive use of mechanization on farm labor use and patterns in rice and corn production systems in the Philippines. *Philippine Journal of Agricultural and Biosystems Engineering*, 17(2), 41-42. <https://doi.org/10.48196/017.02.2021.03>
- Tian, X., Yi, F., & Yu, X. (2020). Rising cost of labor and transformations in grain production in China. *China Agricultural Economic Review*, 12(1), 158-172. <https://doi.org/10.1108/CAER-04-2018-0067>
- Wouterse, F., & Badiane, O. (2019). The role of health, experience and educational attainment in agricultural production: Evidence from smallholders in Burkina Faso. *Agricultural Economics*, 50(4), 421-434. <https://doi.org/10.1111/agec.12500>
- Xu, D., & Song, W. (2021). Research on the evaluation of green development of agriculture in the perspective of rural revitalization. *Study Explo*, 3, 130-136.
- Yao, J. L. (2009). Relationship of agriculture mechanization development and cost decrement of three main grain crops. *Journal of Agricultural Mechanization*, 31, 24-27.
- Zheng, H., Ma, W., Guo, Y., & Zhou X. (2022). Interactive relationship between non-farm employment and mechanization service expenditure in rural China. *China Agricultural Economic Review*, 14(1), 84-105. <https://doi.org/10.1108/CAER-10-2020-0251>
- Zhou X, Ma W. (2022). Agricultural mechanization and land productivity in China. *International Journal of Sustainable Development & World Ecology*, 29(6), 530-542. <https://doi.org/10.1080/13504509.2022.205163>

Breaking Free from Plastic: The Philippines' Journey Towards Sustainable Consumption and Production

Eduardo K. De Guzman*, Alfredo M. Estaeban Jr.

College of Education, Nueva Ecija University of Science and Technology, Cabanatuan City, Philippines

*Corresponding Author Email: edkalaw123@gmail.com

Date received: June 7, 2024

Date revised: July 8, 2024

Date accepted: July 14, 2024

Originality: 87%

Grammarly Score: 99%

Similarity: 13%

Recommended citation:

De Guzman, E., & Esteban, A. (2024). Breaking free from plastic: the Philippines' journey towards sustainable consumption and production. *Journal of Interdisciplinary Perspectives*, 2(8), 488–495.
<https://doi.org/10.69569/jip.2024.0303>

Abstract. Plastic pollution presents a significant threat to global ecosystems, with the Philippines being a major contributor to ocean plastic waste. This environmental challenge endangers marine life, public health, and sustainability. The Philippines' No Plastic Policy is a strategic initiative aligned with Sustainable Development Goal (SDG) 12, which promotes responsible consumption and production. SDG 12 aims to enhance resource efficiency, develop sustainable infrastructure, and reduce waste through prevention, recycling, and reuse. This study examined the No Plastic Policy implementation progress in the Philippines, focusing on Cabanatuan City. Data were collected from 260 participants, primarily adults and females, using a quantitative descriptive research design. A researcher-made survey questionnaire facilitated data collection, which was analyzed using descriptive statistical tools. The findings indicate that residents largely adhere to the policy, motivated by the penalties imposed. However, challenges such as inefficient garbage collection, drainage maintenance issues, inadequate garbage trucks, and poor adoption of eco-friendly practices like using eco-bags persist. Despite the penal provisions, the study found that the penalties were not stringent enough to deter violations effectively. A comprehensive information campaign is necessary to improve waste management and disposal systems. The lack of funding was a critical barrier to systematic program management and implementation. Recommendations include enhanced enforcement, regular monitoring, and the promotion of biodegradable alternatives to strengthen policy efficacy. Stricter penalties and collaboration between barangay officials and local government units are essential for better compliance. The study underscores the importance of addressing the identified issues to optimize the impact of the No Plastic Policy, reduce plastic waste, and mitigate pollution. Future research should explore plastic waste management across various sectors to develop holistic, impactful solutions for local and national contexts.

Keywords: No plastic policy; Waste management; Zero waste; Plastic waste; SDG 12.

1.0 Introduction

Plastic pollution is an urgent environmental problem that impacts ecosystems globally, including the Philippines. As a major producer of ocean plastic garbage, the Philippines faces a substantial peril to its marine life, public health, and overall environmental sustainability. This matter requires immediate attention and innovative solutions. Within this framework, the country's efforts to implement a No Plastic Policy align significantly with Sustainable Development Goal (SDG) 12, which seeks to promote responsible consumption and production patterns.

SDG 12 aims to advance resource and energy efficiency, sustainable infrastructure, and access to vital services to create environmentally friendly employment opportunities and enhance the overall well-being of all individuals. The objective is to achieve sustainable management and optimal utilization of natural resources by lowering per

capita global food waste by 50% and substantially decreasing waste generation through prevention, reduction, recycling, and reuse. Enforcing a No Plastic Policy in the Philippines is a crucial measure in line with international endeavors to promote sustainable consumption and production, contributing significantly to these goals. In recent years, the anti-plastic bag norm and associated policies in most countries have seen a growing emergence, which could be interpreted as the product of assessment and studies. The United Nations and other organizations encouraged local movements influencing communities worldwide to level up their approach to applying best practices in dealing with this plastic problem. Moreover, despite the internationalization, campaigns to change behavior and legislation regarding plastic shopping bags remained largely localized. Localities around the globe are still in search of local policies that can be adopted as model cities in terms of plastic pollution management (Clapp & Swanston, 2009).

According to the 2021 report of the World Bank Organization, the Philippines generates a staggering 2.7 million tons of plastic waste annually, 20 percent of which winds up in the ocean, much of it in the form of unrecyclable, single-use sachets (www.greenmatch.co.uk). Plastic pollution has been a growing concern for decades. Single-use plastics (plastic bags and microbeads) are a significant source of this pollution. Although research outlining plastic pollution's environmental, social, and economic impacts is growing, few studies have examined policy and legislative tools to reduce plastic pollution, particularly single-use plastics. (Xanthos and Walker, 2017)

Today, there is no doubt that plastic debris contaminates aquatic (marine and freshwater) habitats and animals globally. The growing scientific evidence demonstrates widespread contamination from plastic debris, and researchers are beginning to understand the material's sources, fate, and effects. As new scientific understanding breeds new questions, scientists are working to fill data gaps regarding the fate and effects of plastic debris and the mechanisms that drive these processes. At the same time, policymakers are working to mitigate this contamination (Rochman et al., 2016).

Even though several cities have approached the problem of plastic pollution using regulatory and information-based strategies, managing waste is still deficient, and plastic waste accumulation remains high. Accordingly, the response to the plastic problem seems to be lacking on a national scale, and therefore, there is likely insufficient capacity and support to address this problem comprehensively. It will be important to continue to observe the effects of these policies so that a continued array of actions can be initiated, strengthen investment in solid waste management, and capacitate the regions from vulnerability to climate change resilience (Schachter & Karasik, 2022).

In a study on plastic bag consumption habits in the Northern Philippines, Crowley, J. (2020) recommends conducting further studies on plastic policy to explore additional details using various variables in diverse contexts. Furthermore, managing plastics necessitates long-term perspectives and moral considerations. Kunesch and Morimoto (2019) argue that action to reduce temporal and discounted elements of trash through tactics like the precautionary principle is vital to "taming" leftover waste.

No Plastic Policy is one of the moves several local government units in the Philippines have implemented to mitigate the negative impact of improper waste disposal in the environment, leading to global warming and other related catastrophes and disasters. It is a timely answer to our compounding problems regarding garbage and waste based on a mosaic of literature. The data identified gaps, suggesting the need for an evidence-based approach for effective implementation and deeper investigations into the operationalization of the policy.

Van Ryan Kristopher, Jaraula, and Paler's (2021) study demonstrated a lack of exploration in the study of plastic policies, highlighting the urgent need to focus on the quantity of data required to address the analysis's deficiency in profile determination.

These justifications underscore the necessity of conducting research on the effectiveness of the policy, enabling the creation of solutions and suggestions for policy development and the implementation of innovative strategies. This study explored the progress made by the Philippines in reducing its dependence on plastic, analyzing the problems, impacts, and potential solutions of implementing and enforcing the No Plastic Policy. This study, therefore, aligns with the objectives of SDG 12 and serves as a model for other countries facing comparable

environmental challenges. This study sought to describe the status of the implementation of the No Plastic Policy in one of the cities in the Philippines, which will significantly provide bases for enhancing approaches, developing new strategies, building awareness for policy direction, and polishing the implementation of policies to attain the maximum benefit towards accountability and sustainability through responsible consumption and production of goods and products with minimal negative impact on pollution.

2.0 Methodology

2.1 Research Design

This study used a quantitative research method, specifically the descriptive design. According to Bhandari (2021), gathering and studying numerical data may be applied to extrapolate results to larger groups, search for patterns and averages, and make forecasts. In this study, the descriptive design was used to gather data on the following: implementation, problems, impact, suggestions, and recommendations related to the "No Plastic" Policy.

2.2 Research Locale

The study was conducted in one of the Philippines' cities, known as the "Tricycle Capital of the Country." Its strategic location along the Cagayan Valley Road is the City's edge, which makes it a major economic, educational, medical, entertainment, and transportation center in the province and nearby areas in the region. It is also known as the "Gateway to the North."

2.3 Research Participants

There were 260 participants in the survey. They belong to different demographics, mostly adults (136), while teenagers constitute 124. Respondents are mostly female (146) since this sector showed interest in voluntarily submitting themselves to the survey. Males account for 114. Simple random sampling is used in this study to select the respondents. This study also obtained data with the aid of purposive sampling, where exclusion and inclusion criteria were considered to complement the integrity of data gathering. Only residents of the City are qualified to participate, and those of legal age have complete knowledge of the topic under investigation.

2.4 Research Instruments

This study used a researcher-made survey questionnaire derived from literature studies and critical observations in the locality. The structured survey questionnaire, administered through Google Forms, was used to collect data. The questionnaire included surveys on the implementation, impact, and problems of the "No Plastic Policy" with suggestions and recommendations. An expert statistician used data taken from sample respondents administered beforehand to determine the instrument's reliability to determine its validity. Experts in Waste Management and Environmental Science conducted face validation. After careful examination by the experts in the field, it was concluded that the instruments' items were clear and the directions were well stated. Pilot testing confirmed the reliability of the questionnaires, obtaining a high correlation coefficient of 0.78 and establishing strong reliability.

2.5 Data Gathering Procedure

The researchers asked their colleagues, students, and parents who are residents of the City to answer the questionnaire sent through the link. Likewise, informed consent was obtained by clearly stating the participants' roles in the study. The proponents ensured voluntary participation without deviating from research ethical considerations. The questionnaires were retrieved and tallied later. The results were later retrieved, recorded, organized, and plotted for computation.

2.6 Data Analysis Procedure

The data gathered were then analyzed using descriptive statistical tools. The weighted mean of the responses was tabulated, computed, and interpreted. The scale serves as a yardstick to determine the descriptive interpretations that become the basis for findings and conclusions.

2.7 Ethical Considerations

This research study followed ethical guidelines, obtaining informed consent from all participants and clearly explaining the purpose of the study, procedures, risks, benefits, and rights of the participants. The identity of the respondents is protected, and personal information is handled securely in compliance with the Data Privacy Act. The study prioritized well-being, minimized potential hazards, and respected their schedules. It promoted equity

and inclusion, avoiding discrimination or bias, and included underrepresented groups. The cooperation of the participants in the study is maintained to ensure an accurate representation of their experiences. The research was conducted with integrity, honesty, and transparency.

3.0 Results and Discussions

3.1 Implementation of No Plastic Policy

Table 1. Descriptive statistics of the level of implementation of No Plastic Policy

Implementation	Mean	Description
1. The City Government punishes any violations of the provisions of the No Plastic Ordinance.	3.50	Excellent
2. Barangay Officials cooperate in the monitoring of proper waste disposal	2.20	Not Satisfactory
3. The residents are compliant with the waste segregation policy	2.20	Not Satisfactory
4. The waste disposal space and container are checked and maintained per household	2.20	Not Satisfactory
5. Cleanliness and beatification at the barangay level are observed	2.30	Not Satisfactory
6. There is minimal use of plastic due to the policy of No Plastic Use	3.00	Satisfactory
7. Household residents in the area follow no plastic policy	3.50	Excellent
8. Residents bring/ use Eco bags and biodegradable bags when buying goods and supplies in markets and malls.	2.30	Not Satisfactory
9. There is Government personnel in charge of checking daily adherence to the policy	2.00	Not Satisfactory
10. Violators are penalized/ fined for offenses	3.50	Excellent
11. The garbage truck regularly collects garbage	3.00	Satisfactory
12. Garbage collectors wear adequate PPE's	2.30	Not Satisfactory
13. Garbage truck has adequate capacity and is well-maintained	2.00	Not Satisfactory
14. Drainage, canals, and waterways are unclogged, de-silted and cleaned to filter plastic and contaminants	2.00	Not Satisfactory
15. Vehicle owners/ Public transport provide trash bins for the passengers	3.30	Excellent
16. Commercial establishments have proper waste disposal area	3.30	Excellent
17. Schools followed strict compliance with the law on garbage and plastic disposal	2.50	Satisfactory
18. Use of plastic is discouraged and fined.	3.50	Excellent
Overall Mean	2.70	Satisfactory

The outcome suggests (see Table 1) that the residents adhere to the policy, as they face penalties for breaking the law. The residents discourage using single plastics, at least during the initial implementation phase. However, there are significant issues with implementing the proper garbage collection scheme, the declogging of canals and drainage to prevent flooding and mosquito spawning, and the inadequacy of garbage trucks, leading to irregular collection and a lack of adherence to safety protocols. Eco bags, one of the best practices for reducing plastic, are not also practiced.

Giving penalties to those who violate the No Plastic Policy conforms with the findings of Ashrafi et al. (2018) and Landon-Lane (2018), who assert that industries must be regulated by command-and-control policies, including regulation of consumption (e.g., fees) and banning single-use products. The results indicate that imposing penalties for offenses related to plastic use and disposal effectively discourages the accumulation of plastic. Because of the imposition of fines and penalties, residents and end-users of plastic adhere positively to the policy. Eisma-Osorio (2021), however, presented an opposing viewpoint on the complexity of plastic consumption. Plastics are still useful, and attempting to exclude them from the world can lead to discovering that the possible remedy is worse than the ailment. Some argue that treating "plastic" as "waste" is an incorrect approach to the problem. As a result, bioplastics have been developed to compete with other uses of arable land, such as animal and human food production. They may hasten changes in land use, such as deforestation. In this case, the environmental harm remains unabated. It only turns into another kind of damage. Instead, the secret is to turn plastic into a resource by consistently recycling it and treating it as renewable.

Pastorfide (2021), on the other hand, attributes the effective implementation of the policy in Cabanatuan City to the initiative of the local government in disseminating information about the "No Plastic Ordinance" under the law of solid waste management (SWM) in urban areas. However, the effectiveness is not completely observable, as this study indicates salient factors that need further attention to make the implementation plausible to achieve a responsive result. The result of this study concerning the implementation of plastic policy provides a basis for action to be taken, including cooperation and synergy among stakeholders, leveling up in the strict compliance to the policy, and a whole community approach to tackling the menace of plastic pollution onward effective garbage

and pollution management through systematic implementation approach. Concretization of the policy is the key element of a successful policy implementation emanating from public and government support.

3.2 Problems Regarding Implementation of No Plastic Policy

Table 2. Descriptive statistics of problems regarding implementation of No Plastic Policy

Problems	Mean	Description
1. Lack of oversight by a government agency in charge.	3.70	Strongly Agree
2. Lack of cooperation among LGUs and residents	3.32	Strongly Agree
3. Inadequate funds to carry out the program/policy	3.80	Strongly Agree
4. Violations are rampant	3.57	Strongly Agree
5. There is no monitoring and follow-up done by the designated agency	3.50	Strongly Agree
6. There is a lack of information about the negative impact of plastic	3.10	Agree
7. Business establishments are not compliant with the “no plastic policy.”	3.35	Strongly Agree
8. The program should be incentivized for the well-disciplined and obedient barangay/establishment	3.25	Strongly Agree
9. Bringing Eco bags and using biodegradable plastics are not a requirement for buyers/consumers in any market/supermarket/Mall/stalls	3.50	Strongly Agree
10. More stiffer penalties and fines are not imposed	3.90	Strongly Agree
Overall Mean	3.50	Strongly Agree

Findings (see Table 2) implied that, although there are already penal provisions in place, there is a lack of stiffer penalties to discourage offenders from violating the law. The imposed penalty only serves as a minimal deterrent, as the respondents observed that transgressions remain rampant. It also implies the need for a more comprehensive information campaign to enhance the waste management and disposal system, particularly concerning plastic. The lack of funds for the systematic management and implementation of the program is another systemic problem that requires urgent action.

This aligns with the findings of a study by Vimal, Mathiyazhagan, Agarwal, Luthra, and Sivakumar (2020), which suggests that the government should take decisive action by providing financial support and recommendations to establish a strategic regulation committee to monitor the issue. Alternative sources of bags also need to be made available to reduce the reliance on single-use plastic bags. The study findings are expected to create a single-use, plastic-free environment. However, implementing zero-waste policies needs strong support from national government agencies and legislators, according to Alegado (2020). He added that curbing plastic pollution requires collective action and proactive collaboration among various sectors and stakeholders. Thus, the government needs to take strong steps in giving financial support and recommendations to form the strategic regulation committee to monitor the issue. Alternative sources of recyclable or eco-friendly bags also need to be made available as alternatives to reduce the reliance on single-use plastic bags. The findings of the study are expected to create a single-use plastic-free environment. More so, a study by Rola (2019) specified that accomplishments indicated a poor level of performance. Complete adherence to the legislation is still lacking as a result of a lack of resources, institutional support at the local level, and capacity. Funds should be allocated to LGUs at the municipal and barangay levels to control plastic garbage. An effective solid waste management system is required to collect separated solid waste.

Non-compliance of stakeholders in implementing the policy, defiance of the violators and continued indiscriminate use of plastic, lack of support from local executives in terms of resources and logistics, and inability to formulate new concepts inviting good practices are elements that make up an imperfect implementation of policy. Most authors see plastic recycling methods and innovations as solutions to contain pollution, but they should be complemented by awareness, enculturation of discipline, obedience, and accountability aside from policy initiatives (Tibbetts, 2015). The problems of plastic policy implementation, as perceived by the respondents, are perennial factors cited as contributing to unresolved and continuing production and accumulation of substances that fester our communities toward a morbid ecosystem.

3.3 Impact of No Plastic Policy

The result (see Table 3) implies that the policy on plastic use is impactful in penalizing violators and making people aware of the existing policy. There are cases where violators are penalized upon committing the offense, which shows the eagerness of the local government to implement the policy and impose penalties. However, it is interesting to note that respondents believed that the use of plastic is still rampant, as we can observe in various

places where no personnel in charge is designated to monitor the transgressions of the residents with the policy and that it has not been reduced. This coincides with the result of the respondents' recommendation that proper monitoring should be done to elevate the policy implementation to its full extent.

Table 3. Descriptive statistics of the impact of No Plastic Policy

Impact of No Plastic Policy	Mean	Description
1. Plastic has been reduced	2.20	Disagree
2. Violators are penalized	3.40	Strongly Agree
3. The volume of garbage collection has been minimized significantly	2.10	Disagree
4. Cluttering of garbage has been avoided	2.30	Disagree
5. City residents follow the rules on the No Plastic Policy	2.10	Disagree
6. Single use of plastic is not rampant	2.00	Disagree
7. Government agency is serious in its implementation of the policy	2.20	Disagree
8. People became more aware of the negative effects of Plastic use	2.50	Agree
Overall Mean	2.35	Disagree

Overall, the result shows that the policy's impact on reducing garbage and its detrimental effect on the environment has not been fully achieved. This is contrary to the conclusion that the “No Plastic Ordinance” in the urban area is properly implemented by the local government unit (LGU) of Cabanatuan City (Alegado, 2020). Wichai-Utcha and Chavalparit (2019) concluded in their study that we can enhance our plastic waste management by enacting new laws or revising existing ones. These measures include imposing plastic bag fees, reinforcing the 3Rs measures, and promoting adopting a circular economy within plastic value chains. Since the study results show that garbage cluttering is still prevalent, we need to implement proper ways to keep pollution at bay or significantly reduce it through the 3 R's and other measures. This means that government agencies should enhance their campaigns to achieve significant results.

According to Bueta (2022), the Philippines is facing unimaginable problems with plastic pollution, with inadequate policies in place to abate this fiasco. Being the third largest contributor to waste products only confirms the inadequacies of the initial government initiatives. Though other Asian countries are beginning to limit their dependence on importing plastics (Liang et al., 2021), it may seem that the opposite is ostensible in the Philippines. The results validated that residents are not fully compliant with the policy and that single-use plastic is still rampant. This further explains why garbage volumes accumulate like mountains. If these problems persist as a vicious cycle, we will later face compound problems of having our landfills filled with trash we cannot cater to anymore. This will eventually put our society at risk, making us vulnerable to calamities and health risks.

3.4 Solutions/Recommendations

Table 4. Descriptive statistics of the solutions/recommendations

Solutions/Recommendations	Mean	Description
1. Enforce the law/policy seriously.	3.70	Strongly Agree
2. Impose a stiffer penalty	3.70	Strongly Agree
3. Offending establishments should not be given permits to operate	3.50	Strongly Agree
4. Secure the cooperation of Barangay officials	3.60	Strongly Agree
5. Employ regular and proper monitoring of program implementation	3.80	Strongly Agree
6. Encourage recycling, reuse and reduce culture among consumers/ residents	3.80	Strongly Agree
Overall Mean	3.68	Strongly Agree

The results indicate that the respondents consider most of the suggestions significant for effective program or policy implementation. Regular monitoring of the policy is needed, as is the use of alternate materials as a substitute for plastic, which is biodegradable and environmentally friendly. Recycling, reusing, and reducing non-biodegradable materials should be boosted. Business entities should not also be given permits once they violate the policy of non-compliance with the requirements of the law, like illegally selling plastic items that compound the problem of enormous plastic waste that degenerates our ecosystem, our atmosphere, and our environment. According to Nielsen, Holmberg, and Strippel (2019), there have been many examples of policies implemented leading to reduced plastic bag consumption; however, this paper also identifies key challenges, including resistance to the regulations, uncertainty in obtaining the complete scenario, and the disadvantages of the regulations. It is, however, observed that the implementation phase of this policy being carried out by the local and national agencies suggests further revisit and serious attention.

Policymakers must collaborate with academics and NGOs to provide the private sector and consumers with detailed, suitable, short- and long-term strategies that promote pro-environmental behavior by encouraging reuse and discouraging single-use practices, including clear duration times, targets, detailed guidelines, and facilities. Businesses must know their customers' value orientations and avoid penalizing approaches. Combining a ban and a penalty while offering a small fee as an alternative option and maintaining acknowledgment and communication with stakeholders would result in better consumer feedback (Sedtha et al., 2022). In most cities, the cooperation of the community and local officials is crucial to making the policy work. The concerted efforts of all stakeholders are paramount to attaining the program objectives underlying the movement's or cause's success. Alegado (2020) suggests that the city should also focus on training households on recycling their waste in connection with their segregation to continuously reduce the waste collected by the city. To help preserve and maintain the cleanliness and safety of the environment, the residents should continuously follow the city's ordinances.

4.0 Conclusion

The residents are abiding by the no-plastic policy, although it is not implemented well due to inadequate enforcement and monitoring. As a result, some offenders are not penalized, and the policy is not having as much impact as it could. One way to improve policy implementation is to impose stiffer penalties. This would deter people from violating the policy and encourage them to comply. Additionally, barangay officials and local government units (LGUs) should cooperate more fully to ensure the policy is enforced and monitored properly. Another way to improve the policy is to promote the use of eco-bags. This would help reduce the amount of plastic waste generated. Additionally, the barangay officials and LGU could provide residents with discounted or free eco bags. The result entails that the policy implementation is poor, debunking previous studies. The problems identified in the study, such as poor garbage collection, rampant use of plastic, lack of cooperation, lack of oversight and monitoring, and minuscule fund allocation, should be addressed to reduce plastic waste and pollution. The limitation of the study calls for considerations, like a study on plastic waste management implementation in schools, barangays, and other rural areas involving stakeholders using other variables that can be conducted to formulate sound and contextual solutions with a potential impact on solving plastic pollution problems on both local and national scales.

5.0 Contributions of Authors

The lead author, Eduardo K. De Guzman, contributed to the manuscript's conception, design, analysis, and writing. Alfredo M. Esteban Jr., the co-author, contributed to the editing and revisions of the manuscript.

6.0 Funding

The authors have not availed themselves of funding support for this research. They have undertaken the research on their own volition using personal resources, hoping that their efforts will significantly contribute to the existing literature and body of knowledge.

7.0 Conflict of Interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

8.0 Acknowledgment

The authors would like to acknowledge Nueva Ecija University of Science and Technology, College of Education Administrators and Faculty, for their moral support, which boosted their motivation to accomplish this study.

9.0 References

- Alegado, J., (2020). Philippines: Banning Single-Use Plastics at the National Level and Strengthening Existing Laws Needed to Curb Plastic Pollution Crisis. Heinrich Böll Foundation.
- Baraceres, E.L. (2016). Practical Research 1. Rex Book Store. 2016. Quezon City
- Bueta, G. R. (2022). Prospects for transitioning from a linear to circular economy in developing Asia: Circular Economy Policy Initiatives and Experiences in the Philippines: Lessons for Asia and the Pacific and beyond. Asian Development Bank Institute.
- Clapp, J., & Swanston, L. (2009). Doing away with plastic shopping bags: international patterns of norm emergence and policy implementation. *Environmental Politics*, 18(3), 315-332. doi:10.1080/09644010902823717
- Crowley, J. (2020). Plastic bag consumption habits in the Northern Philippines. *Resources Conservation and Recycling*, 160, 104848. DOI:10.1016/j.resconrec.2020.104848
- Eisma-Osorio, R. L. (2021). Navigating in a Sea of Plastics: A Critical Reflection on the Legal Responses in the Philippines to Marine Plastic Debris. *Marine Plastic Pollution and the Rule of Law*, 11(1), 63-95. DOI : 10.22851/kjll.2021.11.1.002
- Galang, A. (2013). City Gets Serious in No- Plastic Drive. *Punto Central Luzon*. <https://punto.com.ph/city-gets-serious-in-no-plastic-drive/>
- Kunesch, N and Morimoto, R (2019), "The "wickedness" of trashing the plastics age: limitations of government policy in the case of the Philippines", SOAS Department of Economics Working Paper No. 231, London: SOAS University of London.
- Liang, Y., Tan, Q., Song, Q., & Li, J. (2021). An analysis of the plastic waste trade and management in Asia. *Waste Management*, 119, 242-253. doi:10.1016/j.wasman.2020.09.049.
- Nielsen, T. D., Holmberg, K., & Strippel, J. (2019). Need a bag? A review of public policies on plastic carrier bags-Where, how and to what effect?. *Waste management*, 87, 428-440. doi:10.1016/j.wasman.2019.02.025
- Republic Act 10173. Data Privacy Act of 2012. <https://privacy.gov.ph/data-privacy-act/>
- Rochman, C. M., Cook, A. M., & Koelmans, A. A. (2016). Plastic debris and policy: Using current scientific understanding to invoke positive change. *Environmental toxicology and chemistry*, 35(7), 1617-1626. doi:10.1002/etc.3408

- Rola, A. C. (2019). Managing Plastic Waste and the Role of Local Governments. National Academy of Science and Technology Philippines. Available online: <https://www.nast.ph/index.php/downloads/category/151-single-use-plastics>.
- Schachter, J., and R. Karasik. 2022. "Plastic Pollution Policy Country Profile: Philippines." NI PB 22-10. Durham, NC: Duke University.
- Sedtha, S., Nitivattananon, V., Ahmad, M. M., & Cruz, S. G. (2022). The First Step of Single-Use Plastics Reduction in Thailand. *Sustainability*. 2023; 15(1):45. doi:10.3390/su15010045
- Tibbetts J. H. (2015). Managing marine plastic pollution: policy initiatives to address wayward waste. *Environmental health perspectives*, 123(4), A90–A93. doi:10.1289/ehp.123-A90
- Trimarchi, M., Kiger, P. J., & Giuggio, V. M. (2023, November 30). Top 10 eco-friendly substitutes for plastic. HowStuffWorks Science. <https://science.howstuffworks.com/environmental/green-tech/sustainable/5-plastic-substitutes.htm>
- Ukpanah, I. (2024). Top 10 Countries Producing Most Plastic Waste. GreenMatch. <https://www.greenmatch.co.uk/blog/10-countries-producing-most-plastic-waste>
- Van Ryan Kristopher, R. G., Jaraula, C. M. B., & Paler, M. K. O. (2021). The nexus of macroplastic and microplastic research and plastic regulation policies in the Philippines marine coastal environments. *Marine Pollution Bulletin*, 167, 112343. doi:10.1016/j.marpolbul.2021.112343
- Vimal, K. E. K., Mathiyazhagan, K., Agarwal, V., Luthra, S., & Sivakumar, K. (2020). Analysis of barriers that impede the elimination of single-use plastic in developing economy context. *Journal of Cleaner Production*, 272, 122629. doi:10.1016/j.jclepro.2020.122629
- Wichai-utcha, N., Chavalparit, O. 3Rs Policy and plastic waste management in Thailand. *J Mater Cycles Waste Manag* **21**, 10–22 (2019). doi:10.1007/s10163-018-0781-y
- Xanthos, D., & Walker, T. R. (2017). International policies to reduce plastic marine pollution from single-use plastics (plastic bags and microbeads): a review. *Marine pollution bulletin*, 118(1-2), 17-26. doi:10.1016/j.marpolbul.2017.02.048

Influence of Self-Efficacy, Teachers' Stress, and Demographics on the Teachers' Work Commitment and Intention to Stay

Christine Joy C. Borres^{1*}, Joel D. Potane²

¹Capitol University, Cagayan de Oro City, Philippines

²City College of Cagayan de Oro City, Cagayan de Oro City, Philippines

*Corresponding Author Email: christine22borres@gmail.com

Date received: June 19, 2024

Date revised: July 10, 2024

Date accepted: July 16, 2024

Originality: 92%

Grammarly Score: 99%

Similarity: 8%

Recommended citation:

Borres, C.J., & Potane, J. (2024). Influence of self-efficacy, teachers' stress, and demographics on the teachers' work commitment and intention to stay. *Journal of Interdisciplinary Perspectives*, 2(8), 496-511.

<https://doi.org/10.69569/jip.2024.0296>

Abstract. The study aimed to determine the influence of self-efficacy, stress, and demographics on work commitment and intention to stay among elementary public school teachers. The study employed a descriptive-correlational research design to ascertain the relationship between and among the variables. Regression analysis was used to establish which existing variables significantly affected teachers' work commitment and intention to stay. Proportionate stratified random sampling was used to select 126 teacher respondents. Data were gathered through survey questionnaires validated by experts. Results revealed that teachers have high self-efficacy, moderate stress, moderate commitment, and high intention to stay. There was a significant difference in teachers' self-efficacy when grouped by age and gender, while stress showed no significant difference concerning demographics. Teachers' self-efficacy in student engagement impacts work commitment. Teachers' stress in terms of workload and instrumental support are significant predictors of teachers' work commitment. Additionally, gender and teaching experience were significant predictors of work commitment. While teachers' self-efficacy in student engagement significantly influenced their intention to stay, teachers' stress did not influence their intention to stay. Similarly, none of the examined demographic profiles significantly influenced teachers' intention to stay. Moreover, commitment to students and school statistically influenced teachers' intention to stay. In conclusion, teachers with a strong sense of efficacy in student engagement demonstrate a more profound commitment to their work. The major concepts of George Homans' Social Exchange Theory hold because teachers' high levels of self-efficacy across domains suggest a positive exchange dynamic within the educational environment.

Keywords: Commitment; Demographics; Intention to stay; Self-efficacy; Stress; Teachers.

1.0 Introduction

The teaching profession is essential in the development and success of societies worldwide. One of the most crucial factors influencing a teacher's intention to stay in the profession is their level of work commitment. In the study by Cagape et al. (2021) on work commitment among public school teachers in Davao City, Philippines, teachers' dedication to their work is emphasized. It highlights that teachers must maintain a strong commitment to delivering excellent learning experiences accessible to all learners. Despite the negative impact of social and psychological factors, teachers' determination to remain in the profession reflects their professional commitment (Ulaş & Şenel, 2020).

However, teachers' intention to stay remains a significant issue in many educational systems (Shuls & Flores, 2020). In the Philippine context, some teachers leave public schools in the Philippines and seek other careers that are typically unrelated to teaching. Some may pursue their dreams abroad or seek new jobs in different educational institutions (Jordan & Oliva, 2022), leading to HR challenges like recruitment costs, training, and losses from hiring inexperienced teachers. In connection to teachers' work commitment, self-efficacy plays a vital role in influencing work commitment as it represents an individual's confidence in their ability to complete tasks effectively (Zeb & Nawaz, 2016). Individuals with high self-efficacy tend to invest more effort and exhibit greater dedication to their work. One of the studies conducted in the Philippines indicates that the teachers had high levels of self-efficacy in their ability to engage students and their capacity to develop and implement effective teaching strategies (Antonio, 2023). Consequently, highly committed teachers in private and public schools in the Philippines exhibit better performance, intention to stay, and a solid enthusiasm to contribute to the school's overall success (Malagsic et al., 2021).

Despite teaching being a noble profession, the working circumstances of teachers may lead to higher stress levels (Kabito & Wami, 2020). The study by Rabago-Mingoa (2017) found that teachers in secondary schools in the Philippines face high stress levels related to their jobs. This stress can be attributed to factors including the demands of their profession. Additionally, personal factors like difficulties in balancing work and personal life, along with economic aspects such as salaries and insufficient compensation, also increased the stress these teachers experienced. These factors can result in physical and mental fatigue, leading to poor performance and difficulty completing tasks (Torkaman et al., 2017), which may affect their commitment as teachers. Moreover, teachers' mental health can indirectly impact their students (Agyapong et al., 2022). When teachers are experiencing mental health issues, it can create a less conducive learning environment, potentially hindering the academic growth of their students.

In this context, it has been observed that demographic factors like gender and age can impact teachers' stress levels (Bashaija et al., 2022; Agai-Demjaha et al., 2015). On the other hand, in Philippine public schools, demographic factors like age, position, and education showed no influence on teachers' work commitment. However, a connection was found between teachers' gender and their commitment to their work, with female educators displaying a higher level of commitment than their male counterparts (Cagape et al., 2021). Nevertheless, further research is needed to explore the connection between demographic factors and teachers' efficacy, stress, commitment, and intention to stay, particularly within the Philippine public school setting. Also, only a few studies in the Philippine setting explore the relationship between teachers' self-efficacy, stress, demographics, and teachers' commitment and intention to stay in the profession, particularly within public schools. Thus, a research gap exists in understanding how these factors influence teachers' work commitment and decision to remain in the profession and within their respective organizations.

Hence, this study investigated the influence of self-efficacy, teachers' stress, and demographics on teachers' work commitment and intention to stay. Specifically, it examined the extent to which teachers' self-efficacy, stress, and demographics predict teachers' work commitment and intention to stay.

2.0 Methodology

2.1 Research Design

The study utilized the descriptive-correlational research design. Correlational research helps predict and explain relationships between variables without conducting experiments (Seeram, 2019). The descriptive design ascertained teachers' self-efficacy regarding student engagement, instructional strategies, and classroom management. Moreover, it determined the teachers' stress in terms of workload, student behavior, and instrumental support. Then, it was used to identify the level of teachers' work commitment in terms of commitment to students, commitment to teaching, commitment to school, and commitment to the profession. It was also used to determine the teachers' intention to stay. According to Siedlecki (2020), descriptive methods provide methodical, factual, and accurate descriptions regarding the information, characteristics, and connections of the phenomenon under study. Likewise, this research design makes it possible to identify the study's research variables' features, frequency patterns, trends, and categorizations. Finally, ANOVA was utilized to determine whether there were significant differences among variables. Then regression was employed to establish which existing variables significantly affected teachers' work commitment and intention to stay.

2.2 Research Locale

The study was conducted in the eight (8) public elementary schools of the Don Carlos I district, located in the Northern part of Bukidnon, under the Division of Bukidnon. Bukidnon is a landlocked province in the Northern Mindanao region of the Philippines. It is known for its mountainous terrain, extensive forests, and agricultural lands that produce a variety of crops. Also, it is home to several indigenous tribes, such as the Bukidnon, Higaonon, Manobo, Matigsalug, Talaandig, Tigwahanon, and Umayamnon. Furthermore, Bukidnon is also a popular destination for ecotourism and adventure activities. Don Carlos is a municipality located in the Bukidnon province of the Philippines.

2.3 Research Participants

The study's respondents included public elementary teachers from eight (8) public elementary schools in the Don Carlos I district for the school year 2023-2024. The respondents were randomly selected using a list randomizer. All the schools are under the Division of Bukidnon, Region X. The population comprises 186 permanent public elementary school teachers. Using the Raosoft Calculator, with a margin of error of 5% and a confidence level of 95%, a sample size of 126 was generated.

2.4 Research Instrument

The study utilized a survey questionnaire divided into five parts. Part I collected demographic information such as age, gender, position, teaching experience, and educational attainment. Part II assessed teachers' self-efficacy using the Teachers' Sense of Efficacy Scale (TSES) by Tschannen-Moran and Hoy (2001). Part III was a researcher-made questionnaire that evaluated teachers' stress. Part IV measured teacher work commitment using the Teacher Commitment Scale by Thien et al. (2014), with modifications for clarity. Part V, developed by the researcher, assessed teachers' intention to stay and was informed by studies on school leadership, compensation, support, workload, and career development. To evaluate the instrument's validity, the Content Validity Index and Face Validity Index were calculated as described by Yusoff (2019), achieving satisfactory levels. Pilot testing with 30 public elementary teachers from a different district confirmed reliability, with Cronbach's Alpha ranging from 0.702 to 0.945 across various domains. In the rule of thumb for Cronbach's alpha, a value of 0.70 above is acceptable, 0.80 above is good, and a value above 0.90 is considered excellent (George & Mallery, 2003).

2.5 Data Gathering Procedure

To gather data for the study, the researcher first sought permission from the Schools Division Superintendent to conduct the survey. Upon approval, requests were sent to the Public Schools District Supervisor and the School Principals of the participating elementary schools. With their consent, teacher-respondents signed a consent form before completing the questionnaire. The researcher distributed the questionnaires with instructions, emphasizing thoughtful and truthful responses to ensure accuracy. Additionally, the researcher conducted Key Informant Interviews (KII) with five teachers to deepen the discussion and counter-validate the quantitative results. The data was then tabulated, analyzed, and interpreted.

2.6 Ethical Considerations

This research adhered to ethical principles, ensuring the voluntary participation of the respondents who had the freedom to join or withdraw from the study at any stage. Measures were taken to minimize any potential harm, including physical, social, and psychological while safeguarding the dignity and well-being of the teacher participants. Confidentiality of research data was maintained throughout, protecting the rights of respondents and upholding scientific integrity. Furthermore, to prevent research misconduct, proper dissemination of results was ensured.

3.0 Results and Discussion

3.1 Teachers' Demographic Profile

Table 1 shows the age distribution of the respondents. The largest group is the 30-39 years category, with 46 respondents (36.5%). Next is the 40-49 years category with 37 respondents (29.4%), followed by the 50-59 years category with 26 respondents (20.6%). The 20-29 years category has 13 respondents (10.3%); the smallest group is the 60-65 years category with four respondents (3.2%). This indicates that a significant portion of teachers are young and active.

Table 1. Frequency and percentage distribution of respondents in terms of age

Age (in years)	Frequency	Percentage (%)
20-29	13	10.3
30-39	46	36.5
40-49	37	29.4
50-59	26	20.6
60-65	4	3.2
Total	126	100.0

Table 2 shows the gender distribution of survey respondents. Most respondents are female, with 106 individuals (84.1%), while 20 males comprise 15.9%. This suggests that teaching remains predominantly female-dominated. Sarabia (2020) noted that teaching, especially in basic schools, is a common employment option for women.

Table 2. Frequency and percentage distribution of respondents in terms of sex

Sex	Frequency	Percentage (%)
Male	20	15.9
Female	106	84.1
Total	126	100.0

Table 3 shows the positions of survey respondents. The largest group is "Teacher 1" with 77 respondents (61.1%), followed by "Teacher 3" with 29 respondents (23.0%). "Teacher 2" has nine respondents (7.1%), "Master Teacher 1" has eight respondents (6.3%), and "Master Teacher 2" is the least common with three respondents (2.4%).

Table 3. Frequency and percentage distribution of respondents in terms of position

Position	Frequency	Percentage (%)
Teacher 1	77	61.1
Teacher 2	9	7.1
Teacher 3	29	23.0
Master Teacher 1	8	6.3
Master teacher 2	3	2.4
Total	126	100.0

This result indicates that only a few teacher respondents were promoted from Teacher 1 to higher positions, highlighting challenges in career advancement. Sarabia (2020) attributes this to a lack of training and opportunities for advanced education. Furthermore, Leyne (2019) emphasizes strong competition and numerous requirements as additional barriers. Additionally, the promotion process within DepEd is hindered by delays, excessive requirements, and limited higher positions. Chapter 6 of the DBM Manual restricts Master Teachers in elementary schools to 10% of the staff, with specific ratios for Master Teachers I and II.

Table 4. Frequency and percentage distribution of respondents in terms of teaching experience

Teaching Experience	Frequency	Percentage (%)
1-10	64	50.8
11-20	26	20.6
21-30	28	22.2
31-40	8	6.3
Total	126	100.0

Table 4 shows the teaching experience of survey respondents. The largest group has 1-10 years of experience, with 64 respondents (50.8%). The next largest group has 21-30 years of experience, comprising 28 respondents (22.2%). Those with 11-20 years of experience include 26 respondents (20.6%). Eight respondents (6.3%) have 31-40 years of experience. This clearly shows that many of the elementary teachers in the district have relatively young teaching experience. However, it is essential to note that this does not imply any lack of competence in their profession. Contrary to the notion that novice teachers might be less proficient, various studies offer limited support for this claim (Graham et al., 2020).

Table 5 shows the educational attainment of survey respondents, categorized into five groups. The largest group holds a "master's degree with units," with 52 respondents (41.3%). The second largest group has a "bachelor's degree," with 40 respondents (31.7%). "Master's degree graduates" comprise 29 respondents (23.0%). A small

percentage have a "Doctorate Degree with units" (3.2%), with four respondents, and only one respondent (0.8%) has completed a "Doctorate Degree."

Table 5. Frequency and percentage distribution of respondents in terms of educational attainment

Educational Attainment	Frequency	Percentage (%)
Bachelor Degree	40	31.7
Master's Degree with units	52	41.3
Master's Degree Graduate	29	23.0
Doctorate Degree with units	4	3.2
Doctorate Degree Graduate	1	0.8
Total	126	100.0

The data indicates that many participants pursue graduate degrees to enhance their skills and qualifications. The DepEd encourages this to promote career advancement (Sarabia, 2020). Abellana and Abadiano (2020) state that teachers pursue graduate education to improve teaching competence, advance positions, and foster self-confidence and self-fulfillment, benefiting the working environment and learner achievement. However, only a few have advanced to the Ph.D. level, likely due to the significant time, financial resources, and access to educational opportunities required (Amutabi, 2018).

3.2 Teachers' Level of Self-efficacy

Table 6. Consolidated findings of the respondents' level of self-efficacy

Self-efficacy	Mean	SD	Description	Interpretation
Efficacy in Student Engagement	3.49	0.45	Strongly Agree	Very High Self-Efficacy
Efficacy in Instructional Strategies	3.33	0.45	Strongly Agree	Very High Self-Efficacy
Efficacy in Classroom Management	3.35	0.49	Strongly Agree	Very High Self-Efficacy
Total Measure	3.39	0.41	Strongly Agree	Very High Self-Efficacy

Table 6 indicates a consistently very high level of self-efficacy across all three dimensions. The total measure has a mean of 3.39, reinforcing the respondents' overall very high self-efficacy across these areas. Tschannen-Moran et al. (2007) stated that teachers with high self-efficacy are likelier to handle classroom dynamics skillfully. The teachers in the study exhibited expert management of classroom dynamics as they demonstrated very high levels of self-efficacy in controlling disruptive behavior, ensuring learners adhere to rules, calming disruptive pupils, and establishing effective classroom management systems. This means that despite the different characters and attitudes of each pupil, the teachers were able to manage them in class.

The respondents' high self-efficacy in student engagement suggests that they can effectively motivate and inspire pupils lacking interest in school. Their proficiency in this area indicates they are skilled at fostering an environment where students perform well academically and develop a genuine appreciation for learning. Halim and Ahmad (2015) support this notion, stating that teachers with a strong belief in their capabilities are inclined to positively impact student behavior and academic performance. Furthermore, the respondents' high self-efficacy in instructional strategies implies that teachers can provide alternative explanations when pupils encounter confusion and are proficient in implementing diverse teaching approaches in the classroom. Lazarides and Warner (2020) further agree with this notion, stating that teachers with high self-efficacy are more open to new methods, set challenging goals, plan well, tackle problems, and adjust strategies when needed.

3.3 Teachers' Level of Stress

Table 7. Consolidated findings of the respondents' assessment of the level of teachers' stress

Indicators	Mean	SD	Description	Interpretation
Workload	3.08	0.52	Agree	Moderately Stressed
Student Behavior	2.94	0.52	Agree	Moderately Stressed
Instrumental Support	2.48	0.62	Disagree	Low Stress
Total Measure	2.83	0.44	Agree	Moderately Stressed

Table 7 reveals a pattern of moderate stress in workload (Mean=3.08) and student behavior (Mean=2.94), and instrumental support (Mean=2.48) is associated with lower stress levels. The total measure (Mean= 2.83, SD= 0.44), describes the moderately stressed educators. This result suggests that teachers, on average, experience moderate

levels of stress in their roles. This result aligned with the study by Agai-Demjaha et al. (2015), which found that teachers experienced moderate stress in their work. The results implied that the educators are moderately stressed due to workload and student behavior but experience relatively low stress levels related to instrumental support. It suggested that while some aspects of their job create stress, such as managing workload and student behavior, instrumental support from colleagues and administrators contributes to mitigating overall stress levels.

This finding is supported by the study of Gustafson (2015), which proposed that enhancing the collaborative capacity of the teaching profession through organizational changes at both district and school levels has the potential to effectively reduce the stress experienced by teachers. This is because when teachers collaborate more with their colleagues and administrators, it helps them address problems such as workload and student behavior. Notably, teachers who receive adequate instrumental support experience relatively low-stress levels. On the other hand, regardless of whether teacher respondents report relatively moderate stress levels because of workload, it is still critical to address workload-related stress. This is critical not just for the well-being of teachers but also for maximizing the overall effectiveness of the educational system. Furthermore, teachers' frequent exposure to poor student behaviors without assistance or solutions might cause higher stress over time. According to Zedan (2012), disruptive behavior among learners increases teacher stress, which can harm classrooms.

3.4 Teachers' Level of Work Commitment

Table 8. Consolidated findings of the respondents' level of work commitment

Indicators	Mean	SD	Description	Interpretation
Commitment to students	3.46	0.51	Strongly Agree	Highly Committed
Commitment to teaching	3.20	0.51	Agree	Moderately Committed
Commitment to school	2.90	0.54	Agree	Moderately Committed
Commitment to profession	2.70	0.62	Agree	Moderately Committed
Total Measure	3.06	0.39	Agree	Moderately Committed

Table 8 indicates a range of commitment levels across these dimensions. The commitment to students is notably high (Mean=3.46, SD=0.51), signifying a highly committed stance. In contrast, the commitment to teaching (Mean=3.20, SD=0.51), commitment to the school (Mean=2.90, SD=0.54), and commitment to the teaching profession (Mean=2.70, SD=0.62) signify a moderately committed stance overall. The total measure supports the conclusion of a moderately committed stance overall. The result is consistent with Altun's (2017) study, which found that committed teachers exhibit a genuine interest in their students' improvement and actively engage in various teaching methods to improve learning efficiency. Committed educators focus on making meaningful connections with students, maintaining respectful relationships, and creating an environment conducive to learning. Overall, teachers display a significant commitment to their students, teaching, and the teaching profession, and they generally find value in their work.

3.5 Teachers' Level of Intention to Stay

Table 9. Consolidated findings of the level of teachers' intention to stay

Indicators	Mean	SD	Description	Interpretation
School Leadership	3.32	0.48	Strongly Agree	Very High Intention to Stay
Teaching Support	3.14	0.44	Agree	High Intention to Stay
Workload	2.46	0.65	Disagree	Low Intention to Stay
Career Development	3.00	0.52	Agree	High Intention to Stay
Compensation and Benefits	2.50	0.71	Disagree	Low Intention to Stay
Total Measure	2.88	0.42	Agree	High Intention to Stay

Table 9 shows that school leadership stands out with a high intention to stay (Mean=3.32, SD=0.48) while teaching support also reflects a high intention to stay (Mean=3.14, SD=0.44). The results revealed a range of intention to stay levels across Career development (Mean=3.00, SD=0.52), indicating a high intention to stay. On the other hand, workload (Mean=2.46) and compensation and benefits (Mean=2.50) both show a low intention to stay. The total measure, however, reflects an overall high intention to stay, with a mean of 2.88 and a standard deviation of 0.42. The results emphasized school leadership and teaching support's crucial role in fostering a high intention to stay among educators. This notion aligns with previous studies indicating that enhancing school leadership,

fostering positive teacher relationships, and principal support contribute to higher teacher retention (Hughes et al., 2014; Kraft et al., 2016).

On the other hand, one of the striking findings in the results is the challenges related to workload, compensation, and benefits. These challenges significantly impact educators' intention to stay, leading to low intention in these areas. The demanding nature of their responsibilities characterizes the workload of Filipino public school teachers, as they are focused on enhancing instruction and burdened with excessive extraneous tasks. Despite numerous studies addressing these challenges and repeated calls for action, this issue remains one of the most pressing in education (Tarraya, 2023). It is apparent that completely resolving this issue will require significant time and effort, and teachers can only hope for the best. In terms of compensation, teachers may need more than salaries to compensate them for the intense workload they endure. Ismael et al. (2021) further highlighted the inconsistency between teachers' commendable efforts and their insufficient compensation. Anderson (2022) also argued that raising salaries and providing attractive incentives is vital for attracting and retaining high-quality educators. Therefore, while resolving this issue may require long-term commitment and budget adjustments, the long-term benefits are undeniable.

3.6 Teachers' Self-Efficacy When Grouped According to Demographics

Table 10 shows the test results comparing teachers' self-efficacy across age groups in three dimensions. No significant differences were found in student engagement ($F=1.807$, $p=0.149$) and instructional strategies ($F=1.307$, $p=0.275$), suggesting similar confidence levels among teachers of different ages.

Table 10. Test of difference in teachers' self-efficacy when grouped according to their age

Teachers' Self-Efficacy	Age Group				F-value (p-value)	Remarks	Decision
	20-29 (n=13)	30-39 (n=46)	40-49 (n=37)	50-65 (n=30)			
Efficacy in Student Engagement	3.37 (.56)	3.41 (.49)	3.52 (.39)	3.63 (.35)	1.807 (.149)	Not significant	Fail to Reject Ho
Efficacy in Instructional Strategies	3.25 (.42)	3.25 (.49)	3.36 (.41)	3.44 (.42)	1.307 (.275)	Not significant	Fail to Reject Ho
Efficacy in Classroom Management	3.29 ^{ab} (.38)	3.16 ^a (.49)	3.48 ^b (.48)	3.51 ^b (.45)	4.632** (.004)	Significant	Reject Ho
Total Measure	3.30 (.42)	3.28 (.44)	3.45 (.38)	3.53 (.35)	2.903* (.038)	Significant	Reject Ho

Note: **significant ($p<.01$), *significant ($p<.05$), ^{ab}based on Duncan test

However, a notable finding emerges in the dimension of efficacy in classroom management, where a significant difference is evident ($F=4.632$, $p=0.004$). A post hoc Duncan test reveals that teachers in the age group 50-65 (Mean=3.51) exhibit significantly higher efficacy in classroom management compared to those in the 30-39 age group ($p<0.05$). The total measure of teachers' self-efficacy also demonstrates a significant difference among age groups ($F=2.903$, $p=0.038$). Thus, age significantly affects the teachers' self-efficacy in classroom management but not their efficacy in student engagement and instructional strategies.

In the teacher-respondents' context, older teachers have gained experience dealing with challenging students and managing larger classes. As a result, they display greater confidence in managing their classes. Moreover, they develop a deeper understanding of their strengths and weaknesses and ample opportunities to refine their classroom management strategies over time. This idea finds support in the studies conducted by Aloka and Bojuwoye (2013) and Ünal and Ünal (2012), both of which indicate that older teachers excel in managing student disciplinary issues and are more effective in teaching and managing classrooms compared to their younger counterparts.

Table 11 presents the results of a test examining the differences in teachers' self-efficacy based on gender. The results revealed no significant differences in self-efficacy between male and female teachers. Specifically, for efficacy in student engagement ($t=1.484$, $p=0.140$), instructional strategies ($t=1.340$, $p=0.183$), classroom management ($t=0.863$, $p=0.390$), and the total self-efficacy measure ($t=1.368$, $p=0.174$), no statistically significant variations were observed between the male and female groups. Thus, gender has no significant difference in teachers' efficacy.

Table 11. Test of difference in teachers' self-efficacy when grouped according to their gender

Teachers' Self-Efficacy	Gender Group		t-value (p-value)	Remarks	Decision
	Male (n=20)	Female (n=106)			
Efficacy in Student Engagement	3.63 (.40)	3.46 (.45)	1.484 (.140)	Not significant	Fail to Reject Ho
Efficacy in Instructional Strategies	3.45 (.38)	3.30 (.46)	1.340 (.183)	Not significant	Fail to Reject Ho
Efficacy in Classroom Management	3.44 (.47)	3.33 (.49)	.863 (.390)	Not Significant	Fail to Reject Ho
Total Measure	3.50 (.37)	3.37 (.41)	1.368 (.174)	Not Significant	Fail to Reject Ho

Note: not significant ($p > .05$)

This result aligns with Rani and Jain (2023), who found no significant difference between male and female teachers' self-efficacy. These findings suggest that gender does not influence teachers' perceptions of their teaching skills and competence. This observation reflects what can be seen locally, where stereotypes do not constrain both male and female teachers and are confident in their tasks regardless of their gender. It demonstrates a positive shift from traditional gender biases towards a more inclusive teaching environment where all teachers feel empowered to excel.

Table 12 presents the results of a test examining differences in teachers' self-efficacy based on their position within the educational hierarchy.

Table 12. Test of difference in teachers' self-efficacy when grouped according to their position

Teachers' Self-Efficacy	Position Group				F-value (p-value)	Remarks	Decision
	Teacher 1 (n=77)	Teacher 2 (n=9)	Teacher 3 (n=29)	Master Teacher (n=11)			
Efficacy in Student Engagement	3.47 ^b (.46)	3.11 ^a (.49)	3.57 ^b (.39)	3.73 ^b (.26)	3.802* (.012)	Significant	Reject Ho
Efficacy in Instructional Strategies	3.31 ^a (.41)	3.08 ^a (.52)	3.34 ^a (.49)	3.66 ^b (.41)	3.122* (.028)	Significant	Reject Ho
Efficacy in Classroom Management	3.32 ^{ab} (.47)	3.03 ^a (.42)	3.38 ^b (.52)	3.77 ^c (.33)	4.583** (.004)	Significant	Reject Ho
Total Measure	3.36^b (.39)	3.07^a (.45)	3.43^b (.42)	3.72^c (.26)	4.724** (.004)	Significant	Reject Ho

Note: **significant ($p < .01$), *significant ($p < .05$), ^{abc}based on Duncan test

The study found significant differences in teachers' self-efficacy across positions, with Master Teachers exhibiting higher levels of self-efficacy than teachers in other positions. Specifically, Master Teachers reported significantly higher self-efficacy in student engagement, instructional strategies, classroom management, and the total measure of self-efficacy. These findings suggest that Master Teachers have higher self-efficacy in various aspects of teaching, which may be attributed to their experience and expertise in managing classrooms, engaging students, and implementing effective instructional strategies. The extent of their tasks significantly impacts their confidence levels, aligning with Bandura's Social Cognitive Theory, which emphasizes the role of experience in building self-efficacy. Huang and Yin (2018) noted that higher-ranking teachers have greater job satisfaction and efficacy. Recognizing and nurturing the strengths of educators at various career stages is crucial. The Department of Education supports this by having Master Teachers mentor less experienced teachers, fostering their growth and effectiveness.

Table 13. Test of difference in teachers' self-efficacy when grouped according to their teaching experience

Teachers' Self-Efficacy	Teaching Experience Group				F-value (p-value)	Remarks	Decision
	1-10 (n=64)	11-20 (n=26)	21-30 (n=28)	31-40 (n=8)			
Efficacy in Student Engagement	3.45 (.50)	3.55 (.40)	3.52 (.39)	3.56 (.35)	0.463 (.709)	Not significant	Fail to Reject Ho
Efficacy in Instructional Strategies	3.30 (.46)	3.27 (.45)	3.43 (.46)	3.38 (.33)	0.724 (.540)	Not significant	Fail to Reject Ho
Efficacy in Classroom Management	3.27 (.47)	3.38 (.53)	3.46 (.48)	3.53 (.41)	1.506 (.216)	Not significant	Fail to Reject Ho
Total Measure	3.34 (.43)	3.40 (.40)	3.47 (.39)	3.49 (.33)	.851 (.469)	Not significant	Fail to Reject Ho

Note: not significant ($p > .05$)

Table 13 presents the results of a test examining differences in teachers' self-efficacy based on their teaching experience. The results show no significant differences in teachers' self-efficacy across different teaching experience groups. There were no statistically significant variations in efficacy for student engagement ($F=0.463$, $p=0.709$), instructional strategies ($F=0.724$, $p=0.540$), classroom management ($F=1.506$, $p=0.216$), or overall self-efficacy ($F=0.851$, $p=0.469$). This suggests that years of teaching experience do not significantly affect self-efficacy in these areas within the sample studied.

Table 14. Test of difference in teachers' self-efficacy when grouped according to their educational attainment

Teachers' Self-Efficacy	Educational Attainment Group				F-value (p-value)	Remarks	Decision
	Bachelor (n=40)	Master degree with units (n=52)	Master degree Graduate (n=29)	Doctoral Level (n=5)			
Efficacy in Student Engagement	3.46 (.47)	3.44 (.47)	3.57 (.37)	3.75 (.43)	1.125 (.342)	Not significant	Fail to Reject Ho
Efficacy in Instructional Strategies	3.33 (.47)	3.31 (.41)	3.30 (.48)	3.70 (.45)	1.227 (.303)	Not significant	Fail to Reject Ho
Efficacy in Classroom Management	3.34 (.49)	3.32 (.49)	3.38 (.50)	3.55 (.51)	.369 (.775)	Not significant	Fail to Reject Ho
Total Measure	3.38 (.43)	3.36 (.41)	3.42 (.39)	3.67 (.44)	.922 (.433)	Not significant	Fail to Reject Ho

Note: not significant ($p>.05$)

Table 14 presents the results of a test examining differences in teachers' self-efficacy based on their educational attainment. The results indicate no significant differences in teachers' self-efficacy across the different educational attainment groups. For efficacy in student engagement ($F=1.125$, $p=0.342$), instructional strategies ($F=1.227$, $p=0.303$), classroom management ($F=0.369$, $p=0.775$), and the total measure of self-efficacy ($F=0.922$, $p=0.433$), no statistically significant variations were observed. Thus, educational attainment has no significant difference in teachers' self-efficacy.

These findings indicate that educational background does not significantly impact teachers' confidence in student engagement, instructional strategies, and classroom management. This implies that pursuing higher education may not necessarily correlate with significant teacher self-efficacy differences. However, Abun et al. (2021) suggest that higher educational attainment can improve self-efficacy by enhancing teaching skills. Overall, significant differences in self-efficacy are observed by age and position but not by gender, teaching experience, or educational attainment, leading to the rejection of the null hypothesis regarding age and position.

3.7 Teachers' Stress When Grouped According to Demographics

Table 15. Test of difference in teachers' stress when grouped according to their age

Teachers' Stress	Age Group				F-value (p-value)	Remarks	Decision
	20-29 (n=13)	30-39 (n=46)	40-49 (n=37)	50-65 (n=30)			
Workload	2.96 (.50)	3.17 (.45)	2.94 (.55)	3.17 (.55)	1.973 (.122)	Not significant	Fail to Reject Ho
Student Behavior	2.68 (.50)	3.04 (.45)	2.95 (.52)	2.86 (.62)	2.002 (.117)	Not significant	Fail to Reject Ho
Instrumental Support	2.47 (.53)	2.50 (.65)	2.34 (.62)	2.63 (.60)	1.368 (.289)	Not significant	Fail to Reject Ho
Total Measure	2.70 (.45)	2.90 (.39)	2.75 (.44)	2.89 (.47)	1.526 (.211)	Not significant	Fail to Reject Ho

Note: not significant means $p\text{-value} > .05$ (no statistical difference)

Table 15 presents the results of a test examining differences in teachers' stress based on their age group. The results indicate no significant differences in teachers' stress across the different age groups. For workload ($F=1.973$, $p=0.122$), student behavior ($F=2.002$, $p=0.117$), instrumental support ($F=1.368$, $p=0.289$), and the total measure of stress ($F=1.526$, $p=0.211$), no statistically significant variations were observed. Thus, age has no significant difference in teachers' stress. These findings suggest that teachers of different age groups experience similar stress levels related to workload, student behavior, and instrumental support. Therefore, the lack of significant differences implies that age may not be a determining factor in the stress levels reported by teachers.

Table 16. Test of difference in teachers' stress when grouped according to their gender

Teachers' Stress	Gender Group		t-value (p-value)	Remarks	Decision
	Male (n=20)	Female (n=106)			
Workload	3.06 (.39)	3.08 (.54)	-.164 (.870)	Not significant	Fail to Reject Ho
Student Behavior	3.08 (.51)	2.91 (.53)	1.303 (.195)	Not significant	Fail to Reject Ho
Instrumental Support	2.61 (.62)	2.46 (.62)	.975 (.332)	Not Significant	Fail to Reject Ho
Total Measure	2.92 (.36)	2.82 (.45)	.920 (.359)	Not Significant	Fail to Reject Ho

Note: not significant means p-value > .05 (no statistical difference)

Table 16 presents the results of a test examining differences in teachers' stress based on gender. The results indicate no significant differences in teachers' stress between male and female groups. For workload ($t=-0.164$, $p=0.870$), student behavior ($t=1.303$, $p=0.195$), instrumental support ($t=0.975$, $p=0.332$), and the total measure of stress ($t=0.920$, $p=0.359$), no statistically significant variations were observed. Thus, gender has no significant difference in teachers' stress. These findings suggest that male and female teachers experience similar stress levels related to workload, student behavior, and support. This aligns with the study by Mahmood et al. (2022), which found no significant gender differences in teachers' stress.

Table 17. Test of difference in teachers' stress when grouped according to their position

Teachers' Stress	Position Group				F-value (p-value)	Remarks	Decision
	Teacher 1 (n=77)	Teacher 2 (n=9)	Teacher 3 (n=29)	Master Teacher (n=11)			
Workload	3.03 (.50)	3.19 (.31)	3.15 (.57)	3.19 (.59)	.791 (.501)	Not Significant	Fail to Reject Ho
Student Behavior	2.91 (.47)	3.03 (.56)	3.00 (.56)	2.90 (.55)	.317 (.813)	Not Significant	Fail to Reject Ho
Instrumental Support	2.36 (.60)	2.78 (.44)	2.71 (.61)	2.49 (.72)	3.185* (.026)	Significant	Reject Ho
Total Measure	2.77 (.39)	3.00 (.33)	2.96 (.55)	2.86 (.45)	1.877 (.137)	Not Significant	Fail to Reject Ho

Note: *significant ($p<.05$)

Table 17 presents the results of a test examining differences in teachers' stress based on their position. The results indicate a significant difference in teachers' stress based on their position for instrumental support ($F=3.185$, $p=0.026$). However, no significant differences were found for workload ($F=0.791$, $p=0.501$), student behavior ($F=0.317$, $p=0.813$), and the total measure of stress ($F=1.877$, $p=0.137$). Thus, teachers' stress has no significant difference when grouped according to demographic profile. These findings suggest that while stress levels regarding instrumental support differ significantly by position, overall stress related to workload and student behavior is similar across Teacher 1, Teacher 2, Teacher 3, and Master Teachers. Teacher 2 reports the highest stress regarding instrumental support (Mean=2.78), indicating they may struggle to access necessary resources and support for their teaching duties. In contrast, Master Teachers exhibited the lowest stress levels overall, likely benefiting from more extensive training and support systems that help them manage their responsibilities more effectively.

Table 18. Test of difference in teachers' stress when grouped according to their teaching experience

Teachers' Stress	Teaching Experience Group				F-value (p-value)	Remarks	Decision
	1-10 (n=64)	11-20 (n=26)	21-30 (n=28)	31-40 (n=8)			
Workload	3.05 (.50)	3.14 (.49)	3.08 (.55)	3.18 (.64)	.310 (.818)	Not significant	Fail to Reject Ho
Student Behavior	2.92 (.49)	3.04 (.44)	2.89 (.58)	2.91 (.84)	.420 (.739)	Not significant	Fail to Reject Ho
Instrumental Support	2.39 (.62)	2.41 (.61)	2.65 (.59)	2.89 (.59)	2.512 (.062)	Not significant	Fail to Reject Ho
Total Measure	2.79 (.41)	2.86 (.36)	2.87 (.48)	2.99 (.67)	.705 (.551)	Not significant	Fail to Reject Ho

Note: not significant ($p>.05$)

Table 18 displays the results of a test examining differences in teachers' stress based on their teaching experience. The findings revealed that there are no significant differences in teachers' stress based on their teaching experience for any of the dimensions measured: workload ($F=0.310$, $p=0.818$), student behavior ($F=0.420$, $p=0.739$), instrumental support ($F=2.512$, $p=0.062$), and the total measure of stress ($F=0.705$, $p=0.551$). Thus, teaching experience has no significant difference to teachers' stress. The findings suggest that teachers' stress levels do not significantly vary based on their years of teaching experience. Factors such as integrating technology, adapting to changing curricula, and meeting the needs of diverse students may contribute more substantially to stress levels. Despite differences in experience, teachers may encounter similar challenges, resulting in comparable stress levels.

Table 19. Test of difference in teachers' stress when grouped according to their educational attainment

Teachers' Stress	Educational Attainment Group				F-value (p-value)	Remarks	Decision
	Bachelor (n=40)	Master degree with units (n=52)	Master degree Graduate (n=29)	Doctoral Level (n=5)			
Workload	3.05 (.41)	3.07 (.55)	3.16 (.58)	3.06 (.64)	.316 (.814)	Not significant	Fail to Reject Ho
Student Behavior	2.93 (.49)	2.85 (.56)	3.11 (.47)	2.94 (.59)	1.580 (.198)	Not significant	Fail to Reject Ho
Instrumental Support	2.33 (.61)	2.63 (.62)	2.39 (.60)	2.80 (.48)	2.532 (.060)	Not significant	Fail to Reject Ho
Total Measure	2.77 (.34)	2.85 (.50)	2.89 (.44)	2.93 (.32)	.579 (.630)	Not significant	Fail to Reject Ho

Note: not significant ($p>.05$)

Table 19 presents the results of a test examining differences in teachers' stress based on their educational attainment. The findings indicate that there are no significant differences in teachers' stress based on their educational attainment for any of the dimensions measured: workload ($F=0.316$, $p=0.814$), student behavior ($F=1.580$, $p=0.198$), instrumental support ($F=2.532$, $p=0.060$), and the total measure of stress ($F=0.579$, $p=0.630$). Thus, educational attainment has no significant difference in teachers' stress. These results suggest that teachers' stress levels do not significantly vary by educational attainment. Factors beyond academic qualifications, such as coping mechanisms, may influence stress more prominently. Galanakis et al. (2020) found that teachers with postgraduate degrees might experience less stress, but stress management is not typically included in graduate programs.

Overall, demographic factors like age, gender, position, teaching experience, or educational attainment do not significantly impact perceived stress levels, highlighting the need for a comprehensive approach to addressing teacher stress.

3.8 Influence of Teachers' Self-Efficacy on Teachers' Work Commitment

Table 20. Stepwise regression analysis of teachers' work commitment on self-efficacy predictors

Model	Unstandardized Coefficients		t-value	p-value	Remark	Decision
	B	S. E.				
(Constant)	2.277	0.268	8.506	.000	Significant	Reject Ho
Student Engagement	0.226	0.076	2.966**	.004	Significant	Reject Ho

Note: $R^2 = .059$ ANOVA for Regression: $F=8.798^{**}$, $p=.004$, **-significant at .01 level

Excluded Predictors: Instructional Strategies, and Classroom Management

Fitted Regression Model: $Y = 2.277 + .226 \times \text{student engagement}$

Table 20 displays the regression analysis results examining the impact of teachers' self-efficacy on their work commitment. The analysis revealed significant insights into the relationships between these variables. The model includes a statistically significant constant term of 2.277 ($t=8.506$, $p=.000$), indicating a baseline level of work commitment when other predictors are zero. The predictor "teachers' efficacy in student engagement" emerges as significant ($\beta=.226$, $t=2.966$, $p=.004$), indicating that when teachers feel confident in engaging students effectively, their work commitment tends to be higher. This aligns with Miller (2020), who found teacher self-efficacy in student engagement to predict commitment significantly.

The overall model's R-squared value of .059 suggests that the included predictors explain approximately 5.9% of the variance in teachers' work commitment, confirmed by the significant ANOVA for regression ($F=8.798$, $p=.004$), rejecting the null hypothesis. The regression equation, $Y = 2.277 + .226 \times \text{Efficacy in Student Engagement}$, implies that for every unit increase in teachers' efficacy in student engagement, there is an expected increase of 0.226 units in their work commitment, holding other variables constant. In the context of respondents, confidence in effectively engaging students may stem from training workshops and educational programs by DepEd, covering topics like student engagement and new teaching trends. These efforts reflect teachers' strong commitment to acquiring skills necessary for effective student engagement, contributing to their commitment to the profession.

3.9 Influence of Teachers' Stress on Work Commitment

Table 21. Simultaneous regression analysis of teachers' work commitment on teachers' stress predictors

Model	Unstandardized Coefficients		t-value	p-value	Remark	Decision
	B	S. E.				
(Constant)	1.840	0.209	8.799	.000	Significant	Reject Ho
Workload	0.161	0.073	2.205	.029	Significant	Reject Ho
Student Behavior	0.095	0.076	1.249	.214	Not significant	Fail to Reject Ho
Instrumental Support	0.181	0.055	3.278***	.001	Significant	Reject Ho

Note: $R^2 = .224$ ANOVA for Regression: $F=13.043^{***}$, $p=.000$. ***-significant at .001 level

Teacher Work Commitment (Y) – dependent variable

Excluded Predictor: Student Behavior

Fitted Regression Model: $Y = 1.840 + .161*Workload + .181*Instrumental\ support$

Table 21 presents the regression analysis, which identified workload and instrumental support as significant predictors of teachers' work commitment, with coefficients of .161 ($p = .029$) and .181 ($p = .001$), respectively. Student behavior did not significantly predict work commitment ($p = .214$). The model explained 22.4% of the variance in work commitment.

The ANOVA for regression further confirms the model's significance ($F=13.043$, $p=.000$). The fitted regression equation is $Y = 1.840 + .161Workload + .181Instrumental\ Support$. It means that the initial level of work commitment is 1.840. As teachers' workload stress increases by one unit, their work commitment is predicted to increase by 0.161 units. Likewise, their work commitment is predicted to increase by 0.181 units for every one-unit increase in instrumental support. Therefore, this implies that higher levels of workload and instrumental support are associated with higher levels of work commitment.

This result contradicts the findings of Laily and Wahyuni (2023), who revealed that as job stress increases, teachers' level of commitment tends to decrease. However, the teachers in this study perceived an increased workload as a reflection of their abilities and contributions to their profession, which led to increased commitment as they strived to meet their demands. The key informant interviews revealed that teachers view workload as a trigger that brings out their talents, skills, and resourcefulness, as well as an opportunity for professional growth and learning. Deadlines and responsibilities were also seen as factors that make teachers highly productive and focused, with time management being a key coping mechanism.

These findings highlight the importance of managing workload and providing instrumental support to enhance teachers' work commitment. However, it is essential to acknowledge the study's limitations and the context of the findings, as they may not be generalizable to all teaching contexts. Further research in diverse settings is needed to validate and contextualize these results.

3.10 Influence of Teachers' Demographics on Work Commitment

Table 22 displays the regression analysis results examining the influence of demographic profiles on teachers' work commitment. The model's R-squared value of 0.189 indicates that these demographic variables can explain approximately 18.9% of the variance in work commitment. The ANOVA test for regression was significant ($F=2.01$, $p=0.026$), indicating that the regression model is statistically significant in predicting work commitment. Furthermore, the regression analysis reveals a significant effect of gender on work commitment, with female teachers showing lower commitment than male counterparts ($B = -0.259$, $t = -2.702$, $p = 0.008$).

This aligns with the findings of Korso (2013), who reported higher professional commitment among male teachers. However, these results contradict the study by Islam et al. (2012), which found female teachers to have higher levels of commitment. Moreover, teaching experience was also found to significantly impact work commitment, with teachers having 31-40 years of experience exhibiting higher levels of commitment. This is consistent with the study by Agrawal and Jain (2020), which suggested that longer service in the teaching profession leads to stronger emotional attachment and commitment to the school. At the same time, the results showed that age, position, and educational attainment did not significantly impact teachers' work commitment.

Table 22. Regression analysis of teachers' work commitment on teachers' demographic profiles

Model	Unstandardized Coefficients		t-value	p-value	Remark	Decision
	B	S. E.				
Age						
20-29	Ref	--	--	--	--	
30-39	.071	.119	.592	.555	Not significant	Fail to Reject Ho
40-49	.133	.140	.951	.344	Not significant	Fail to Reject Ho
50-65	.114	.180	.636	.526	Not significant	Fail to Reject Ho
Gender						
Male	Ref	--	--	--	--	
Female	-.259	.096	-2.702**	.008	Significant	Reject Ho
Position						
Teacher 1	Ref	--	--	--	--	
Teacher 2	-.127	.136	-.930	.354	Not significant	Fail to Reject Ho
Teacher 3	-.018	.114	-.162	.872	Not significant	Fail to Reject Ho
Master teacher	-.046	.163	-.281	.779	Not significant	Fail to Reject Ho
Teaching Experience						
1-10	Ref	--	--	--	--	
11-20	.168	.118	1.418	.159	Not significant	Fail to Reject Ho
21-30	.225	.141	1.595	.113	Not significant	Fail to Reject Ho
31-40	.492	.191	2.580*	.011	Significant	Reject Ho
Educational Attainment						
Bachelor degree	Ref	--	--	--	--	
Master Degree with units	.086	.085	1.012	.314	Not significant	Fail to Reject Ho
Master Degree Graduate	.132	.100	1.312	.192	Not significant	Fail to Reject Ho
Doctorate level	.246	.190	1.294	.198	Not significant	Fail to Reject Ho

Note: $R^2 = .189$ ANOVA for Regression: $F=2.01^*$, $p=.026$ **-significant at .01 level

*-significant at .05 level

3.11 Influence of Teachers' Self-efficacy on Intention to Stay

Table 23 indicates that efficacy in "student engagement" significantly contributed to teachers' intention to stay, with a coefficient of .361 ($t= 3.097$, $p= .002$). This means that as teachers' confidence in their ability to engage students increases, their likelihood of staying in the teaching profession also increases.

Table 23. Simultaneous regression analysis of teachers' intention to stay on teachers' self-efficacy predictors

Model	Unstandardized Coefficients		t-value	p-value	Remark	Decision
	B	S. E.				
(Constant)	1.528	.291	5.259	.000	Significant	Reject Ho
Student Engagement	.361	.117	3.097**	.002	Significant	Reject Ho
Instructional strategies	-.002	.117	-0.020	.984	Not significant	Fail to Reject Ho
Classroom Management	.031	.107	0.288	.774	Not significant	Fail to Reject Ho

Note: $R^2 = .147$ ANOVA for Regression: $F=8.205^{***}$, $p=.000$. **-significant at .01 level

Teacher Intention to Stay (Y) – dependent variable

Fitted Regression Model: $Y = 1.528 + .361 \times \text{student engagement}$

The overall model's goodness of fit was represented by the R-squared value of .147, indicating that the included predictors can explain approximately 14.7% of the variance in teachers' intention to stay. The ANOVA for regression further confirmed the model's significance ($F=8.205$, $p=.000$). The findings suggest teachers tend to stay in their roles when they can actively engage their learners in the learning process, which brings them a sense of satisfaction and fulfillment. Conversely, when teachers struggle to engage their learners, they may become disheartened and unmotivated in their jobs, exhibiting a negative attitude towards teaching, which could lead to leaving their positions.

3.12 Influence of Teachers' Stress on Intention to Stay

Table 24 presents the simultaneous regression analysis of teachers' intention to stay on teachers' stress predictors, which reveals the limited explanatory power of the model. The model included a significant constant term of 3.071 ($t=12.087$, $p=.000$), indicating a baseline intention to stay when other predictors are zero. However, none of the stress-related predictors, including "workload," "student behavior," and "instrumental support," demonstrated statistically significant effects on teachers' intention to stay. The overall model's goodness of fit was reflected in the R-squared value of .019, suggesting that only 1.9% of the variance in teachers' intention to stay could be

explained by the included predictors. The ANOVA for regression further confirmed the lack of significance ($F=.784$, $p=.505$).

Table 24. Simultaneous regression analysis of teachers' intention to stay on teachers' stress

Model	Unstandardized Coefficients		t-value	p-value	Remark	Decision
	B	S. E.				
(Constant)	3.071	.254	12.087	.000	Significant	Reject Ho
Workload	.060	.089	.678	.499	Not significant	Fail to Reject Ho
Student Behavior	-.072	.093	-.775	.440	Not significant	Fail to Reject Ho
Instrumental Support	-.065	.067	-.974	.332	Not significant	Fail to Reject Ho

Note: $R^2 = .019$ ANOVA for Regression: $F=.784$, $p=.505$ not significant at .05 level

These findings suggest that, in this context, teachers' intention to stay is not substantially influenced by the specified stress-related factors. The teachers in this study may exhibit effective coping mechanisms for stress, thereby minimizing its influence on their intention to stay. Research indicates that teachers frequently utilize coping strategies to manage stress and negative emotions, and they may perceive stress as an opportunity for personal growth rather than a reason to quit.

3.13 Influence of Teachers' Demographics on Intention to Stay

Table 25 revealed that no demographic factors significantly influenced teachers' commitment to remain in their current teaching positions. Age, gender, teaching position, teaching experience, and educational attainment were not significant predictors of teachers' intention to stay. Moreover, the study highlighted that the model's explanatory power was relatively low ($R^2 = .102$), suggesting that the examined variables explained only a small portion of the variance in teachers' intention to stay at work. Additionally, the ANOVA for Regression revealed that the overall regression model was insignificant ($F = .982$, $p = .474$), indicating that the included variables collectively did not significantly predict teachers' intention to stay at work.

Table 25. Regression analysis of teachers' intention to stay at work on teachers' demographic profiles

Model	Unstandardized Coefficients		t-value	p-value	Remark	Decision
	B	S. E.				
Age						
20-29	Ref	--	--	--	--	
30-39	-.095	.134	-.708	.480	Not significant	Fail to Reject Ho
40-49	.148	.158	.937	.351	Not significant	Fail to Reject Ho
50-65	.123	.202	.610	.543	Not significant	Fail to Reject Ho
Gender						
Male	Ref	--	--	--	--	
Female	-.075	.108	-.696	.488	Not significant	Fail to Reject Ho
Position						
Teacher 1	Ref	--	--	--	--	
Teacher 2	-.177	.153	-1.157	.250	Not significant	Fail to Reject Ho
Teacher 3	.009	.128	.070	.944	Not significant	Fail to Reject Ho
Master teacher	-.200	.184	-1.091	.278	Not significant	Fail to Reject Ho
Teaching Experience						
1-10	Ref	--	--	--	--	
11-20	-.050	.133	-.374	.709	Not significant	Fail to Reject Ho
21-30	-.056	.159	-.352	.726	Not significant	Fail to Reject Ho
31-40	.234	.214	1.090	.278	Not significant	Fail to Reject Ho
Educational Attainment						
Bachelor degree	Ref	--	--	--	--	
Master Degree with units	.025	.096	.264	.793	Not significant	Fail to Reject Ho
Master Degree Graduate	.024	.113	.213	.832	Not significant	Fail to Reject Ho
Doctorate level	.002	.214	.008	.994	Not significant	Fail to Reject Ho

Note: $R^2 = .102$ ANOVA for Regression: $F=.982$, $p=.474$ not significant at .05 level

3.14 Influence of Teachers' Work Commitment on Intention to Stay

Table 26 revealed that among the work commitment dimensions, "commitment to students" and "commitment to school" were identified as significant contributors to teachers' intention to stay, with coefficients of .221 ($t=2.915$, $p=.004$) and .229 ($t=2.990$, $p=.003$), respectively. This suggests that as "commitment to students" and "commitment to school" increase, teachers' intention to stay also increases. However, "commitment to teaching" and "commitment to the profession" did not significantly predict teachers' intention to stay in this model. The overall

model's goodness of fit, reflected in the R-squared value of .165, indicates that the included predictors can explain approximately 16.5% of the variance in teachers' intention to stay. The ANOVA for regression further confirmed the model's significance ($F=7.176$, $p=.000$).

Table 26. Simultaneous regression analysis of teachers' intention to stay on work commitment

Model	Unstandardized Coefficients		t-value	p-value	Remark	Decision
	B	S. E.				
(Constant)	1.737	.280	6.208	.000	Significant	Reject Ho
Commitment to Students	.221	.076	2.915**	.004	Significant	Reject Ho
Commitment to Teaching	-.011	.081	-.141	.888	Not significant	Fail to Reject Ho
Commitment to school	.229	.077	2.990**	.003	Significant	Reject Ho
Commitment to profession	-.092	.060	-1.539	.126	Not significant	Fail to Reject Ho

Note: $R^2 = .165$ ANOVA for Regression: $F=7.176^{***}$, $p=.000$. ***-significant at .001 level

Fitted Regression Model: $Y = 1.737 + .221 \times \text{commitment to students} + .229 \times \text{commitment to school}$

In the study context, it was evident that teachers' commitment to their students and the school significantly impacts their professional decisions. On the other hand, a lack of commitment among teachers can potentially encourage them to consider changing occupations (Räsänen et al., 2020).

4.0 Conclusion

In light of the findings, it can be concluded that teachers feel confident in their abilities and are committed to their students, even though they face moderate stress and have a strong desire to stay in their jobs. Interestingly, how confident teachers feel can vary with their age and gender, but stress levels do not change much based on these factors. It turns out that teachers who are good at engaging students are also more dedicated to their work. Also, factors like stress from too much work and the support they get can predict how committed they are to their jobs. Even when teachers are stressed, they still want to keep teaching, especially if they feel confident about connecting with students. However, stress does not seem to affect their decision to stay or leave or their age, gender, or other personal details. Teachers who care about their students and feel connected to their school are likelier to stick with their jobs. The study suggests that it is important to have programs that help teachers feel better and more invested in their work. These programs should help teachers build confidence, deal with stress, and strengthen their bond with students and the school. In doing so, we can create a better environment for teachers, helping them excel in their crucial role in education.

5.0 Contributions of Authors

Miss Borres was responsible for the study's conception and design. She conducted the data analysis, wrote the initial draft of the manuscript, and coordinated the overall project. Mr. Potane contributed to the study design and provided critical revisions and intellectual input, significantly enhancing the final manuscript.

6.0 Funding

This work received no specific grant from any funding agency.

7.0 Conflict of Interests

The authors declare no conflicts of interest about the publication of this paper

8.0 Acknowledgment

The researcher thanks the Almighty God for wisdom and guidance throughout the study. Special thanks to Dr. Joel D. Potane for their invaluable support and mentorship. Appreciation is also extended to Dr. Edwin C. Du, Dr. Olga C. Alonsabe, Dr. Mercelita J. Labial, Dr. Warren Luzano, and Dr. Peter Xenos. To the Division of Bukidnon for allowing me to conduct the study. Gratitude to Dr. Geldolin Inte, Dr. Josephine O. Oted, and Dr. Irene C. Quimbo for validating the research instrument. Special appreciation goes to her relatives, who supported the researcher throughout the study. Lastly, the researcher would like to thank her family – Papa Maning, Mama Chona, Chin, and Jr – for their unconditional love and support.

9.0 References

- Abellana, J.M., & Abadiano, M.N. (2020). The mindset of teachers in pursuing graduate education: A grounded theory. *Journal of Critical Reviews*, 7(15). <https://www.jcreview.com/paper.php?slug=the-mindset-of-teachers-in-pursuing-graduate-education-a-grounded-theory>
- Abun, D., Asuncion, S., Lazaro, J., Magallanes, T., & Catbagan, N. (2021). The effect of educational attainment, length of work experience on the self-efficacy of teachers and employees. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3954135>
- Agai-Demjaha, T., Bislimovska, J. K., & Mijakoski, D. (2015). Level of work related stress among teachers in elementary schools. *Open access Macedonian journal of medical sciences*, 3(3), 484–488. <https://doi.org/10.3889/oamjms.2015.076>
- Agyapong, B., Obuobi-Donkor, G., Burbach, L., & Wei, Y. (2022). Stress, burnout, anxiety and depression among teachers: A scoping review. *International Journal of Environmental Research and Public Health*, 19(17), 10706. <https://doi.org/10.3390/ijerph191710706>
- Agrawal, S., & Jain, B. K. (2020). Influence of demographic variables on organizational commitment of school teachers: Evidence from the Kathmandu Valley, Nepal. *Quest Journal of Management and Social Sciences*, 2(2), 262-274. <https://doi.org/10.3126/qjmss.v2i2.33298>
- Aloka, P. J., & Bojuwoye, O. (2013). Gender, age and teaching experiences differences in decision-making behaviours of members of selected Kenyan secondary school disciplinary panels. *Asian Social Sciences*, 9(10). <https://doi.org/10.5539/ass.v9n10p43>
- Altun, M. (2017). The effects of teacher commitment on student achievement: A case study in Iraq. *International Journal of Academic Research in Business and Social Sciences*, 7(11), 417-426. <https://doi.org/10.6007/ijarbs/v7-i11/3475>

- Amutabi, M. N. (2018). Social and political obstacles in pursuing PhD degree in Africa: Interrogating the problem of gatekeepers and structural obstacles. *Journal of African Interdisciplinary Studies*, 2 (1), 126-146.
- Anderson, S. (2022). The truth about teacher salaries and its effects on teachers and students. California State University, Chico. <http://hdl.handle.net/20.500.12680/g732dg94s>
- Antonio, G. C. (2023). Resilience and sense of self-efficacy among Filipino educators during the 2019 corona virus pandemic. *American Journal of IR 4.0 and Beyond*, 2(1), 1-5. <https://doi.org/10.54536/ajirb.v2i1.1457>
- Bashaija, A., Atibuni, D. Z., & Rukundo, A. (2022). Demographic characteristics and occupational stress by secondary school teachers in Greater Bushenyi, Uganda. *East African Journal of Education and Social Sciences* 3(2),73-77. <https://doi.org/10.46606/eajess2022v03i02.0161>.
- Cagape, W.E, Baog, I.W., Magayo, J.C., & Clerigo, K.O. (2021). Work commitment among public secondary school teachers in Davao City. *International Journal of Scientific & Engineering Research*, 12 (11), 1043-1049. Retrieved from https://www.ijser.org/research-paper-publishing-november-2021_page2.aspx
- Galanakis, M., Alexiou, E., Androutsopoulou, A., Chiotsaki, I., Mouselimidou, I., Mylona-Fountzoula, M., Papadopoulou, C. & Tsirozidi, S. (2020) Occupational Stress Relation to Tenure and Educational Level in Primary School Teachers in Greece. *Psychology*, 11, 865-873. <https://doi.org/10.4236/psych.2020.116056>
- George, D., & Mallery, P. (2003). SPSS for Windows step by step: A simple guide and reference. 11.0 update (4th ed.). Boston, MA: Allyn & Bacon.
- Graham, L. J., White, S. L., Cologon, K., & Pianta, R. C. (2020). Do teachers' years of experience make a difference in the quality of teaching? *Teaching and Teacher Education*, 96, 103190. <https://doi.org/10.1016/j.tate.2020.103190>
- Gustafson, K. (2015). Increasing the Teaching Profession's Collaborative Capacity: A Proposal of Organizational Change to Reduce Stress Experienced by Teachers (Doctoral dissertation, City University of Seattle).
- Halim, R. A., & Ahmad, H. H. (2015). Distributed leadership, contextual factor and teachers' self-efficacy in Malaysia. *Malaysian Online Journal of Educational Management*, 3(3), 1-12.
- Huang, S., & Yin, H. (2018). Teacher efficacy and affective well-being in Hong Kong: An examination of their relationships and individual differences. *ECNU Review of Education*, 1(2), 102-126. <https://doi.org/10.30926/ecnuoe.2018010205>
- Hughes, A. L., Matt, J. J., & O'Reilly, F. L. (2014). Principal support is imperative to the retention of teachers in hard-to-staff schools. *Journal of Education and Training Studies*, 3(1), 129-134. <https://doi.org/10.11114/jets.v3i1.622>
- Islam, T., Ahmad, Z., Ahmed, L., Ahmad, A., Saeed, M., & Muhammad, S. K. (2012). Does compensation and demographical variable influence on teachers commitment and job satisfaction? a study of university of the Punjab, Pakistan. *International Journal of Business and Management*, 7(4), 35.
- Ismael, J., Lazzaro, A. E., & Ishihara, B. (2021). It takes heart: the experiences and working conditions of caring educators. *Radical Teacher* (Cambridge), 119(119), 30-40. <https://doi.org/10.5195/rt.2021.707>
- Jordan, G. Y., & Oliva E.R.D. (2022). A structural equation model on teacher turn-over intention in relation to organizational commitment, school culture and work environment. *Journal of Education and Practice*, 13(29). 87-103. <https://doi.org/10.7176/JEP/13-29-10>
- Kabito, G., & Wami, S. (2020). Perceived work related stress and its associated factors among public secondary school teachers in Gondar city: a cross-sectional study from Ethiopia. *BMC Notes*, 13(36), 2-7.
- Korso, G. B. (2013). Teachers' perceived commitment as measured by age, gender and school type. *Greener Journal of Educational Research*, 3(8), 363-372. <https://doi.org/10.15580/gjer.2013.8.080913830>
- Kraft, M. A., Marinell, W. H., & Yee, D. S. (2016). School Organizational Context. *American Educational Research Journal and student achievement*, 53, 1411-1449. <http://dx.doi.org/10.3102/0002831216667478>
- Laily, N., & Wahyuni, D. U. (2023). Teacher performance based on stress and organizational commitment. *International Journal of Scientific and Research Publications (IJSRP)*, 7(12), 192-199.
- Lazarides, R., & Warner, L. M. (2020). Teacher self-efficacy. *Oxford research encyclopedia of education*. <https://doi.org/10.1093/acrefore/9780190264093.013.890>
- Malagsic, M. T., Petalla, M. B., & Doromal, A. D. (2021). Self-efficacy and work commitment of the private senior high school teachers in time of pandemic. *International Journal of Sciences: Basic and Applied Research*, 60 (4), 345-359. Retrieved from <https://www.gssrr.org/index.php/JournalOfBasicAndApplied/article/view/13568>
- Mahmood, K., Ghaffar, A., & Ullah, M. I. (2022). Demographic factors and job stress among school teachers of Punjab, Pakistan. *Journal of Education and Social Studies*, 3(2), 126-136. <https://doi.org/10.52223/jess.20223208>
- Miller, T. M. (2020). Teacher self-efficacy and years of experience: Their relation to teacher commitment and intention to leave [Doctoral dissertation]. <https://hdl.handle.net/1808/34216>
- Mwesiga, A., & Okendo, E. (2018). Levels of teachers commitment to the teaching profession in secondary schools in Kagera Region, Tanzania. *Research on Humanities and Social Sciences*, 8(14), 117-127.
- Rabago-Mingoa, T. (2017). Filipino teachers stress levels and coping strategies. In *De La Salle State University Research Congress*.
- Rani, S., & Jain, R. (2023). Understanding the relationship between gender and experience in the self-efficacy of Indian teacher educators. *Journal of Positive School Psychology*, 7(1), 953-964.
- Räsänen, K., Pietarinen, J., Pyhältö, K., Soini, T., & Väisänen, P. (2020). Why leave the teaching profession? A longitudinal approach to the prevalence and persistence of teacher turnover intentions. *Social Psychology of Education*, 23, 837-859. <https://doi.org/10.1007/s11218-020-09567-x>
- Sarabia, A., & Collantes, L. M. (2020). Work-related stress and teaching performance of teachers in selected school in the Philippines. *Indonesian Research Journal in Education*, 4(1), 6-27. <https://doi.org/10.22437/irje.v4i1.8084>
- Seeram, E. (2019). An overview of correlational research. *American Society of Radiologic Technologists*, 91.
- Shuls, J., & Flores, J. (2020). Improving teacher retention through support and development. *Journal of Educational Leadership and Policy Studies*, 4(1). <https://eric.ed.gov/?id=EJ1282763>
- Siedlecki, S. L. (2020). Understanding descriptive research designs and methods. *Clinical Nurse Specialist*, 34(1), 8-12. <https://doi.org/10.1097/nur.0000000000000493>
- Tarraya, H. (2023, June 24). Teachers' workload policy: Its impact on Philippine public school teachers. *Puissant*, 4. Retrieved from <https://puissant.stepacademic.net/puissant/article/view/246>
- Thien, L. M., Razak, N. A., & Ramayah, T. (2014). Validating teacher commitment scale using a Malaysian sample. *SAGE Open*, 4(2), 215824401453674. <https://doi.org/10.1177/2158244014536744>
- Torkaman, F., Farhang, S., Zakerian, S. A., Torkaman, M., & Niaragh, H. K. (2017). A study on the effect of job burnout and stress on job satisfaction among teachers of exceptional school. *Pharmacophore*. <https://pharmacophorejournal.com/5PHGY7o>
- Tschannen-Moran, M., & Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, 17(7), 783-805. [https://doi.org/10.1016/S0742-051X\(01\)00036-1](https://doi.org/10.1016/S0742-051X(01)00036-1)
- Ulaş, M., & Şenel, E., (2020). The relationship between commitment to teaching, teacher efficacy, marginalisation and isolation: A study on physical education teachers. *Cypriot Journal of Educational Science*. 15(6), 1439-1453. <https://doi.org/10.18844/cjes.v15i6.5217>
- Ünal Z., & Ünal A.. (2012). The impact of years of teaching experience on the classroom management approaches of elementary school teachers. *International journal of Instruction*, 5(2). <https://www.e-iji.net/volumes/318-july-2012-volume-5-number-2>
- Yusoff, M. S. (2019). ABC of content validation and content validity index calculation. *Education in Medicine Journal*, 11(2), 49-54. <https://doi.org/10.21315/eimj2019.11.2.6>
- Zeb, S., & Nawaz, A. (2016). Impacts of self-efficacy on organizational commitment of academicians a case of Gomal university. *Journal of Information & Knowledge Management*, 6(1). <https://www.iiste.org/Journals/index.php/IKM/article/view/28365>
- Zedan, R. (2012) Stress and coping strategies among elementary schools teachers in Israel. *Universal Journal of Education and General Studies*. 1(9), 265-278. Retrieved from <http://www.universalresearchjournals.org/ujegs>.

Facing Job Uncertainties: The Lived Experiences and Challenges Encountered by Government Contractual Workers

Rolando II R. Abanto^{1*}, Anna Rose T. Marcelino², Roldan P. Oyao³

¹Pag-IBIG Fund, South Cotabato, Philippines

²Sultan Kudarat State University, Sultan Kudarat, Philippines

³Davao del Sur State College, Davao del Sur, Philippines

*Corresponding Author Email: rolando.abanto06@gmail.com

Date received: June 29, 2024

Date revised: July 10, 2024

Date accepted: July 16, 2024

Originality: 91%

Grammarly Score: 99%

Similarity: 9%

Recommended citation:

Abanto, R., Marcelino, A.R., Oyao, R. (2024). Facing job uncertainties: the lived experiences and challenges encountered by government contractual workers. *Journal of Interdisciplinary Perspectives*, 2(8), 512-521. <https://doi.org/10.69569/jip.2024.0322>

Abstract. Contractualization remains a contentious issue, particularly in the Philippines, where "Endo" (end of contract) refers to short-term employment. This qualitative phenomenological study aimed to investigate the challenges faced by job-order employees in a Philippine government agency. The study employed a descriptive-phenomenological research design. Eleven individuals employed under job order arrangements participated in semi-structured key informant interviews (KII). The collected data were analyzed using Colaizzi's approach. The results revealed the following themes regarding their challenges: insecurities, pressures, disincentives; work commitment; advancement; and optimism for coping mechanisms. Despite the challenges of job-order employment, the informants managed to perform their assigned services effectively. Additionally, they expressed a desire to become regular government employees. The study recommends that management improve job characteristics and the work environment through clear communication to increase satisfaction and retention. Employees should enhance their qualifications by obtaining master's degrees, specialized training, and attending seminars to improve job stability and prospects for permanent employment. Management should establish a clear path from temporary to permanent roles and implement a fair contract renewal process to promote stability and long-term commitment, reduce social comparison, and increase workplace productivity.

Keywords: Contractual worker; Government worker; Public administration; Job uncertainties; Job order employees; Phenomenology; Philippines.

1.0 Introduction

The Philippine Statistics Authority (PSA) conducted a study in 2023 that revealed a population of approximately 832,812 (29.68%) individuals classified as short-term or seasonal employees and those engaged in unpaid family work, marking a 29.71 percent increase from 2022. According to the Presidential Communications Office (2024), with the release of CSC-COA-DBM JC No. 1, s. 2017, the number of COS and JO employees in the government has grown. In Philippine government agencies such as Pag-IBIG Fund, there is evidence of high turnover of job order workers who resigned from the agency and transferred to other government agencies for greener pastures as regular employees. One of the main reasons they resigned from the fund was a limited *Plantilla* or no available regular position. This issue has created paralysis in the totality of the branch operations if the job orders employees to resign from their duties in office.

The incidence of precarious employment among job order personnel is rising within the country and in other nearby countries. The prevalence of labor-management disputes, or the absence of employer-employee ties, is a pervasive concern in the public sector. According to Abelido's (2017) research, neighboring countries of the Association of Southeast Asian Nations (ASEAN) also engage in contextualization. Indonesia exhibits a substantial proportion of informal employment, with around 65% of its workforce engaged in such arrangements. Similarly, Malaysia demonstrates a notable prevalence of informal employment, accounting for approximately 28% of its labor force. On the other hand, Thailand experiences a significantly higher proportion of informal employment, with approximately 63% of its workforce engaged in such arrangements. Lastly, Vietnam showcases a moderate prevalence of informal employment, with approximately 42% of its labor force involved in such employment arrangements. According to the statistics, a significant proportion of individuals employed in the government sector in the Philippines is approximately 35%, which accounts for one in every three people.

As per the 1993 Guidelines on Appointments and Other Personnel Actions issued by the Civil Service Commission (CSC), the term "job order" (JO) pertains to a form of employment that encompasses a fixed sum of work or services, such as janitorial, security, or consultancy services. It is important to note that a job order does not establish an employer-employee relationship. Specifically, a job order typically assigns "piece work" or intermittent job assignments for a brief period not exceeding six months (CSC, 1993). Such contracts do not classify workers as government employees, thereby disqualifying them from government employee benefits like the personnel economic relief allowance (PERA), cost of living allowance (COLA), and representation and transportation allowance (RATA). These benefits are additional monetary compensation provided on top of the monthly salary of government employees (CSC 1993). The criteria further stipulate that a contract of this nature, unlike permanent employment, does not necessitate clearance from the CSC. In 1998, the Civil Service Commission (CSC) released Revised Omnibus Rules on Appointments and Other Personnel Actions, which incorporated regulations about work-order employment that were fundamentally comparable to those previously established. The government's definitions of contractual employment are noteworthy and summarized as follows: A contractual employee undertakes a specific task or activity for a limited duration, typically not exceeding one year (CSC 1998).

Regarding the depiction of lump sum services or "piece work," it is important to note that workers engaged through individual job orders (JOs) perform various services, including general support, administrative, technical, and even supervisory and managerial tasks. Regular employees perform similar tasks, but it is crucial to note that the Civil Service Commission (CSC) mandates the submission of service contracts to the relevant CSC regional office for review. This review process aims to guarantee that the contracts do not contain certain provisions, as delineated by the CSC in 2002.

The laws delineate the parameters for the purported "autonomy" of work-order employees, namely those who are self-employed. The primary focus is highlighting the distinction between contractual workers and permanent employees of a government agency, specifically in terms of the nature and duration of their services. Contractual workers are typically engaged to provide lump-sum services for a specified period, which differs from the tasks performed by permanent employees and those crucial to the government agency's functioning. The primary determinant for contract fulfillment would be completing the tasks mandated within the designated timeframe. Regrettably, this work arrangement was susceptible to varying interpretations, resulting in hiring practices that facilitated the emergence of controversial working circumstances.

Using contractual labor arrangements to provide public services has increased the number of contractual workers within the public sector. Globally, we widely acknowledge the job order employee as a contractual work arrangement where individuals meet the requirements for permanent employment but lack the corresponding rights associated with permanent employment. The absence of a conventional employment arrangement that protects workers from a purely market-driven system is known as job insecurity. Precarious employment encompasses several work arrangements, such as part-time employment, temporary employment, dependent self-employment, and subcontracted work (Wilson, 2018). Job insecurity is linked to various factors, including but not limited to flexible working hours, short-term contracts, limited social protection, and inadequate compensation (Rubery, 2018).

In the interim, it is crucial to consider a more all-encompassing understanding of job anxieties, specifically referring to the lack of any form of employment security as advocated by proponents of government work arrangements. The author identifies seven key dimensions of security in the labor market. These dimensions include 1) labor market security, which refers to the availability of long-term, full-time employment opportunities; 2) job security, which entails protection against discriminatory recruitment and dismissal practices, as well as the regulation of employment practices; 3) work security, which encompasses the existence of career advancement prospects; 4) occupational safety, which pertains to the health and safety conditions in the workplace; 5) reproductive skills security, which involves access to training opportunities and the development of skills; 6) employment security, which encompasses adequate wages, guaranteed benefits, and social protection; and 7) political security, as discussed by Deeming (2013). The concept of citizenship in the workplace emphasizes the ability of employees to exercise their civil, political, and social rights while engaged in their professional duties. This aspect encompasses an additional component inherent within a conventional employment arrangement, namely, a personal life beyond the confines of work. Individuals separate their professional responsibilities from their non-work-related commitments (Rubery, 2018).

In addition to welfare and social safety, labor security encompasses other elements that play a significant role in shaping employees' feelings of identity and belonging and their entitlement to freedom of expression, representation, and economic fairness (Fudge, 2010). However, it is important to note that contractual employment can result in a diminished sense of identification, affiliation, and moral and behavioral dedication among job-order employees, creating a division between them and their regular colleagues. This division ultimately diminishes the perceived worth and impact of their work.

The issue of contractual employment has been a significant focal point in the Philippine labor market, predating the official recognition of the term "contractual" in 1974 by Presidential Decree No. 442, also known as the Labor Code. The prevalence of contracting out has increased significantly to the point where it is considered commonplace. The Labor Code has undergone revisions, now distinguishing between illegal and permissible labor contracting activities. Over time, there has been a persistent presence of discontent and disillusionment about the well-being of Filipino laborers, which has perpetuated the ongoing discussion and analysis around contractual employment within the realm of politics.

As a former job order employee, a researcher developed a keen interest in exploring this phenomenon. The researcher, intrigued by the behavior of job order personnel and eager to gain insights through the scientific method, deemed this phenomenon worthy of exploration. Based on experience, how many job order personnel have worked in the Pag-IBIG Fund for many years without resigning yet have actively sought a permanent position for several years? The researcher believes that this phenomenon presents a challenge for job order personnel in the Pag-IBIG Fund, as they lack job security, employer-employee relationships, bonuses, and leave credits. Furthermore, the management does not prioritize the growing number of job-order employees in the fund. This study contributes to the existing body of knowledge, both from the perspective of the job applicant and as an individual, by offering insights into this phenomenon. The primary objective of this research was to examine the difficulties, adaptive strategies, and goals experienced by job-order employees inside the Pag-IBIG Fund organization. The researcher also emphasized their contribution to the broader agency. This study's findings contributed to understanding job order personnel's experiences in the Pag-IBIG Fund and those in other government agencies, particularly those with similar expectations for job order personnel.

2.0 Methodology

2.1 Research Design

The researcher utilized a qualitative phenomenological research approach. Phenomenology is a philosophical approach concerned with the examination and analysis of human behavior. The text cites Creswell (2007) and Van Manen (1997) extensively. The researcher employed the descriptive phenomenology approach to investigate the behavior of work order personnel regarding job retention. According to Husserl's philosophical framework, the descriptive phenomenological method involved meticulously examining lived experiences. Once the researcher collected the primary data, he conducted a comprehensive analysis using the perspective of phenomenological psychological reduction (Giorgi & Giorgi, 2003). Giorgi (2007) preferred Heidegger's and Husserl's phenomenological methods due to their comprehensive approach, which applies to various objects. Giorgi

emphasized that how an object manifests itself should be the foundation for investigative procedures (pp. 73–73). This study primarily investigated the behavioral patterns employees employed under job-order arrangements exhibited. Researchers specifically examined the obstacles individuals face and explored their corresponding coping techniques. Adopting a descriptive phenomenological approach, the primary objective of his study was to investigate the behavior of job-order people and examine their job retention strategies within the context of their work environment. To truly understand these people and how they handle their jobs, he had to avoid giving his interpretations. The researcher actively listened to gather firsthand accounts, enabling me to construct a meticulous depiction of the phenomenon. The researcher endeavored to adhere to Husserl's proposition of perceiving things in their unadulterated state (Shosha, 2012).

2.2 Research Locale

As of March 2024, the Pag-IBIG Fund-Davao had approximately 200 non-regular employees. The researcher conducted the study exclusively at Pag-IBIG Fund-Davao. This study focused on the contractual employees' lived experiences and challenges.

2.3 Research Participants

The researcher ensured that the informants selected for this study met the predetermined criteria. The criterion encompassed the subsequent elements: (a) The informants should consist of job order personnel currently employed at Pag-IBIG Fund. (b) The informants should fall under the category of "contractual workers," indicating their continued presence in the workplace to ensure effectiveness and efficiency in their tasks. (c) Not all informants have attained regular employee status for a period ranging from 1 year to 10 years. The researcher restricted the scope of inclusion to 10 years for job order employees in the Fund, as it is possible that job order employees may have transitioned into regular employment status beyond this timeframe. After one year of being a job order employee, the researcher believed he had already encountered challenges from the agency, regular employees, and clients. Eleven individuals employed under job orders, consisting of three males and nine females, could partake in the Key Informant Interviews (KII). The numerical value fell within the specified range, as proposed by Morse (1994). To facilitate the recruitment of informants, the researcher sought assistance from the branch head and supervisor to obtain their valuable insights and recommendations. The researcher asked if they could let him interview the job order personnel in a purposeful, convenient sampling.

After obtaining the identities of the job order personnel, the researcher proceeded to compose letters addressed to them, in which he requested their active participation. The researcher also conducted telephone inquiries to ascertain their willingness to participate in the study. After receiving affirmative feedback, he proceeded to schedule the interview. This study employed purposive sampling because it aligned with the research objectives and addressed the challenges of recruiting suitable informants. This sampling strategy facilitated identifying and selecting informants with relevant expertise in the issue under investigation, ensuring credible and reliable information (Creswell & Plano Clark, 2011). The interviewees used for this study were individuals employed as job order personnel at Pag-IBIG Fund Davao.

2.4 Research Instrument

The responses from key informant interviews (KII) served as the primary data sources for this study. Kumar (1989) asserts that the advantage of requiring only a small number of participants to gather information about the phenomenon under investigation typically favors the selection of key informant interviewers (KII). The limited number of options that met the established criteria for inclusion led to the decision to employ this technique. The interview followed a semi-structured format, employing a set of predetermined interview guide questions. The researcher sought consent from the participants to employ social media platforms such as Facebook Messenger to conduct interviews and face-to-face conversations while adhering to social distancing guidelines. To establish a comfortable atmosphere for the informants, the researcher conducted the interview conversationally. Van Manen (1997) utilized the interview to establish a conversational rapport with the informant, gather material for elucidating the phenomenon's significance, and establish a methodological approach. The initial interview revealed that the interviewee, a job order staff member, had spent over four years in the organization. The researcher followed Creswell's (2007) data collection cycle during the data collection process. Initially, the researcher identified the informants who met the predetermined inclusion criteria through purposive sampling. Therefore, the researcher utilized purposive, convenient sampling. Furthermore, the researcher established a

rapport with the participants before the formal interview began. The researcher allowed them to use their native tongue. Subsequently, the researcher collected data through key informant interviews. The researcher determined the interview venue by utilizing various communication platforms, including Facebook Messenger, telephone conversations, and in-person interactions that adhered to social distancing protocols. The researcher asked them questions that aligned with the study's primary objectives. The researcher conducted the interview using the common dialects of the informants, Cebuano, English, and Tagalog, and asked the following three research questions: (a) What are the job-order personnel's difficulties in job retention? (b) What are their coping mechanisms? What are the job-order employee's work efficiency and efficacy goals?

2.5 Data Gathering Procedure

While examining the data, we adhered to Colaizzi's (1978) methodology. According to Shosha (2012, p. 33), Colaizzi's technique consists of seven distinct steps:

- Step 1: Review each transcript thoroughly multiple times to comprehensively understand its overall content.
- Step 2: Extract noteworthy statements from each transcript relevant to the investigated topic. Document the aforementioned statements on a separate sheet, indicating the corresponding page and line numbers.
- Step 3: These expressions of significance should inform the formulation of meanings.
- Step 4: You should organize the ascribed significance into categories, clusters of themes, and individual themes.
- Step 5: A comprehensive depiction of the phenomenon under investigation should incorporate the study's findings.
- Step 6: It is necessary to provide a comprehensive description of the underlying structure of the phenomenon.
- Step 7: Finally, it is imperative to seek validation of the research participants' findings to establish a comparison between the descriptive data obtained and their personal experiences.

First, the researcher engaged in multiple readings of the transcripts to comprehensively comprehend the responses provided by the informants. The researcher approached this task in an analytical manner to develop a personal comprehension of the actual response. However, before that, the researcher had previously participated in informal conversations following each interview he conducted. Nevertheless, the researcher meticulously documented these dialogues or exchanges since he deemed it crucial to prioritize the authentic reactions of the individuals involved as the primary dataset for subsequent analysis and interpretation.

Second, when analyzing the transcript, the researcher noticed noteworthy statements. The researcher contributed to this stage by autonomously identifying noteworthy statements from the transcribed data or transcripts. The researcher then shared the results of his analysis, compiling the significant statements he found. The researcher organized these statements into a tabular format, creating three columns. The initial column comprised the statements the researcher had identified as important. The second column contained the pseudonym assigned to each statement and its matching transcript, page number, and line numbers. The researcher allocated the third column for the subsequent stage. Next, the researcher proceeded to articulate the significance of each sentence. The researcher analyzed by scrutinizing the notable statement, the direct answer, and elucidating its intended significance. Given the potential for outsiders to overlook the intended significance, especially with interviews conducted in the native language, the researcher deemed it vital to provide meaning.

The researcher ensured that the statements provided by the informants accurately reflected their intended meaning, thus establishing a definitive interpretation. The researcher inserted these definitions into the third column of our initial table. The researcher then identified the theme clusters and emergent themes by providing defined meanings. The researcher generated the second and third tables to facilitate the analysis process. The researcher organized the formed meanings into categories and divided them into clusters based on thematic similarities. To clarify, the researcher organized the constructed interpretations into distinct classifications corresponding to a distinctive arrangement of clusters of motifs (Shosha, 2012, p. 35). The researcher analyzed and arranged the cluster themes according to their established meanings, resulting in a unique structure or grouping of meanings. This process led to the creation of topic clusters. The second table comprised the derived significance obtained from the third column of the initial table, together with the thematic clusters. After identifying the topic clusters, the researcher constructed an additional table to facilitate further analysis. The third table included

clusters of themes and emergent topics. The researcher analyzed the cluster of topics to derive the emerging themes and then organized them into a distinct construct.

Fifth, the researcher presented the results, focusing on the emergent themes and comprehensively describing the phenomenon. This study analyzes the obstacles, coping methods, and goals experienced by job-order employees in the Philippine Government, focusing on those employed by the Pag-IBIG Fund. By delving into these individuals' lives, the researcher gains a deeper understanding of their professional circumstances. After completing the findings, the researcher sought the expertise of a knowledgeable individual to conduct a thorough assessment and confirm the comprehensiveness of the phenomenon's description. Additionally, the researcher examined the underlying framework of the findings, specifically focusing on the presence of recurrent or redundant motifs. The researcher eliminated certain motifs during the analysis due to their redundancy. After completing this procedure, the researcher ultimately identified three themes about obstacles, three topics concerning coping methods, and two themes related to goals. Finally, the researcher requested that the informants authenticate their findings to ascertain whether they accurately depicted their experiences. The researcher obtained confirmation of the findings by utilizing a social media platform, specifically Facebook Chat.

2.6 Ethical Considerations

Contacting job-order employees and extending an invitation to participate in his study presented moderate difficulty. Except for a small number of coworkers, the entirety of his participant pool consists of individuals familiar with him. Given that he conducted most of his data collection online, primarily through social media platforms, and conducted face-to-face interviews with adherence to social distancing measures, the researcher anticipated encountering challenges in establishing trust, ensuring confidentiality, building rapport, and securing participants' commitment to responding to his inquiries, particularly given their demanding work schedules. The researcher encountered difficulty distinguishing between persistence and obtrusion when engaging in follow-up interactions. Observations reveal that some individuals have shown reluctance to share additional details, citing concerns about potential harm to their employment status, especially given their lack of job stability. Considering these considerations, the researcher endeavored to carefully organize and articulate the discussions presented in this paper about the working circumstances and experiences of the participants to avoid any potential harm that may arise from disseminating this information.

3.0 Results and Discussion

3.1 Challenges for Job Order Employees in the Pag-IBIG Fund

The researcher initially focused on the challenges faced by the informants. After the interviews concluded, the researcher thoroughly analyzed the collected data, identifying three prominent themes. These factors encompassed feelings of self-doubt, external expectations, and negative influences that discouraged motivation.

Insecurities

One of the shared experiences among job-order employees was the feeling of not having job security. Employees expressed worries about the contract agreement, their employment status, and the absence of regularization guarantees constraints' situations. For a job-order employee, the absence of an employer-employee relationship can lead to envy towards the regular employee's status and a loss of confidence in completing assigned tasks. Jon, a 28-year-old on a job order for five years, expressed her feelings to her peers.

"We lose the employee-employer relationship when we are job-order employees. We should receive the same benefits as regular employees. Our jobs do not provide any security. This is nerve-wracking. How long would it take for us to stay here? Five years, ten years, or more? What saddened me was that we renewed our contract every six months." (T8, P1, L15-18)

According to the informants' accounts, individuals, particularly job-order employees, may feel that their tenure at the Fund lacks security, potentially limiting their opportunities to pursue career advancement in another government agency. They believe other regular employees view them as mere "job-order employees," susceptible to quick replacement and termination.

Pressures

Job Order employees looked to themselves as front-liners who covered the highest number in the fund. However, regular employees also abuse job orders to complete their pending tasks.

"This presents a significant challenge as I struggle to complete my tasks within the allotted time. My regular employees have transferred a significant portion of their workload to me. I even jeopardized my first job. I do not have any choice. Comply with the instructions." (T6, P2, L38–40)

One job-order employee narrated her experience in the office. She occasionally discriminated against other employees, leading to a special suspension of work that other co-employees favored, which resulted in plans for turnover.

Disincentives

A job order is also part of the fund's success and failure. If the organization achieves its target, every agency member should have a shared blessing. However, job-order employees received nothing from management as a token of appreciation.

"Even if we could hit the annual performance target, luckily, regular employees would enjoy the incentive bonus more. Unfortunately, we do not receive anything but thank you." (T3, P2, L27–28)

Based on their experiences, job-order employees often feel jealous of the incentives that regular employees receive. They may be uncertain about the organization's plans to hire them as permanent employees in the fund, which could potentially impact their employment status, particularly when it comes to benefits and incentives.

3.2 Coping Mechanisms for Job Order Employees

The researcher inquired about the informants' strategies for managing the various obstacles they encountered. The researcher used Colaizzi's method to analyze all their responses and identified three emerging themes: work commitment, optimism, and advancement.

Work Commitment

They have demonstrated commendable and responsive actions in their assigned roles as job-order employees. This inspires and commits them to exceeding expectations, establishing goals, and delivering public service to clients.

"Firstly, I must perform my duties efficiently by office procedures. In other words, you must be effective in your work. What additional steps can I take to achieve the office target in such a situation? I would be more responsible for my assigned tasks. I must grow over time." (T7, P2, L63–65)

On the other hand, job-order employees are also committed to showing how flexible they are with the assignment. Even human resource management handles the job-order employee well, making them more capable in their jobs.

"In our assigned jobs, we get to deal with different people. What I appreciate about our human resource management is their adept handling of us. This motivates me because I have learned much from them." (T4, P1, L12–14)

After sharing all their coping mechanisms, job-order employees improved their performance by demonstrating a stronger commitment to their work. They pledged to perform their duties to the best of their abilities every day.

Advancement

Job Order employees also coped with their challenges by obtaining master's degrees to secure work at the office. They stayed longer in the agency, and their bosses encouraged them to pursue higher education.

"For me, it is beneficial to invest in a master's degree so that we can secure our work in the office. You know what I mean. In one day, we will all be regular employees. We stayed here longer, but our boss suggested that we gain our post-graduate degree while we were still young." (T1, P1, L28–31)

According to their experiences, job-order employees would be more advanced and skilled if they received proper training to further their careers.

Optimism

Job-order employees are also hopeful about achieving their dream of tenure security. This is why they rely on management decisions to fulfill their promise of regularization. Job-order employees also wait for the management to quickly absorb them, ensuring the security of their current jobs.

"In the simplest ways, I always keep my spirit high and maintain my composure, and then I am hopeful every day if they make their plans to absorb us. I diligently perform my duties in the office." (T3, P2, L32-33)

According to their experiences, opening to possibilities is one of their coping mechanisms. Being competitive and hopeful about their job status helps them cope with workplace competition.

3.3 Discussion

Conducting interviews with the informants proved to be a gratifying experience as a former job order researcher. Furthermore, it catalyzed his intellectual growth. The study recommended that management improve job characteristics and the work environment through clear communication to increase satisfaction and retention. Management should establish a clear path from temporary to permanent roles and use a fair contract renewal method to promote stability and long-term commitment, reducing social comparison and increasing workplace productivity. Employees should improve themselves by obtaining master's degrees, specialized training, and seminars that could improve job stability and the prospect of permanent employment.

The researcher gained valuable insights from their discourse, particularly regarding their strategies for managing various forms of stress. Additionally, their objectives provided insights into the importance of dedication and efficacy in their role as frontline workers. His experience working with task-order employees has undoubtedly provided him with valuable insights and knowledge, benefiting him personally and professionally as a public servant. Individuals' obstacles, coping methods, and objectives in job-order employment provide valuable insights for themselves, their coworkers, and society.

Insufficient efforts to investigate this problem within the nation have prompted this study to offer a limited understanding of job-order employees' lived experiences and goals. The lack of an employer-employee relationship posed significant challenges for the job-order employees, resulting in a less than satisfactory experience. The individuals in question have mentioned various challenges, including insecurity, external demands, and factors that discourage or demotivate them. Falco et al. (2008) found a significant correlation between temporary employment contracts and employees' perceptions of job security disadvantage and feelings of inequity and deprivation. The job order employees expressed concerns regarding the potential instability of their employment status if the management chooses not to renew their memorandum of agreement after six months.

The study's findings show that Pag-IBIG Fund engages job order employees under contracts with varying durations, from one to six months. As a result, these employees frequently compare themselves with other workers, particularly those holding regular employment positions. The job discontent experienced by job order employees in Pag-IBIG Fund regarding their job order contract can be attributed to the notion of social comparison, which involves comparing an individual's job position with that of others (Falco, 2008).

Both the private and public sectors in the Philippine environment have widely implemented the practice of contractualization. An employer and a worker establish a contractual agreement known as "short-term employment," where both parties mutually agree that the worker will work for a limited duration of approximately five months. This arrangement may involve exceptions to the worker's entitlements, such as job security, financial compensation, non-monetary perks, and social protection benefits.

Valuing employees is synonymous with valuing the organization. According to Beheshti Far (2012), employers must support their employees to achieve favorable outcomes within the firm. The government and non-

government sectors are expressing concern over the need for prompt action to improve and reform the employment situation of job-order employees (Chowdhury, 2011). The agency is believed to benefit from the commitment of job order employees to their assigned jobs. They would gain a strong foundation in work ethics, customer care, and the organization's mission and vision through master's degrees, training, and seminars.

The job-order employee advised other coworkers to be self-prepared and motivated. Work setting positively impacted employee retention and feedback, so the organization needed to appreciate the importance of a favorable working environment (Maulabakhsh, 2015). However, being self-prepared and motivated was an advantage to taking steps to make an employee more responsible and committed to their job assignment. Somehow, it would test their patience and loyalty while keeping them in the agency for many years. If the agency provided manpower development opportunities, such as training and seminars, and adequately cared for them to maintain their current positions, job-order employees would likely become more motivated.

4.0 Conclusion

In the Philippines, job-order employees remain a significant proportion of the labor force. Despite its increasing prevalence, management continues to overlook this group, treating them similarly to ordinary employees. This study highlights job-order employees' challenges, coping mechanisms, and aspirations. The findings describe the challenges, insecurities, pressures, and disincentives from the agency, clients, and other regular employees. Nevertheless, individuals rely on work dedication, career progression, and a positive outlook as their most effective strategies for managing challenges. Despite the hurdles posed by society, individuals persist in carrying out their designated jobs. Despite the challenges of being a job-order employee, these employees found a way to remain committed to their assigned jobs and saw the Pag-IBIG Fund as a valuable tool for their personal growth. They even advise other job-order employees to be self-prepared and motivated in their assigned tasks. The findings of this study may serve as a source of motivation for various government agencies, including the Pag-IBIG Fund, to prioritize the job characteristics, incentives and recognition, and training and development of job-order employees within their workplaces. Considering these findings, firms that engage in contractualization must ensure equitable treatment of their job-order employees and promptly transition them into permanent positions. The researcher anticipates a surge in interest in this study. The researcher expected the outcomes of this study to significantly contribute to initiatives and advancements aimed at improving employment arrangements and work-life balance for task-order employees, which could ultimately lead to their transition into permanent positions within the government sector shortly.

5.0 Contributions of Authors

Rolando R. Abanto II, MPA, Anna Rose T. Marcelino, MPA and Roldan P. Oyao, MPA, are Doctor of Public Administration students at the University of Mindanao in Matina, Davao City.

Conception and Design: Rolando R. Abanto II, MPA, Anna Rose T. Marcelino, MPA and Roldan P. Oyao, MPA, developed the research topic and study framework, concentrating on the experiences and obstacles encountered by government contract workers. They also developed the study's methodology, research questions, and objectives.

Data Collection and Analysis: Rolando R. Abanto II, MPA, Anna Rose T. Marcelino, MPA and Roldan P. Oyao, MPA, gathered the information through interviews and surveys of Pag-IBIG Fund job order workers. They were responsible for assessing the obtained data, identifying significant themes, and interpreting the findings better to understand the participants' lived experiences and issues.

Writing and Manuscript Preparation: Rolando R. Abanto II, MPA, Anna Rose T. Marcelino, MPA and Roldan P. Oyao, MPA, wrote the introduction, literature review, methods, findings, and discussion parts. They used data to effectively express and justify the study's aims, conclusions, and implications.

Revision and Finalization: Rolando R. Abanto II, MPA, Anna Rose T. Marcelino, MPA and Roldan P. Oyao, MPA, read and edited the work based on comments from peers and advisers. They improved the arguments, guaranteed cohesion, and clarity, and finished the work before submission.

Overall Contribution: Rolando R. Abanto II, MPA, Anna Rose T. Marcelino, MPA and Roldan P. Oyao, MPA, contributed significantly to the manuscript's idea, design, analysis, writing, and revision. Their thorough engagement ensured that the study was high-quality and relevant to the subject of public administration and government contractors' experiences.

6.0 Funding

The study does not involve funding from the Pag-IBIG Fund or other agencies.

7.0 Conflict of Interests

In this situation, a conflict of interest arises because the researcher previously worked for the Pag-IBIG Fund, which may have influenced their research on the issues that contractual workers face within the business. This link may impair their neutrality when assessing data or drawing judgments about these workers' experiences. It is critical for the researcher to recognize this possible bias and take actions to reduce it, such as identifying prior employment and ensuring that their analysis is objective and based only on the data obtained. Addressing this issue in a transparent manner is critical to sustaining the integrity and credibility of the study findings.

8.0 Acknowledgment

The researcher would like to thank Dr. Randy Tudy, my former professor at Cor Jesu College Inc., as well as his family, friends, and job-order employees who have contributed to the study's success.

9.0 References

- Abelido, M. R. (2017). Living through the daily grind: Analyzing the determinants of job satisfaction and relative deprivation of contractual workers. *Research Congress Proceedings 2017 Archives - De La Salle University*. De La Salle University. <https://www.dlsu.edu.ph/category/research-congress-proceedings-2017/>
- Beheshtifar, M., & Ali-Nezhad, H. (2012). Investigation of perceived organizational support on employees' positive attitudes toward work. *Interdisciplinary Journal of Contemporary Research in Business*. ResearchGate. <https://www.researchgate.net/publication/281175584>
- Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and conducting mixed methods research* (2nd ed.). Thousand Oaks, CA: Sage.
- Creswell, J. (2007). *Qualitative inquiry and research design: Choosing among five approaches*. Thousand Oaks, CA: Sage.
- Civil Service Guide. (n.d.). CSC MC 19, s. 1993: Development of orientation, reorientation, and employee development programs. *Civil Service Guide: A Compilation of Issuances on Philippine Civil Service*. Retrieved October 2, 2023, from <https://www.csguide.org/items/show/175>
- Civil Service Guide. (n.d.). CSC MC 41, s. 1998: Amendments to Rules I and XVI of the Omnibus Rules Implementing Book V of the Administrative Code of 1987 (Executive Order 292). *Civil Service Guide: A Compilation of Issuances on Philippine Civil Service*. Retrieved October 2, 2023, from <https://www.csguide.org/items/show/388>
- Chowdhury, M. B. (2011). Remittances flow and financial development in Bangladesh. *Economic Modelling*, 28(6), 2600-2608. <https://doi.org/10.1016/j.econmod.2011.07.013>
- Colaizzi, P. F. (1978). Psychological research as the phenomenologist views it. In R. S. Valle & M. King (Eds.), *Existential-phenomenological alternatives for psychology* (pp. 6). New York: Oxford University Press.
- Deeming, C. (2012). Guy Standing (2011), *The precariat: The new dangerous class*. London: Bloomsbury Academic. £19.99, pp. 198, pbk. *Journal of Social Policy*, 42(2), 416-418. <https://doi.org/10.1017/S0047279412000876>
- Falco, A., Corso, L. D., De Carlo, A., & Di Sipio, A. (2008). Effects of temporary job contracts on the well-being of individuals and organizations. ResearchGate, 193-209. <https://www.research.unipd.it/handle/11577/2449287>
- Fudge, J. (2010). A Canadian perspective on the scope of employment standards, labor rights, and social protection: The good, the bad, and the ugly. *Comparative Labor Law and Policy Journal*, 31, 253-266. ISSN 1095-6654
- Giorgi, A. P., & Giorgi, B. M. (2003). The descriptive phenomenological psychological method. In P. M. Camic, J. E. Rhodes, & L. Yardley (Eds.), *Qualitative research in psychology: Expanding perspectives in methodology and design* (pp. 243-273). American Psychological Association. <https://doi.org/10.1037/10595-013>
- Kumar, K. (1989). Conducting key informant interviews in developing countries.
- Morse, J. M. (1994). Designing funded qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 220-235). Sage Publications, Inc.
- Raziq, A., & Maulabakhsh, R. (2015). Impact of working environment on job satisfaction. *Procedia Economics and Finance*, 23, 717-725. [https://doi.org/10.1016/S2212-5671\(15\)00524-9](https://doi.org/10.1016/S2212-5671(15)00524-9)
- Rubery, J., Grimshaw, D., Keizer, A., & Johnson, M. (2018). Challenges and contradictions in the 'normalising' of precarious work. *Work, Employment and Society*, 32(3), 509-527. <https://doi.org/10.1177/0950017017751790>
- Shosha, G. A. (2012). Employment of Colaizzi's strategy in descriptive phenomenology: A reflection of a researcher. *European Scientific Journal*, 8(27), 31-43. ISSN: 1857-7881
- Van Manen, M. (1997). *Researching lived experience* (2nd ed., 2016). Routledge eBooks. <https://doi.org/10.4324/9781315421056>
- Wilson, L. (2018). Precarious employment in public services. *Nevin Economic Research Institute (NERI) Research in Brief*, 54. ISSN 2009-5848.

Customers' Acceptance and Willingness to Pay for Mandated Septage Management Services of Calamba Water District

Junsy P. Ybuan-Nieron

Laguna College of Business and Arts, City of Calamba, Laguna, Philippines

Author Email: jpybuan@yahoo.com

Date received: June 12, 2024

Date revised: July 11, 2024

Date accepted: July 17, 2024

Originality: 95%

Grammarly Score: 98%

Similarity: 5%

Recommended citation:

Ybuan-Nieron, J.(2024). Customers' acceptance and willingness to pay for mandated septage management services of Calamba water district. *Journal of Interdisciplinary Perspectives*, 2(8), 522-533.
<https://doi.org/10.69569/jip.2024.0276>

Abstract. Through its practical implications for the field, this study evaluated customer acceptance and willingness to pay for the mandated Septage Management Services provided by the Calamba Water District (CWD). The research, conducted with a rigorous descriptive correlational research design, focused on various factors: awareness and understanding, perceived importance, regulation compliance, and payment preferences. The ultimate goal was to develop an action plan to enhance customer awareness of the importance of septage management and foster a more informed, engaged, and accepting community. The study population comprised customers of the Calamba Water District, with respondents selected through simple random sampling. A total of 385 customers who had adequate awareness of wastewater management and had serviced their household septic tanks were included in the study. Descriptive statistics, including means and Likert scales, were used to describe customer acceptance and willingness to pay for septage management services. The Pearson Product-Moment Correlation was utilized to determine the relationship between customer acceptance and willingness to pay for these services. The findings revealed a significant relationship between customer acceptance and willingness to pay for CWD's mandated Septage Management Services. Specifically, higher levels of customer acceptance were associated with greater willingness to pay for the services. Conversely, as customer acceptance decreased, so did their willingness to pay.

Keywords: Customer acceptance; Willingness to pay; Septage management services; Water District; Environmental regulation compliance.

1.0 Introduction

Access to clean water and sanitation is a fundamental human right, as recognized by the United Nations Sustainable Development Goals (SDGs), specifically SDG 6, which aims to ensure the availability and sustainability of water and sanitation for all by 2030. This goal encompasses universal and equitable access to safe, affordable drinking water, improving water quality, and enhancing water-use efficiency. These targets are crucial for economic growth, as access to clean water and sanitation is integral to economic productivity and the well-being of individuals and communities. Achieving SDG 6 requires significant water and sanitation infrastructure investments, emphasising community participation and awareness.

Septage management plays a critical role in protecting public health, preserving the environment, and ensuring the sustainability of communities. Rapid urbanization and inadequate integrated sewerage systems have made

proper septage management increasingly essential. The lack of adequate wastewater treatment and disposal systems results in groundwater contamination, the spread of waterborne diseases, and the degradation of aquatic ecosystems. Regulatory bodies often mandate the establishment of septage management programs to address these challenges, shifting the responsibility for proper waste disposal from individual households to centralized systems managed by local utilities.

Globally, inadequate wastewater treatment and disposal systems have led to the pollution of water sources and the proliferation of waterborne diseases. Approximately 80-90% of wastewater is disposed of untreated or partially treated, often using makeshift on-site sanitation systems like septic tanks. This situation is particularly prevalent in developing countries in the Asia-Pacific region, leading to severe pollution of surface and groundwater sources and coastal ecosystems and significant economic impacts.

In the Philippines, only 10% of the 98 million people are connected to a piped sewerage system, with 84% of the population relying on septic tanks for wastewater disposal. A study by Baltazar et al. (2021) indicated that only 12% of septic tanks in the Philippines are regularly emptied, while the remaining 88% are either never or only partially emptied, posing a significant health risk.

The regulatory framework in the Philippines plays a crucial role in wastewater management. The Sanitation Code of the Philippines, also known as Presidential Decree PD 856, provides a comprehensive framework for ensuring environmental sanitation and public health. This legal instrument underscores the government's commitment to nurturing an environment conducive to human well-being and sustainable development. The Philippine Clean Water Act of 2004 (Republic Act 9275) also mandates the establishment of septage management programs at the local government level to address environmental degradation caused by water contamination.

Calamba City, a highly urbanized city in the Philippines, recognizes the importance of proper sanitation management. Consequently, the City Government of Calamba issued Resolution No. 317 Series of 2009, approving City Ordinance No. 456, Series of 2009, entitled "An Ordinance Establishing a Sewerage and Septage Management System in the City of Calamba, Setting Guidelines for its Implementation."

The Calamba Water District (CWD) has implemented mandated septage management services, recognizing their importance. However, a crucial gap exists in understanding customer attitudes towards this service, including their willingness to pay and acceptance. Thus, this study determined the factors influencing customer acceptance of the service, such as awareness, perceived importance, satisfaction, compliance, and trust. Additionally, it examined customers' willingness to pay, considering factors such as perceived value, financial capability, and payment preferences. By exploring the connection between customer perceptions and financial commitment towards mandated septage management services, the study provides valuable insights into the relationship between environmental regulations, service provision, and consumer behaviour. Studying customers' acceptance levels and willingness to contribute financially to the mandated septage management services holds immense significance for CWD's operational strategies and long-term waste management objectives.

Further, this study aims to thoroughly assess the level of acceptance and willingness to pay for mandated septage management services among customers. By comprehensively understanding these factors, the study is designed to provide invaluable insights for policymakers and service providers to develop robust, sustainable, and equitable septage management programs that effectively meet the needs and expectations of the community.

2.0 Methodology

2.1 Research Design

This study employed a descriptive correlational research design, which allowed the researcher to describe and analyze variables and determine if significant relationships exist between them. Descriptive research involves collecting data through surveys to answer questions and summarizing the data to explain existing conditions (Sirisilla, 2023). Correlational research design, on the other hand, measures the extent to which two or more variables are related (Seeram, 2019). Combined, descriptive-correlational research focuses on explaining the relationships between and among variables. This design is appropriate since the goal is to test hypotheses and answer survey questions about the level of acceptance of mandated septage management services provided by

the Calamba Water District and determine customers' willingness to pay for these services. Additionally, it sought to investigate the relationship between these two variables.

2.2 Research Participants

This study's respondents consisted of 385 Calamba Water District (CWD) customers who were appropriately aware of the Septage Management Service and had a household septic tank. The population comprised CWD customers residing in areas where the Septage Management Services are implemented. As of December 2022, there were 66,108 residential customers of CWD. Only those aware of septage management and with a household septic tank were considered respondents for the study. The selection of respondents was carried out through simple random sampling to ensure fairness and minimize potential biases. This method ensured that all eligible customers had an equal chance of being selected for the sample. The sample size was determined using G*Power, with an effect size of 0.182, a margin of error 0.05, and a confidence level of 0.95.

2.3 Research Instrument

The researcher utilized a self-constructed questionnaire to gather data from respondents. The questionnaire was divided into three parts: Part 1 covered personal demographic information, Part 2 assessed the customers' acceptance of the CWD Septage Management Services, and Part 3 determined the customers' willingness to pay for the CWD Septage Management Services. The questionnaire was initially presented to the research advisor for preliminary checking and approval to ensure the instrument's validity. For further validation, the researcher consulted experts, including a statistician, LCBA professors, a data analyst, and a representative from Calamba Water District. These experts provided comments and recommendations to improve the questionnaire's accuracy and comprehensiveness. To ensure the reliability of the research tool, internal consistency tests were performed using Cronbach's Alpha Coefficient. Additionally, pilot testing was conducted with twenty-one customers who were not part of the survey. The feedback and results from the pilot testing were used to refine the questionnaire, ensuring its reliability and effectiveness in gathering the necessary data for the study.

2.4 Data Gathering Procedure

The survey was conducted through face-to-face interactions (for customers unfamiliar with digital tools) and online platforms such as Google Forms. The participants were asked to answer the questions on the questionnaire, which were designed to gather information on the customers' acceptance of the septage management services and their willingness to pay for them. The collected data will be securely stored for a minimum of three to five years following final publication. Upon completion of this period, all digital data will be irrevocably deleted, and all physical data will be shredded or incinerated.

2.5 Ethical Considerations

Ethical considerations were a crucial aspect of this research. The investigator obtained informed consent from the respondents before data collection. The questionnaires were carefully designed to avoid degrading, discriminatory, or otherwise unacceptable language that could offend respondents. They were focused solely on collecting information directly related to the research questions, with no private or personal questions included. This research was guided by the Data Privacy Act (DPA) of 2012, which protects individual personal information. This ensured that the data gathered from the respondents was secured and would be used only for the specific intent of this study. By adhering to these ethical guidelines, the researcher aimed to protect the rights and privacy of all participants. The LCBA Research Ethics and Integrity Council (LCBA-REIC) thoroughly reviewed the responses to the conditions placed upon the ethical approval for this research project and unequivocally confirmed that they meet the rigorous requirements stipulated in the LCBA Research Manual. As a result, full ethical approval has been undeniably granted.

2.6 Data Analysis

Several statistical treatments were employed. Firstly, the Mean and the Likert scale were utilized to describe customers' acceptance and willingness to pay for the septage management services. These measures provided a comprehensive understanding of the central tendency and distribution of responses among the participants. Secondly, the Pearson Product-Moment Correlation was applied to explore the relationship between the level of customers' acceptance and their willingness to pay for the septage management services. This statistical method allowed for assessing the strength and direction of any association between these two variables, providing

valuable insights into the dynamics of customer attitudes and behaviors towards septage management services provided by the Calamba Water District.

3.0 Results and Discussion

3.1 Customers' Level of Acceptance of the Mandated Septage Management Services in CWD

In terms of Awareness and Understanding

Table 1. Descriptive statistics of the customers' level of acceptance of the mandated septage management services in CWD in terms of awareness and understanding

Indicators	Mean	Interpretation
1. Septage management refers to comprehensive programs for managing septic tanks and the procedures for desludging, transporting, treating, and disposing of septic tank contents.	3.51	Highly Accepted
2. Every household shall have a septic tank for proper septage management and disposal of wastewater.	3.58	Highly Accepted
3. To function appropriately, septic tanks must be cleaned or dislodged before the solids fill the tank's volume or every 3 to 5 years.	3.50	Highly Accepted
4. The improper septage management degrades water quality	3.53	Highly Accepted
5. The improper septage management harms the environment by polluting surrounding water bodies.	3.58	Highly Accepted
6. The improper septage management contaminates groundwater.	3.60	Highly Accepted
7. improper septage management causes water-related illnesses and hurts health.	3.56	Highly Accepted
Overall Result	3.55	Highly Accepted

Legend: 3.25-4.00 Highly Accepted (HA) 2.50-3.24 Accepted (A) 1.75-2.49 Partially Accepted (PA) 1.00-1.74 Not Accepted (A)

As shown in Table 1, The assessment of customers' acceptance of the Calamba Water District's Mandated Septage Management Services revealed a notably high level of awareness and understanding among respondents, with an overall mean score of 3.55. Notably, Indicator 6, which addressed groundwater contamination due to improper septage management, garnered the highest weighted mean of 3.60, indicating a high level of acceptance among customers. Conversely, Indicator 3, emphasizing the necessity of regular cleaning or desludging of septic tanks, scored the lowest mean of 3.50, still reflecting a high level of acceptance. This suggests that customers possess a strong awareness and understanding of the significance of proper septage management and its associated environmental and health risks. They recognize the importance of individual household responsibility in maintaining functional septic tanks and adhering to proper disposal practices. The acknowledgement of maintenance requirements, such as desludging every 3-5 years, coupled with understanding the adverse effects of improper septage management, may foster a positive attitude toward the necessity of septage management services. Consequently, customers may demonstrate a willingness to support initiatives by the Calamba Water District.

This finding resonates with a study conducted by the Asian Development Bank in 2019, which underscored that communities with heightened awareness about the repercussions of inadequate septage management were more inclined to perceive proper septage management as an urgent necessity. Therefore, the observed high level of acceptance and understanding among Calamba Water District customers aligns with broader trends, indicating the significance of awareness in shaping attitudes towards septage management initiatives.

In terms of Perceived Importance

Table 2. Descriptive statistics of the customers' level of acceptance of the mandated septage management services in CWD in terms of perceived importance

Indicators	Mean	Interpretation
1 Septic tank overflow or leakage contributes to water pollution.	3.52	Highly Accepted
2 Septage management services are essential to public health.	3.59	Highly Accepted
3 Septage management is crucial in combating waterborne diseases and pollution.	3.50	Highly Accepted
4 Septage management services would help gradually improve the city's water quality.	3.56	Highly Accepted
5 Septage management services would aid in the reduction of sanitation-related issues in the city.	3.51	Highly Accepted
Overall Result	3.54	Highly Accepted

As shown in Table 2, the assessment of customers' perceived importance of the Calamba Water District's Mandated Septage Management Services revealed a high level of acceptance, with an overall mean score of 3.54. Notably, Statement 2, emphasizing the importance of septage management services to public health, garnered the highest mean of 3.59, indicating strong acceptance among customers. Conversely, Indicator 3, which highlighted the crucial role of septage management in combating waterborne diseases and pollution, yielded the lowest mean

of 3.51, still reflecting a high level of acceptance. These results illustrate customers' positive perception of the importance of the septage management services provided by the CWD.

Calamba Water District customers recognize the significance of septage management and believe in these services' positive impact on water quality, public health, and overall environmental sustainability. They understand the direct environmental consequences of septage leakage, which can lead to water contamination and the spread of waterborne diseases. This underscores the critical role of septage management in combating waterborne diseases and reflects customers' positive perceptions of its potential to address sanitation-related issues and gradually improve the city's water quality.

Furthermore, these findings emphasize customers' understanding of the interconnectedness of water quality, sanitation, and public health. They also highlight customers' expectations of the long-term positive outcomes of effective septage management services, indicating a comprehensive understanding of the services' potential to address broader societal challenges beyond water quality. Such positive perceptions suggest that customers will likely accept and be more receptive to CWD's septage management services.

The findings are consistent with the study conducted by Baltazar et al. (2021), which highlighted how customers' awareness of the environmental impact and health implications of inadequate septage management directly influence their perceived importance of such services. Similarly, Asmara et al. (2021) emphasized the essential role of public perception in driving acceptance, with communities prioritizing the importance of proper waste management and being more receptive to related initiatives. Positive perceptions can be a foundation for further collaboration between the water district and the community to strengthen septage management initiatives.

In terms of Compliance with Regulations

Table 3. Descriptive statistics of the customers' level of acceptance of the mandated septage management services in CWD in terms of compliance with regulations

Indicators	Mean	Interpretation
1 I know that the Clean Water Act of 2004 mandated the Local Government Unit in partnership with Water Utilities to provide sewerage or septage management services.	3.36	Highly Accepted
2 Failure to comply with the city ordinance regarding septic tank desludging will result in a penalty.	3.33	Highly Accepted
3 Household septic tanks are regularly emptied or dislodged once every 3-5 years	3.37	Highly Accepted
4 If it complies with local ordinances, the Calamba Water District's septage management services can be considered	3.51	Highly Accepted
Overall Result	3.39	Highly Accepted

As shown in Table 3, the assessment of customers' compliance with regulations regarding the Calamba Water District's Mandated Septage Management Services revealed a high level of acceptance, with an overall mean score of 3.39. Particularly, Indicator 4, which highlighted customers' willingness to consider CWD's septage management services if they comply with local ordinances, garnered the highest mean of 3.51, indicating strong customer acceptance. Conversely, Indicator 2, emphasizing the penalties for failure to comply with city ordinances regarding septic tank desludging, yielded the lowest mean of 3.33, still reflecting a high level of acceptance. These results underscore customers' varying awareness of the wastewater regulatory framework.

The data highlight the importance of expanding educational initiatives to better inform the community about the specific provisions and requirements of the Clean Water Act. This includes emphasizing the long-term benefits of adhering to recommended septic tank maintenance and reinforcing the consequences of non-compliance to encourage adherence to regulations. Customers' willingness to consider CWD's septage management services if they comply with local ordinances suggests a positive correlation between community perception and adherence to regulations. Customers are more inclined to support the water district's services if they align with established rules.

This finding is consistent with the study by Dorji et al. (2019), which emphasized that adherence to regulations is crucial for effective waste management. The effectiveness of septage management initiatives relies heavily on community compliance with regulations set forth by local ordinances and national legislation such as the Clean Water Act of 2004. Additionally, Amarille and Balomaga (2021) highlighted the critical role of awareness and

regulatory understanding, noting that compliance with regulations is intricately linked to awareness of their existence and implications. Novillos (2021) offered a micro-level view of regulatory compliance, focusing on households, and recognized that multiple factors, including awareness levels, enforcement mechanisms, and community engagement, influence regulatory adherence. These studies collectively underscore the importance of regulatory compliance and awareness in achieving effective septage management.

In Terms of Satisfaction With Service Quality

Table 4. Descriptive statistics of the customers' level of acceptance of the mandated septage management services in CWD in terms of satisfaction with service quality

Indicators	Mean	Interpretation
1 Calamba Water District provides high-quality service.	3.41	Highly Accepted
2 The CWD's Septage Management Services would be easily accessible.	3.35	Highly Accepted
3 The CWD's septage facilities and equipment are properly designed, installed, and maintained.	3.38	Highly Accepted
4 The CWD has the safe and proper vehicles and equipment to collect and transport the collected septage to its treatment plant.	3.33	Highly Accepted
5 The Calamba Water District's treatment facility complies with the existing standards and regulations, including the disposal of treated septage.	3.39	Highly Accepted
Overall Result	3.37	Highly Accepted

As shown in Table 4, the assessment of customers' satisfaction with the Calamba Water District's Mandated Septage Management Services revealed a high level of acceptance, with an overall mean score of 3.37. Indicator 1, which assessed customers' perception of the district providing high-quality service, yielded the highest mean of 3.41, indicating strong acceptance among customers. Conversely, Indicator 4, focusing on the availability of safe and proper vehicles and equipment for septage collection and transportation, yielded the lowest mean of 3.33, still reflecting a high level of acceptance. These results underscore customers' overall satisfaction with the Calamba Water District's services.

Customer satisfaction is crucial for evaluating the success of Septage Management initiatives, as it reflects the effectiveness of service delivery and infrastructure. The majority of customers express a high level of satisfaction, as reflected in the range of scores falling within the "Strongly Agree – Highly Accepted (HA)" category (3.25-4.00).

The data indicate that customers perceive the services as being performed well and find them easily accessible, well thought out, and compliant with relevant regulations. This suggests a holistic relationship between customer awareness, compliance, and overall satisfaction, emphasizing the importance of a well-rounded and effective septage management program.

Bautista and Sarigumba (2022) emphasized that when individuals perceive services as prompt, reliable, and well-communicated, their satisfaction with the service provider increases. Moreover, satisfied customers are more likely to recognize the value of the services and their role in maintaining a clean and healthy environment. The quality of service directly influences the public's level of satisfaction and, consequently, their acceptance of mandated services. When customers are content with the quality of septage management, they are more inclined to view the services as beneficial and necessary.

In terms of Trust

Table 5. Descriptive statistics of the customers' level of acceptance of the mandated septage management services in CWD in terms of trust

Indicators	Mean	Interpretation
1 I believe the CWD's Septage Management Services is reliable and effective	3.42	Highly Accepted
2 I believe the CWD's Septage Management Services protects the environment.	3.43	Highly Accepted
3 I believe the CWD's Septage Management Services manages poor sanitation problems in the city.	3.35	Highly Accepted
Overall Result	3.40	Highly Accepted

As shown in Table 5, the assessment of customers' trust in the Calamba Water District's Mandated Septage Management Services revealed a high level of acceptance, with an overall mean score of 3.40. Notably, the indicator "I believe the CWD's Septage Management Services protects the environment" yielded the highest mean of 3.43, indicating strong customer acceptance. Conversely, the indicator "I believe the CWD's Septage Management Services manages poor sanitation problems in the city" yielded the lowest mean of 3.35, still

reflecting a high level of acceptance. These results indicate customers' trust in the district's ability to provide reliable and effective septage management services.

Customers perceive the Calamba Water District as capable and dependable in executing its mandated responsibilities, fostering a strong belief in its commitment to environmental protection through septage management services. This positive perception aligns with the increasing importance of environmental stewardship and suggests that the district has successfully communicated its dedication to sustainable practices. However, the lower mean score for the indicator related to managing poor sanitation problems in the city suggests an area that may require focused attention to address any existing customer concerns or misperceptions.

The Metropolitan Naga Water District's progress report (2020) emphasized the necessity of building and maintaining trust among the public. It provided insights into strategic initiatives undertaken by the water district to foster a sense of trust and credibility. Transparent communication regarding program objectives, progress, and outcomes emerged as a vital tool for instilling confidence in the district's actions. The report likely delved into the district's endeavors to implement the septage management program efficiently and effectively, which is instrumental in building customer trust. Such efforts enhance customer perception and trust in the district's ability to manage sanitation issues effectively.

3.2 Customers' Level of Willingness to Pay for the Mandated Septage Management Services in CWD *In terms of Perceived Value*

Table 6. Descriptive statistics of the customers' level of willingness to pay for the mandated septage management services in CWD in terms of perceived value

Indicators	Mean	Interpretation
As a customer, I am willing to avail and pay for the septage management services offered by the CWD if it means better quality and more efficient service delivery.	3.33	Highly Willing
Overall Result	3.33	Highly Willing

As shown in Table 6, the assessment of customers' perceived value regarding the Calamba Water District's (CWD) Mandated Septage Management Services revealed a high willingness to pay, with an overall mean score of 3.3, categorized as "Very Willing." The data indicate that customers recognize the value of the CWD's efficient and high-quality septage management services.

This suggests that customers consider improved service quality and efficiency compelling reasons to financially support and participate in the mandated septage management services offered by the CWD. A positive attitude towards services is crucial in ensuring a customer-centric approach. Understanding and catering to the community's expectations and preferences is essential.

In this context, the willingness to pay is not merely a financial transaction but a strategic partnership between the water district and its customers. Both parties work together to achieve everyday environmental sustainability and public health goals. By recognizing and valuing the importance of efficient septage management services, customers contribute to the broader objectives of environmental conservation and community well-being. This mutual understanding and cooperation foster a collaborative relationship between the water district and its customers, ultimately leading to the successful implementation of septage management initiatives.

Moreover, the implications of these findings highlight an opportunity for Calamba Water District to leverage the customers' strong inclination to pay based on perceived value. By aligning their strategies with customer expectations and emphasizing the environmental and public health benefits, the CWD can foster continued support, contributing to the success and sustainability of their mandated septage management services. Pavia (2019) emphasized that perceived value was not solely based on the tangible benefits gained but also encompasses emotional, social, and environmental aspects. This aligned with the idea that customers' perceived value of septage management services extends beyond mere economic calculations. Factors such as improved community health reduced environmental pollution, and enhanced quality of life contribute to the comprehensive perceived value of these services.

In terms of Financial Capability

Table 7. Descriptive statistics of the customers' level of willingness to pay for the mandated septage management services in CWD in terms of financial capability

Indicators	Mean	Interpretation
As a customer, I will pay if the fee is reasonable.	3.38	Highly Willing
Overall Result	3.38	Highly Willing

As shown in Table 7, assessing customers' financial capability regarding their willingness to pay for Septage Management Services if the fee is reasonable revealed a high level of willingness, with an overall mean score of 3.38, categorized as "Very Willing." This suggests that customers are open to financial participation, provided the associated costs align with their perception of fairness and reasonableness.

This willingness to pay reflects a sense of civic responsibility and cooperation among customers, as they acknowledge their role in supporting essential public services that contribute to environmental and public health. Customers recognize the importance of investing in septage management services to ensure the proper treatment and disposal of wastewater, safeguarding the environment and public health.

Zvobgo (2021) emphasized that customers' ability to pay and perceived affordability significantly influenced their willingness to contribute financially to water supply services. These insights underscore the importance of considering customers' financial capacity and perceptions of affordability when designing pricing structures for essential services like septage management. Water districts can foster greater willingness to pay and enhance community support for vital environmental initiatives by ensuring that fees are reasonable and aligned with customers' expectations.

In Terms of Payment Preferences

Table 8. Descriptive statistics of the customers' level of willingness to pay for the mandated septage management services in CWD in terms of payment preferences

Indicators	Mean	Interpretation
1 As a customer, I am willing to pay the fee with the water bill.	3.24	Willing
2 As a customer, I am willing to pay for a one-time septic tank desludging service.	3.19	Willing
3 As a customer, I will pay P 60.00 to P 100.00 monthly for the Septic Tank Desludging/ Siphoning.	3.11	Willing
Overall Result	3.18	Willing

As shown in Table 8, assessing customers' payment preferences regarding their willingness to pay for Calamba Water District's (CWD) Mandated Septage Management Services revealed a positive attitude, with an overall mean score of 3.18, categorized as "Willing." The statement "As a customer, I am willing to pay a fee together with the water bill" yielded the highest mean of 3.24, indicating customer agreement. Conversely, Indicator 3, "As a customer, I am willing to pay ₱60.00 to ₱100.00 per month for the Septic Tank Desludging or Siphoning," yielded the lowest mean of 3.11, reflecting customer agreement.

These findings suggest that customers have a positive attitude towards paying for services, influenced by convenience and flexibility. Customers also exhibit varied preferences regarding payment structures, indicating their openness to different options. The preference for paying fees alongside the water bill is driven by the convenience of a consolidated payment method, simplifying the financial transaction for customers. Conversely, the preference for a one-time desludging service may indicate a desire for flexibility and control over individual service engagements. Lastly, the willingness to pay a specific monthly amount suggests that customers are open to making regular contributions, highlighting their commitment to supporting the service.

These findings underscore the importance of aligning pricing structures with customers' perceived value and affordability. Understanding customers' practical considerations is crucial in shaping payment preferences and willingness to pay for septage management services. As outlined in the FSSM plan (2019), strategies to encourage community participation include structuring the payment system to ensure affordability and ease of use. Water districts can enhance customer satisfaction and support for essential environmental initiatives by offering flexible payment options and ensuring pricing transparency.

3.3 Relationship Between Customers' Acceptance and Willingness to Pay

The statistical analysis revealed a significant relationship between customer acceptance and willingness to pay for the Calamba Water District's (CWD) mandated septage management service. As indicated in the table, all probability values were 0.000, which is less than the level of significance set at 0.05. Consequently, the null hypothesis was rejected.

This signifies a direct association between customers' acceptance of Septage Management Services and their willingness to pay. The positive and significant correlation coefficients for each pair of variables – Awareness and Understanding, Perceived Importance, Satisfaction with Service Quality, Compliance with Regulations, and Trust in the Water District – demonstrate that as customers' acceptance of mandated septage management services increases, their willingness to pay for these services also increases.

Table 9. Analysis of the relationship between customer's acceptance and willingness to pay for the CWD's septage management services

Customer's Acceptance Of Mandated Septage	Customers' Willingness To Pay	R-Value	P Value	Remarks	Decision
Awareness and Understanding	Perceived Value	0.465**	.000	Significant	Reject Ho
	Financial Capability	0.483**	.000	Significant	Reject Ho
	Payment Preferences	0.411**	.000	Significant	Reject Ho
Perceived Importance	Perceived Value	0.492**	.000	Significant	Reject Ho
	Financial Capability	0.502**	.000	Significant	Reject Ho
	Payment Preferences	0.387**	.000	Significant	Reject Ho
Satisfaction with Service Quality	Perceived Value	0.558**	.000	Significant	Reject Ho
	Financial Capability	0.535**	.000	Significant	Reject Ho
	Payment Preferences	0.513**	.000	Significant	Reject Ho
Compliance with Regulations	Perceived Value	0.549**	.000	Significant	Reject Ho
	Financial Capability	0.551**	.000	Significant	Reject Ho
	Payment Preferences	0.555**	.000	Significant	Reject Ho
Trust in Water District	Perceived Value	0.572**	.000	Significant	Reject Ho
	Financial Capability	0.476**	.000	Significant	Reject Ho
	Payment Preferences	0.515**	.000	Significant	Reject Ho

*Correlation is significant at the 0.05 level (2-tailed)

**Correlation is significant at the 0.01 level (2-tailed)

The study results hold significant implications for the Calamba Water District, emphasizing the critical link between Customer Acceptance and Willingness to Pay. To encourage greater financial participation, the district must prioritize customer education, improve communication, build stronger relationships, and enhance technical service delivery aspects. Strengthening awareness campaigns and emphasizing the significance of septage management services are crucial steps, as well as ensuring high-quality service and fostering trust through transparent communication. These components are integral to a comprehensive strategy that ensures sustainable support and engagement.

Furthermore, understanding Payment Preferences highlights the importance of aligning payment structures with customer preferences to boost satisfaction and willingness to contribute financially. The intricate relationship between customer acceptance and willingness to pay should guide the development of comprehensive strategies for sustainable support and engagement in the Calamba Water District's mandated septage management services.

In their recent study, García-López et al. (2021) shed light on the relationship between economic considerations and decision-making regarding environmental services. They found that customers weigh the costs and benefits of these services, impacting their willingness to pay. Similarly, Mensah et al. (2020) revealed that income, education, and perceived benefits influence the willingness to pay for sanitation services. Eridadi et al. (2021) also found that households are willing to pay more for improved water supply services, but affordability remains a challenge, particularly for low-income households. These studies underscore the importance of addressing economic considerations and perceived benefits to enhance customer participation and support for essential environmental initiatives.

3.4 Proposed Action

The proposed plan aims to enhance customers' awareness of the importance of Septage Management, ultimately seeking to foster a more informed, engaged, and accepting community.

Table 10. Proposed action plan

Key Areas	Objective	Strategies/Activities	Frequency	Persons Involved	Success Indicators
Awareness And Understanding	To raise awareness among customers about the importance of proper household septic tank maintenance	Organize community workshops or seminars to educate residents about the importance of periodic cleaning and maintenance of septic tanks.	Q1 - Q2	Commercial Department Manager/ Public Information Committee/ Septage Management Committee	85 % of the customers are adhering to the recommended desludging schedules 10% decrease in non-compliance penalties
Compliance With Regulations	To reinforce compliance with existing regulations and ordinances related to septage management.	Implement a targeted regulatory awareness campaign by distributing informational pamphlets and increasing clarity on penalties through signage and online platforms. Conduct regular compliance audits and joint inspections.			
Perceived Importance	To increase awareness about the role of sewage management in preventing waterborne diseases and pollution among customers.	Partner with the LGU, City Health Office, and NGOs to raise community awareness regarding proper septage management to prevent waterborne diseases and protect water sources from pollution.	Whole year round	Public Information Committee	90% community acceptance rate of the Septage Management Services. Increase community involvement in environmental and sanitation practices
Satisfaction With Service Quality	To improve the quality and efficiency of septage management services and increase customer satisfaction with CWD's services.	Implement a comprehensive program for assessing and improving septage management processes to ensure high service quality.	Whole year round	Operations Department Manager	95% of customers satisfaction with the overall service quality. 10% reduction in the complaints received from customers Successful implementation of technological upgrades and equipment enhancements Improved Processes
Trust In Terms Of Water District	To strengthen trust in CWD's commitment to managing poor sanitation by properly implementing Septage Management Services.	Provide information on how SMS services contribute to environmental sustainability and public health. Explore collaborations with NGOs and implement Corporate Social Responsibility initiatives related to sanitation and public health. Keep the customers 'informed about the progress of sanitation initiatives	Whole year round	Management, Commercial Department Manager / Public Information Committee	95% positive feedback from community engagement programs 10% increase in trust scores from customer surveys Successful collaborations with NGOs
Perceived Value, Financial Capability And Payment Preferences	To increase customers 'willingness to avail themselves of and pay for Septage Management Services.	Implement a payment structure that suits the customer's preferences. The septage fee should not exceed 5% of the Low-Income Group	Whole year round	Management, Finance and Commercial Manager	90% collection efficiency 10% reduction on the customers' late payment

4.0 Conclusion

Based on the findings, the following conclusions were drawn:

Customers must comprehensively understand the regulatory framework governing wastewater management. They also recognize the importance of Septage Management and its potential environmental and public health contributions. The positive perceptions of the customers towards the Mandated Septage Management indicate their acceptance of the service, which is based on their trust in the ability of the Calamba Water District (CWD) to provide high-quality and accessible services. Additionally, customers recognize the value of efficient and high-quality Septage Management Services. The results suggest that customers consider improved service quality and efficiency compelling reasons to financially support and participate in CWD's mandated septage management services. Additionally, the results show that customers have different payment preferences, which means pricing structures should align with customers' preferences and affordability. Moreover, the positive and significant correlations suggest that customers' acceptance is closely associated with the customers' willingness to pay for the CWD's Mandated Septage Management Services. Therefore, the proposed action plan is necessary to enhance customers' acceptance of Septage Management and willingness to pay. This can be achieved by creating an effective communication strategy that focuses on the service's positive aspects, highlighting its significance, benefits to the community, and contributions to environmental and public health.

Based on the above conclusions, suggestions and recommendations are provided. First, although there is already high awareness and understanding of the importance of Mandated Septage Management Services, ongoing educational campaigns may help further inform customers and non-customers of the Calamba Water District (CWD) about the significance of these services. It is important to encourage open dialogue between the CWD and the community to address any questions or concerns and to maintain transparent communication about the agency's activities, achievements, and plans related to percentage management. The quality of Septage Management Services should be regularly assessed and enhanced to meet or exceed customer expectations. Customers may also be made fully aware of the regulatory frameworks governing wastewater management to ensure that they understand their roles and responsibilities. Finally, the CWD may continue to build and reinforce trust through consistent, reliable, and high-quality service delivery.

Additionally, Effective Septage Management Services require a clear and effective communication plan with customers. By presenting a transparent pricing structure and outlining the benefits of the service, customers will be more likely to engage with the service. Various payment options may be offered to cater to customers' diverse preferences. Regular assessments may be conducted to ensure that the pricing structures remain affordable. Engaging the community in discussions about pricing structures and gathering their input on preferred payment options will help create a service that is effective and affordable for everyone.

Moreover, to increase customer acceptance and willingness to pay, the Calamba Water District should take targeted actions to improve customer perceptions. This may be achieved through educational campaigns, workshops, and communication strategies that emphasize the importance and benefits of their septage management services. The Water District will likely see increased support and financial contributions by building a positive image and understanding among customers.

Furthermore, the proposed action plan may focus on collaboration and adaptability. It is essential to regularly review progress, collect customer feedback, and adjust strategies accordingly. Engaging cross-functional teams, including the Commercial Department, Operations, Public Information Committee, and Septage Management Committee, will ensure a comprehensive and coordinated approach. Continuous evaluation through key performance indicators will guide adjustments to the plan, ensuring its effectiveness in creating an informed, engaged, and accepting community for mandated septage management services in the Calamba Water District.

Lastly, further research is necessary to understand how promoting community ownership and shared responsibility can positively influence customers' acceptance and willingness to pay for septage management services. Additionally, exploring advancements in wastewater treatment can aid in achieving sustainable development goals by promoting responsible waste management practices, preserving resources, and mitigating the impact of human activities on the environment.

5.0 Contributions of Authors

The sole author conceptualized and implemented the study.

6.0 Funding

This work received no specific grant from any funding agency.

7.0 Conflict of Interests

The author declares no conflicts of interest about the publication of this paper.

8.0 Acknowledgment

The author would like to express gratitude to everyone who has contributed in any way to the completion and improvement of this study and journal article. Special acknowledgment is extended to the Dean, Research Director, and Panels of the Graduate School of the LCBA for fostering an environment conducive to academic growth. A warm thank you is also extended to Mr. Exequiel A. Aguilar, Jr., Head of the Calamba Water District, for his unwavering support and generosity during this study. Lastly, the author would like to extend heartfelt thanks to their family for their unwavering love, support, and encouragement.

9.0 References

- Amarille, M., & Balomaga, C. (2021). Awareness and practices on domestic wastewater sanitation of select coastal barangay in Surigao City, Philippines. *Journal of Ecosystem Science and Eco-Governance*, 3(1), 14–24. <https://journals.carsu.edu.ph/JESEG/article/view/36/18>
- Asian Development Bank. (2019). Surveying septage management planning in Asia and the Pacific.
- Asmara, A., Rahmawati, S., Yulianto, A., Abay, M., Arlina, D., & Wacano, D. (2021). A comprehensive assessment of septage management in Bantul, Yogyakarta. *Indonesian Journal Of Urban And Environmental Technology*, 4(2), 109–124. <https://doi.org/10.25105/urbanenvirotech.v4i2.7624>
- Baltazar, D. E., Harada, H., Fujii, S., Tan, M. F., & Akib, S. (2021). A comparative analysis of septage management in five cities in the philippines. *Eng*, 2(1), 12–26. <https://doi.org/10.3390/eng2010002>
- Bautista, L. E. M., & Sarigumba, M. E. (2022). Final report: Septage management program for Zamboanga City.
- Dorji, U., Tenzin, U., Dorji, P., Wangchuk, U., Tshering, G., Dorji, C., Shon, H. K., Nyarko, K. B., & Phuntsho, S. (2019). Wastewater management in urban Bhutan: Assessing the current practices and challenges. *Chemical Engineering Research & Design*, 132, 82–93. <https://doi.org/10.1016/j.psep.2019.09.023>
- Eridadi, H. M., Yoshihiko, I., Alemayehu, E., & Kiwanuka, M. (2021). Evaluation of willingness to pay toward improving water supply services in Sebeta town, Ethiopia. *Journal of Water, Sanitation and Hygiene for Development*, 11(2), 282–294. <https://doi.org/10.2166/washdev.2021.204>
- García-López, M., Melgarejo, J., & Montano, B. (2021). The financing of wastewater treatment and the balance of payments for water services: Evidence from municipalities in the region of Valencia. *Sustainability*, 13(11), 5874. <https://doi.org/10.3390/su13115874>
- Metropolitan Naga Water District. (2020). MNWD septage management program nears full commissioning. <http://www.mnwd.gov.ph/category/news-and-events/page/22/>
- Novillos, E. O. (2021). Septage management and wastewater disposal practices among household concessionaires of water district in Laguna, Philippines. UPOU Main Website. <https://doi.org/10.5281/zenodo.6345508>
- Pavia, J. V., & Conjoint.ly. (2019). Willingness to pay: What it is and how to measure it.
- Seeram, E. (2019). An overview of correlational research. *Radiologic Technology*, 91(2), 176–179. <http://www.radiologictechnology.org/content/91/2/176.full>
- Sirisilla, S. (2023, February 9). Bridging the gap: Overcome these 7 flaws in descriptive research design. *Enago Academy*. <https://www.enago.com/academy/descriptive-research-design/>
- Mensah, A., Smith, L., Bedu-Addo, D., & Awal, M. (2020). The contribution of civil society generated evidence to the improvement of sanitation services in Ghana. In *Using evidence in policy and practice*, 188–205. <https://doi.org/10.4324/9781003007043-11>
- Zvobgo, L. (2021). Consumer ability and willingness to pay more for continuous municipal water supply in Chitungwiza. *Sustainable Water Resources Management*, 7(2), 23. <https://doi.org/10.1007/s40899-021-00498-9>

Stars and Spikes: Analyzing Fan Attraction to Star Players in the Philippine Professional Volleyball League

Edward P. Kho*, Marla Frances T. Mallari

College of Human Kinetics, University of the Philippines Diliman, Quezon City, Philippines

*Corresponding Author Email: edkho@up.edu.ph

Date received: June 26, 2024

Date revised: July 11, 2024

Date accepted: July 17, 2024

Originality: 97%

Grammarly Score: 99%

Similarity: 3%

Recommended citation:

Kho, E., & Mallari, M.F. (2024). Stars and spikes: Analyzing fan attraction to star players in the Philippine professional volleyball league. *Journal of Interdisciplinary Perspectives*, 2(8), 534-543.
<https://doi.org/10.69569/jip.2024.0312>

Abstract. The study sought to describe fan consumption patterns in volleyball, identify factors influencing fan engagement, pinpoint attractive attributes of volleyball players, and compare influences on fanhood across demographic groups. The research was conducted in Pasig City, focusing on a geographically delimited non-probability sample. Data was collected through in situ surveys using questionnaires to obtain participants' demographic profile and their motivations, preferences, and consumption patterns as league fans during match days, specifically during the last preliminary round of the league's conference in the third week of April, with particular emphasis on the timing of visits across different days of the week. Two hundred fifty respondents participated in the survey, comprising both genders ranging in age from 10 to 78 years. Results reveal that participants identify as avid league fans and consider having a favorite league player as "definitely important" in connection with their fanhood. As to the traits of star players that attract them, 11 attributes are figured highly: passionate, professional, respectful, fair, approachable, humble, exciting, entertaining, winnable, articulate, and humble. The results provide contemporary insights into sports consumption motivations and attitudes of league fans, which can be instrumental in developing effective marketing strategies, enhancing spectator experience, and deepening the understanding of sports fandom among the Filipino audience.

Keywords: Volleyball; Sports fans; Professional sports; Star players.

1.0 Introduction

Sports, in the context of entertainment, is a multi-billion dollar industry (Humphreys & Ruseski, 2009). The same observation could likely be made in the Philippines. Based on media coverage of various spectator sports ranging from basketball, boxing, volleyball, and football, the sports industry may contribute significantly to the Philippine economy through direct and related transactions. Volleyball, for instance, has been yielding related business transactions in the form of sports sponsorships that are part of Philippine economic activities (Blanco, 2016). Sports sponsorship has been proven to influence customer views and purchase intentions (Koronios et al., 2016; Seo, 2022). In the Philippine economic landscape, sports sponsorship has played a crucial role in driving revenue growth and expanding markets, not only in the sports business but also in the country's overall economic growth (Blanco, 2016). Spectator sports, as primary indicators of the sports sector's performance as a business industry, are susceptible to prevailing market conditions and employ more aggressive marketing strategies to engage the public (Grove et al., 2012). Hence, it is common for commercial brands to associate sports sponsorship with purchase intentions to team performance, stars, and the moderating role of team identification (Ngan et al., 2011). Further, the same point is highlighted by White and Ting (2024), wherein their findings emphasized that identification influences the effects of intrinsic and extrinsic motivation on sports supporters' loyalty and

specifically regulates the adverse effects of extrinsic motivation on loyalty and strengthens loyalty when levels of satisfaction decline.

The audience size and fanbase of volleyball have grown over the years (Ochosa, 2015). Currently, volleyball matches of the collegiate league University Athletic Association of the Philippines (UAAP) and games of the Premier Volleyball League (PVL) are both aired on One Sports channel, a cable television channel in the Philippines, streamed online simultaneously over Pilipinas Live app by subscription. The PVL is a professional volleyball league for women, the only professional volleyball league in the country. It began as a collegiate league for women in 2014, initially called Shakey's V-League (About PVL, 2024). Three years later (in 2017), it was renamed Premier Volleyball League to transition to professional status, allowing corporate clubs and non-collegiate teams to participate.

Sports fanhood primarily involves behavioral aspects (Keaton, 2013), making evaluating sports consumption motivations among fans complex. This was pointed out by Galily et al. (2024) when they cited the study of Giulianotti (2002), which mentioned that sports fans' behavior is a multifaceted phenomenon. It is worth considering what motivates audiences to like a particular sport, given that sports are often viewed as entertainment (Shank & Lynberger, 2015). The dimensions of the motivations of sports consumers are highly dynamic. Interestingly, it has been pointed out that attachment to specific players is one of the reasons why sports consumers patronize the sport (Robinson & Trail, 2005). This is apparent in sports leagues, where various teams compete to acquire star players. It is assumed that the popularity of these players will attract followers and fans and provide high traction with a broader audience (Bodet et al., 2019). Hoegele et al. (2014) asserted that superstars attract new fans and contribute to retaining existing fans. On the level of a sports fan, liking or identification with a player indirectly affects the intention to sustain patronage of the sport in consideration (Wu et al., 2012). In the Philippines, the presence of sports personalities may be an area of inquiry about audience attraction to a particular sport due to the country's predisposition to celebrities (Radiamoda et al., 2023). However, empirical data in the Philippine setting to support this view is scant. Few studies provide an understanding of sports fandom in the Philippines. The availability of empirical studies in this area could help frame or contextualize the prevailing practical knowledge about sports fans among sports administrators and managers, sports marketers, and even commercial sponsors in light of how a sports league other than basketball could gain traction among sports audiences.

This study aimed to reveal how fanhood and aspects or attributes of sports personalities intertwine, using the league fans' information and perceptions as a case in point. The findings may serve as a cross-section of the volleyball fan community and offer a preliminary examination of the influence of sports personalities on audience growth within a specific sport. Additionally, the study could provide insights into how a distinct group, such as respondents from the volleyball league, collectively perceives sports personalities, serving as a foundation for further investigations into the impact of sports figures in this context. The results presented here may offer a starting point for subsequent studies in sports management and the development of effective, pragmatic strategies for practitioners aiming to maintain a steady flow of sports consumers. Given the dynamic nature of the factors of sports consumption motivations, this study may serve as foundational work for future research on sports fandom and marketing, particularly in understanding the motivational drivers of sports fans. Moreover, this research may provide valuable insights to gauge ways to attract Filipino audiences to a specific sports league, mainly as influenced by star players, considering the Philippines' strong historical and cultural identification with basketball popularity (Antolihao, 2012). Subsequently, follow-up research is proposed as the findings of these recommended studies could provide a jump-off point for derivative studies that would be operative and practical in continually evolving the available literature and studies on sports marketing and sports management.

2.0 Methodology

2.1 Research Design

This descriptive research employed a cross-sectional quantitative approach focused on a daypart-limited probability sample. Data collection involved administering surveys using questionnaires at the game venue on three consecutive occasions from April 23 to 27, 2024. Specific emphasis has been placed on the timing of visits – considering days of the week and daypart – to increase the likelihood of capturing fan representatives from all twelve league teams.

2.2 Participants of the Study

Respondents to this research were randomly chosen in situ at the Philsports Arena, the venue of the matches, in Pasig City on the fourth week of April, the last week of the preliminary round of the league's conference, following a procedure that imposed the least disruption on the live viewing of the acceding subjects. The survey participants are all ticket holders. The study excluded non-paying spectators, members of the press, venue personnel, league staff, and their guests from participation.

The study utilized an intercept survey method with a convenience quota non-probability sampling approach. Respondents were recruited from among the game audience members during the specified time frame. Based on the highest number of spectators on record for a single game day (Agcaoili, 2024), the study aimed to recruit 250 respondents to participate in the survey, approximately 1% of that record number. The median age of respondents is 31, with the mean age at 33.76 ± 1.64 . Most survey participants are female, accounting for 63.20%, while 36.80% are male. At 72%, most respondents identified themselves as heterosexual, 48.40% of whom are female – almost a quarter (22.40%) of the respondents declared themselves members of the LGBTQI community. The respondents were also classified into eight (8) age categories from 15 years old and below to 70 years old and above. In line with ethical standards, aside from the assent of the participant deemed not yet of legal age, prior consent from the accompanying parent or adult was sought and obtained.

Further, the survey participants were classified into three (3) groups regarding work status as respondent type, with the majority working. Respondents who declared they are students (17.60%) are primarily under 20 years old (9.60%). Those in the age bracket 50-59 years are prevalently working (19 out of 21), while most respondents in the age range 20-49 years also work (183 out of 194).

2.3 Research Instrument

This study used a modified version of the Project Sports Questionnaire, a structured questionnaire developed in earlier research by Kho (2018). The questionnaire included 13 questions with pre-determined, close-ended response options, focusing on various aspects of the participants' sociodemographic characteristics and their motivations (reasons for following the league, essential traits of favorite league player), preferences (favorite league team, importance of favorite league player, level of fanhood), and consumption patterns (live audience frequency, league following in other platforms) as league fans. Each variable's respective Cronbach's alphas were 0.710, 0.719, and 0.719.

Importance of a Favorite League Player and Level of Fanhood

Preferences were measured by questions asking for a favorite league team, favorite league player, and self-assessment of the level of league fanhood. The first two items were multiple-choice questions. The third item used a Likert scale. Participants were asked to rate a single item, "*You mentioned that you have watched a league match at least once or follow sports news about the league in any media. Which of the following best describes you as a fan of any team in the league?*" to indicate their level of fanhood using a Likert scale of 5 to 1, with 5 as "definitely an avid fan" and 1 for "definitely not an avid fan." On the other hand, participants were asked to consider the importance of having a favorite league player for spectators to be attracted to or interested in the league on a scale of 5 (definitely important) to 1 (definitely not important).

Attributes of a Favorite League

Questions on motivations corresponded to reasons for following the league and essential traits of a favorite league player. The questions for this variable utilized a Likert scale. Its second item used the construct of psychological motives that relate to team and athlete identification cataloged by Funk and James (2002, 2006), as discussed in the study of Absten (2011). The variable of consumption patterns as league fans corresponded to questions on live audience frequency and league following on other platforms. Both were multiple-choice questions. A list of attributes of a favorite league player composed of seventeen (17) traits were rated by the respondents along a five-point Likert-type scale, from 1 (definitely not important) to 5 (definitely important). These traits were then factor analyzed and yielded three factors, namely "vicarious achievement" (for items exciting, entertaining, winnable, articulate, humble beginnings, and good looking), "nostalgia" (for items passionate, professional, respectful, fair, approachable, and humble), and "peer group acceptance" (for items townmate, schoolmate, having familial

connection, and influence of friend/family). The internal consistency of each of these factor traits was determined with Cronbach's alpha of 0.710 (factor 1 - vicarious achievement), 0.719 (factor 2 - nostalgia), and 0.719 (factor 3 - peer group acceptance).

In Kho (2018), the validity of the original version of the survey questionnaire was established. Expert validity was sought by consulting a statistician who evaluated the research instrument. Additionally, the over-time and across-items measures of consistency were used to assess the reliability of the questionnaire before conducting the previous research. The reliability was quantified using Cronbach's alpha coefficient, 0.77, while internal consistency yielded Cronbach's alpha level of 0.74.

2.4 Procedure

The study protocol was approved by the University of the Philippines College of Human Kinetics Research Ethics Committee (Protocol no. 2024-0001-F-CHKUPD). In conducting the survey, the main proponent and three research assistants approached potential respondents and extended a polite invitation to participate in the study. Six of all prospective respondents approached to participate in the survey declined. Respondents were asked if they were fans of any league team or player. Individuals who did not qualify were excluded from the survey and were not given the questionnaire. Further, the interview would be terminated once the respondent indicated he/she wished to discontinue. Questionnaires were given to 250 respondents selected by intercept sampling and agreed to participate in the survey. The researchers provided explanations for participants requiring clarification on specific questionnaire items. Show cards were also used as visual aids to help respondents clarify questions in the survey sheet.

2.5 Data Analysis

Data analysis employed descriptive statistics, including frequencies and percentages, alongside inferential statistics, such as Spearman's rho and Chi-square test where appropriate, to determine relationships between variables. Statistical significance was set at $p < .05$. Data normality was determined using the Shapiro-Wilk test. Values were reported as Mean $\pm$ standard deviation. The SPSS software (IBM Statistical Package, Version 29) was used for data analysis. Specifically, the analysis explored possible correlations with other participant demographic factors. The study's variables were cross-tabulated to identify potential associations to achieve this objective.

3.0 Results and Discussion

3.1 Level of League Fanhood and the Importance of a Favorite League Player

As previously mentioned, utilizing Absten's (2011) concept of Sports Fandom, which classifies the extent of audience engagement in any sport across any platform along a continuum from low to high engagement, respondents were asked to rate their level of engagement. This rating was conducted using a five-point Likert-type scale, ranging from 1 (definitely not an avid fan of the league) to 5 (definitely an avid fan of the league). Respondents were classified as 'avid league fans' based on the variable's computed mean value (4.34). Similarly, on a scale of 1 (definitely not important) to 5 (definitely important), respondents considered having a favorite league player as 'important' to be attracted to or interested in the league (Importance of a Favorite League Player) as indicated by the computed mean value (4.41) (Table 1). The computed Spearman's rho coefficient between "level of league manhood" and "the importance of a favorite league player" is $r(249) = 0.191$, $p=.002$, which indicates a weak significant positive correlation between the two variables.

Table 1. Descriptive statistics on the level of fanhood and importance of a favorite league player (level of significance $p<.05$)

Variables	Mean	SD	Spearman's rho	Sig.
Level of fanhood	4.34	0.808		
Importance of a favorite league player	4.41	0.718	.191*	0.002

*Correlation is significant at the 0.01 level (2-tailed)

3.2 Sports Consumption Pattern of a League Fan

Live Audience Frequency

Survey respondents were asked to recall how many times they have attended a live game during the league conference since the current season started. The league matches occur thrice a week – Tuesdays, Thursdays, and Saturdays. First-time live game spectators outnumber those who have watched a live game more than once during the said period. Those who disclosed watching all games of their favorite league team have watched a live game

more than twice but less than five times, and as a second time live game audience account, aggregately, for almost the same number of respondents (Table 2).

The results reveal that most respondents are first-time attendees at live venue league events. This trend suggests that the league's fandom has not yet reached its peak, indicating that while the fan base is still in its nascent stage, it is experiencing rapid growth. This observation supports the potential for further expansion and engagement within the league's audience. However, most of the respondents are repeat live-game spectators, indicating a parallelism to the findings of Johnson et al. (2020) that emphasized that sports fans affirm their identity as fans by engaging in repetitive and supportive behaviors concerning the sport or team they are passionate about.

Table 2. Percentage ranking of live game attendance

Attendance	Frequency	Percentage
First-time spectator	114	45.60
All games of favorite league team	40	16.00
More than twice but less than five times	37	14.80
Second time to watch live game	32	12.80
All league games	12	4.80
Once a week	9	3.60
Twice a week	6	2.40
Total	250	100.00

Note. All-Filipino Conference, from Feb. 20, 2024, as the period of consideration

Favorite League Team

Among the twelve participating teams in the league's conference, "Team A" was identified by 39.60% of the respondents as their favorite team, whereas "Team B" was the choice team of 25.20% of respondents. "Team C" was identified by 10.80% of respondents as their favorite team. "Team D" and "Team E" have approximately the same number of fans among the respondents at 6% and 5.60%, respectively. The other league teams had fewer than ten mentions, except for "Team L," which did not obtain any mentions from the respondents.

Favorite League Player

Each respondent was allowed to identify their top three favorite league players. Seventy-four names came out in the fan mentions. Player 1 from "Team A," the league champion of the conference, obtained the most mentions at 19.22%. All the top 10 favorite league players mentioned by the fans are from the top 5 favorite league teams, particularly Player 2 (Team B) with 10%, Player 3 (Team A) with 9.22%, Player 4 (Team A) 6.41%, Player 5 (Team B) 6.09%, Player 6 (Team A) 3.91%, Player 7 (Team B) 3.44%, Player 8 (Team E) 2.97%, and Player 9 (Team D) and Player 10 (Team C) each with 2.66% of fan mentions.

3.3 Motives for League Fan Engagement

Two of the most frequently cited motivations for why respondents follow the league are "because of the excitement in every game" and "I want to see my favorite league player play." The second reason directly attributes their interest to the 'sports personality,' highlighting that the presence and performance of specific athletes significantly influence their engagement with league games (Table 3).

The findings highlight the central importance of a favorite league player—their quality of play and inherent personal attributes—in determining why fans follow the league. This is exemplified by respondents' choice of "Player 1" as the top favorite league player, who belongs to the league's conference champion team, "Team A." This supports the findings of Reyes et al. (2018), which revealed that fans watch the games primarily because of the players, mainly due to their skill and the excitement they bring. Furthermore, Brandes (2008) found that when the star player participates (or Player 1 in this research), it significantly influences fan interest and game attendance. The findings indicate that the primary motivation for fans following the league is the presence of a favorite player, highlighting the central importance of the player's quality of play and inherent personal attributes. This suggests that individual athletes' performances and characteristics drive fan engagement with the league. As discussed in "Sports, Narrative, and Nation in the Fiction of F. Scott Fitzgerald" (McDonald, 2007), fans are drawn to sports primarily due to the players' performance. McDonald references a study by Cady (1976), emphasizing that communication between fans and players fosters a social interaction sphere. Cady posited that "In connection with [the Big Game], several different games go on simultaneously, inside the stadium and out. Though all focus

on and take symbolic cues from the athletes' game, each plays to its own ends." This insight underscores the multifaceted nature of fan engagement, where the focal point remains the athletes' performance, yet each fan's experience and interaction are uniquely personalized.

Table 3. Percentage ranking of reasons for watching live the league matches (n=250)

Reasons	Frequency	Percentage
Because of the excitement in every game	91	36.40
I want to see my favorite league player play	71	28.40
Because the game inspires me	19	7.60
I want to see my favorite league team	18	7.20
To get tips or techniques about volleyball	17	6.80
Because of the unpredictability of the game	11	4.40
To be updated about the league/volleyball	11	4.40
Others	7	2.80
To have something to discuss with my close friends and relatives	5	2.00

3.4 Attributes of a Favorite League Player

The respondents rated the list of attributes of a favorite league player along a five-point Likert-type scale, from 1 (definitely not important) to 5 (definitely important). Ranked according to the importance given by the respondents, 11 attributes figured highly – passionate, professional, respectful, fair, approachable, humble, exciting, entertaining, winnable, articulate, and humble beginnings. The responses on the first seven identified traits appear clustered around the mean (4.78), indicating that respondents favor a “definitely important” ascription. The traits of entertaining, winnable, articulate, and humble beginnings, with a 4.32 composite mean, were considered “moderately important” by respondents. The respondents were ambivalent towards the traits popular, good looking, and influence of friends or family, receiving a composite mean of 3.53. Being a townmate, having familial connections, and being a schoolmate tend to be considered unimportant by respondents, obtaining a 2.59 cumulative mean.

Table 4. Factor analysis of the traits of a favorite league player

Attributes	Factor 1 Vicarious achievement	Factor 2 Nostalgia	Factor 3 Peer group acceptance
Goodlooking	0.808		
Popular	0.792		
Entertaining	0.714		
Humble beginnings	0.688		
Articulate	0.576		
Exciting	0.555		
Respectful		0.752	
Humble		0.701	
Approachable		0.658	
Passionate		0.633	
Professional		0.505	
Fair		0.453	
Schoolmate			0.827
Familial affinity			0.819
Townmate			0.817
Winnable	0.357		
Influence of friend or family			0.344

Three (3) factors were generated from the factor analysis (Table 4) based on the construct of Funk and James (2002, 2006). These attributes were clustered and named accordingly: vicarious achievement (the need for social prestige, self-esteem, and a sense of empowerment that individuals can receive from their association with a successful team or athlete), nostalgia (the need to experience pleasurable stress or stimulation gained from the drama of the event), and peer group acceptance (the need to interact and socialize with others of like interests to achieve feelings that one is part of a group). Six traits are accounted for by Factor 1 (vicarious achievement). These traits are good-looking, popular, entertaining, humble beginnings, articulate, exciting, and winnable. The traits of respect, humility, approachability, passion, professionalism, and fairness are detailed in Factor 2 (nostalgia). Factor 3 (peer group acceptance) is depicted by the traits of a schoolmate, familial affinity, townmate, and influence of family or friend. The findings underscore that passion, professionalism, respect, fairness, approachability, humility, and

excitement are the most critical attributes of a league player and indicate vicarious achievement and nostalgia as the essential factors that attract or interest them to the league.

3.5 Relationship Among Level of League Fanhood, Importance of a Favorite League Player, and Traits of a Favorite League Player

The components “level of league fanhood,” “importance of a favorite league player,” and “traits of a favorite league player,” including the average of all factors, were then cross-correlated with each other (Table 5). Except for factor 3 (peer group acceptance) in correspondence with the level of league fanhood and the importance of a favorite league player, the generated result revealed that all variables, as mentioned earlier, have significant values, as shown in the respective values from a 2-tailed test. Compared to the correlations across the three trait factors, the cross-correlations of league fanhood, importance of a favorite league player, and traits of a favorite league player registered at a relatively lower level. These variables, however, have a direct relationship with one another, which was established as significant according to the gathered data. The respondents’ responses indicated that factor 3 (peer group acceptance) has no significant relationship with either level of league fanhood or the importance of a favorite league player. Further, data results show that the traits under factor 3 are individually considered opposite the variables “level of league manhood” or “the importance of a favorite league player” and have no significant relationship with either.

Table 5. Cross-correlation of the level of league fanhood, importance of a favorite league player, and trait factors of a favorite league player

Variables		Ave. of All Factors	Factor 1 Vicarious achievement	Factor 2 Nostalgia	Factor 3 Peer group acceptance
Level of League Fanhood	Spearman’s rho Correlation	0.221**	0.284**	0.174**	0.036
	Sig. (2-tailed)	0.000	0.000	0.006	0.574
Importance of Favorite League Player	Spearman’s rho Correlation	0.222**	0.220**	0.209**	0.056
	Sig. (2-tailed)	0.000	0.000	0.001	0.379

**Correlation is significant at the 0.01 level (2-tailed)

Factor 1 (F1), Factor 2 (F2), Factor 3 (F3)

A possible assumption on the apparent lack of significant relationship between factor 3 or its traits and the variables “level of league fanhood” or “the importance of a favorite league player” is that respondents likely have a strong inclination for intrinsic motivation to follow the league or their favorite league player (Wann et al., 2001). It appears that league fans’ autonomy and control orientations concerning sports consumption motivation highly influence their fanhood.

The findings on the identified attributes and factors about favorite league players resonate with Filipino traits that characterize, among others, deep respect, kinship, and camaraderie (Guerrero et al., 2011). This is pointed out by the results where a predominant majority of the responses indicate a high tendency for favorite league player attribute factor “nostalgia” (the need to experience pleasurable stress or stimulation gained from the drama of the event), which is comprised by the traits “respectful,” “humble,” “approachable,” “passionate,” “professional,” and “fair.” Similarly, the attribute factor “vicarious achievement” (the need for social prestige, self-esteem, and a sense of empowerment that individuals can receive from their association with a successful team or athlete) is accounted for by the traits “good looking,” “popular,” “entertaining,” “humble beginnings,” “articulate,” and “exciting” is signified by most respondents. This parallels the study findings of Kim et al. (2020), which showed vicarious achievement as one of the strongest motivations of fans for attending a football game. It may indicate that league fans highly regard shared values even only in the context of surrogate lived experience. The findings illustrate a close correspondence of these cultural qualities of Filipinos, which translates to sports fanhood as indicated by the attribute factors of favorite league players and their most desired traits.

3.6 Differences in Responses on the Traits of a Favorite League Player According to Occupation, Age Range, Gender, and Gender Identity

The demographic attributes—age range, occupation, gender, and gender identity—were cross-referenced with each trait of a favorite league player using the chi-square test of independence. The results revealed that of the 17 traits identified, only five showed a significant relationship with the specific demographic attributes of age, gender, and gender identity. Occupation, as a demographic characteristic, did not show a significant relationship with any of the traits.

The relationships between age range and the traits “schoolmate,” “professional,” and “entertaining” were significant χ^2 (df=28, N=250) =54.65, p =.008, χ^2 (df=7, N=250) =26.17, p <.001, and χ^2 (df=28, N=250) =49.36, p =.002, respectively. The trait “winnable” had a significant relationship with gender, χ^2 (df=4, N=250) =11.54, p =.021, while gender identity was significantly related to the trait “good-looking,” χ^2 (df=8, N=250) =15.64, p =.048. Younger respondents were more likely to prefer league players who exhibit the traits “schoolmate,” “professional,” and “entertaining.” Women tended to prefer league players who were perceived as “winnable.” Respondents who identified as members of the LGBTQI community were more inclined to follow league players because of their good looks.

The results reveal that the traits of league players that influence attracting fans to the league are influenced in varying degrees and extent by the sociodemographic characteristics of the respondents – age, gender, and gender identity. This parallels the findings of Asada et al. (2020), which illustrated that the relative size and homogeneity of sports fan communities can impact potential fans’ support intentions. However, distinctions must be made as to which characteristics affect the valuation of the fans for the league players and their traits. Regarding gender, there is a significant difference in league fanhood or the level of engagement between male and female respondents. Female league fans will likely follow league players based on the winnability trait. This partly reflects the findings of Clarke et al. (2022), who highlighted that the most vital motives of sports fans, both male and female, were physical skill and achievement of the teams they support. Hall (2006) likewise explored the motivations behind game attendance among women, compared them to those of male attendees, and found that targeted management and promotional strategies could significantly influence female attendance. The top two favorite league teams, “Team A” and “Team B,” became champions and first runner-up in the recently concluded league conference. The two teams enjoyed the most media coverage leading to the championship, capitalizing on the regularities of their wins. Consequently, social media presence also further increased the market value of star players, enhancing their market value beyond what is solely determined by their sports performance (Dašić et al., 2021).

Regarding gender identity, data reveals that the league enjoys a significant fan base composed of members of the LGBTQI community. This may be interpreted as the league being an organization that can convey the message of gender inclusivity. Corollary to this, responses from this group indicate that LGBTQI fans, compared to those who declared they are heterosexual, tend to be more particular about physical attributes or looks in their valuation of their favorite league player.

The findings about the age of respondents having an influence on their consideration for the importance of a favorite league player, mainly as elicited by the traits “entertaining,” “professional,” and “schoolmate,” bear interesting parallelism with that of the finding of Tamir (2020). In that study, three variables significantly impact the degree to which young fans transition into serious fanhood. These are (a) social support or the extent to which their friends view their fandom positively; (b) availability of broadcasts or a fan’s access to game broadcasts and other team content; and (c) the team’s professional success, which is also related to the earlier two variables (Tamir, 2019). The trait “schoolmate” may be linked with “a,” “entertaining,” and “b,” while “professional” has a similarity with “c.” In the local setting, the results may also be an interesting avenue to test the hypothesis that younger generation Filipino fans, compared to older counterparts, tend to regard more the aspects of group identity, demeanor, and fun about sports personalities concerning their consumption patterns. The affinity of young fans to group identity may seem paradoxical to the findings in this study as peer group acceptance does not figure decisively as an essential factor. A probable interpretation for this is that younger fans do not necessarily feel threatened by being ostracized, even if they do not share with their group the same appreciation for a favorite league player, particularly of its traits. This partly matches what Appelbaum et al. (2012) mentioned: individuals who report higher levels of sports spectating, such as being a sports fan, tend to have higher levels of extraversion.

3.7 Implications

This study aimed to analyze the rising popularity of volleyball in the Philippines in the context of a local professional league. It explored the possible factors that contribute to the widespread appeal of the league (Torralba, 2020), as indicated by the extensive age range of its audience. A significant aspect identified is the role of star players in establishing an emotional connection between the fans and the league teams. The importance of these star players, as revealed by the high importance of player attributes that resonate with the Filipino psyche,

points to an essential aspect in understanding the case of sports fandom in the country. The study's results underscored the significant relationship between the level of fanhood and the importance of a favorite star player. With the assessment of the engagement of league fans, it has been presented that the star players' ability to connect with the attributes highly valued by fans may broadly impact the overall fan experience.

The implications of the study's findings for sports marketing may merit a measure of consideration. Although relevant studies on sports fanhood provide empirical evidence that star players are the critical drivers for fan engagement (Pifer et al., 2015), it has to be differentiated that fans across different social spheres are not impervious to local cultural influence. Volleyball teams and organizations should focus on developing and promoting star players who connect with the Filipino audience. By understanding the emotional and cultural factors that build fan loyalty, sports marketers can harness the influence of these star players to improve the fan experience, enhance engagement, and ultimately support the sport's growth and sustainability in the locale. This echoes the line of inquiry of Brown-Devlin and Devlin (2020) in their study, which sought to examine which type of people are drawn to sport and its underlying reasons. Furthermore, the emotional component of sports fan consumption motivation should be noticed. Paek et al. (2020) mentioned in their study that emotionally driven sports motivation plays a role in the quality of relationships between fans and teams.

3.8 Strengths and Limitations

The study focused on how fans perceive the league's volleyball players and the league itself. While this study provides added knowledge on the influence of star players in the league fandom, it is important to recognize certain limitations. The findings of this research may not be universally applicable to the entire professional sports landscape of the Philippines, as they will be explicitly based on fans' perceptions about the league and its players. Extrapolating the results to other leagues or different sports should be done cautiously. The reliance on self-reported data may introduce partiality, as there may be occasions where participants may underreport or overreport their behaviors due to social desirability or memory lapses. This study adopts a cross-sectional design, limiting its ability to establish a full representation of the league fandom and the role of league players in it. Longitudinal studies would provide more substantial evidence regarding the findings of the study. Despite these limitations, this research hopes to provide a valuable understanding of the dynamic interplay between sports personalities and fandom by employing fan information and perceptions about the league and its players.

4.0 Conclusion

The findings suggest that respondents' general perception of the importance of a favorite league player and their attribute factors serve as antecedents to their attraction to the league. Further, results indicate that the level of league fanhood and the importance of a favorite league player are mutually associated. The findings also suggest that the favorable valuation assigned by participants to the importance of a favorite league player and their attribute factors, influenced by specific demographic characteristics, plays a crucial role in attracting audiences to the league. The significance of a favorite league player, particularly star players, has a direct and reciprocal relationship with the level of league fanhood in drawing fans to the league.

While participants distinguish between the importance of a favorite league player and the traits that attract audiences to the league, these two aspects are interdependent. The highly rated traits, emphasizing emotions such as vicarious achievement and nostalgia, are necessary for fans to appreciate the players and follow the league. This suggests that star players exert a significant influence in attracting fans, and there exists a culturally driven proclivity toward emotional attachment among fans of the sports league under consideration. The researchers recommend a similar study with a broader scope of participants selected through more rigorous instrumentation. Similarly, a follow-up longitudinal study with a more robust population to obtain more illustrative conclusions on the same subject matter could be an addition to the available body of knowledge. The findings of these recommended studies provide a desirable jump-off point for derivative studies that would be operative and practical in continually evolving the available literature and studies on sports marketing and sports management.

5.0 Contributions of Authors

The authors collaborated in the conception and design of the study. The primary author led the in-situ data gathering and wrote the proposal manuscript for the research paper and the results presentation. The second author performed data analysis, manuscript proofreading, and editing and wrote the conclusion. All authors reviewed and approved the final version of this work.

6.0 Funding

This work received no specific grant from any funding agency.

7.0 Conflict of Interests

All authors declare that they have no conflicts of interest.

8.0 Acknowledgment

The authors would like to thank Assoc. Prof. Dr. Jonathan Cagas, thank you for your assistance in preparing this manuscript.

9.0 References

- Absten, S. (2011). Factors that influence team identification: Sports fandom and the need for affiliation. Masters Theses & Specialist Projects. <https://digitalcommons.wku.edu/theses/1081>
- Agacaioli, L. (2024, May 30). The rise of the Premier Volleyball League has put volleyball on a pedestal in the Philippines. Philippine Daily Inquirer. <https://asianews.network/how-the-rise-of-premier-volleyball-league-has-put-volleyball-on-a-pedestal-in-the-philippines/>
- Antolihao, L. (2012). From baseball colony to basketball republic: post-colonial transition and the making of a national sport in the Philippines. *Sport in Society*, 15(10), 1396–1412. <https://doi.org/10.1080/17430437.2012.744209>
- Appelbaum, G., Cain, M.S., Darling, E.F., Stanton, S.J., Nguyen, M.T., & Mitroff, S.R. (2012). What is the identity of a sports spectator? *Personality and Individual Differences*, 52, 422–427. doi: 10.1016/j.paid.2011.10.048
- Asada, A., Ko, Y.J., & Jang, W. (2020). Effects of relative size and homogeneity of sports fan community on potential fans' support intentions. *Journal of Sport Management*, 34, 103–119. <https://doi.org/10.1123/jsm.2019-0055>
- Blanco, D. V. (2016). The rise of women's volleyball in the Philippines: actors, stakeholders, issues and challenges. *Asia Pacific Journal of Sport and Social Science*, 6(2), 160–176. <https://doi.org/10.1080/21640599.2016.1264667>
- Bodet, G., & Geng, H., Chanavat, N., & Chengcheng, W. (2019). Sport brands' attraction factors and international fans. *Sport, Business and Management*, 10(2), 147–167. <https://doi.org/10.1108/SBM-12-2018-0107>
- Brandes, L., Franck, E., & Nüesch, S. (2008). Local heroes and superstars. *Journal of Sports Economics*, 9, 266–286. <https://doi.org/10.1177/1527002507302026>
- Brown-Devlin, N., & Devlin, M.B. (2020). Winning With Personality: Underscoring Antecedents for College Students' Motives for Team Identification. *Communication & Sport*, 8, 364–388. <https://doi.org/10.1177/2167479519832017>
- Clarke, E., Geurin, A.N., & Burch, L.M. (2022). Team identification, motives, and behavior: a comparative analysis of fans of men's and women's sport. *Managing Sport and Leisure*, 29, 445–468. <https://doi.org/10.1080/23750472.2022.2049455>
- Dašić, D., Ratković, M., & Pavlović, M. (2021). Commercial aspects of personal branding of athletes on social networks. *Marketing*, 52(2), 118–131. <https://doi.org/10.5937/mkng2102118d>
- Funk, D., & James, J. (2006). Consumer loyalty: The meaning of attachments in the development of sport team allegiance. *Journal of Sport Management*, 20, 189–217. <https://doi.org/10.1123/jsm.20.2.189>
- Galily, Y., Pack, S., & Tamir, I. (2024). Editorial: Spectator sport and fan behavior: a sequel. *Frontiers in Psychology*, 15. <https://doi.org/10.3389/fpsyg.2024.1414407>
- Grove, S.J., Dorsch, M., & Hopkins, C.D. (2012). Assessing the longitudinal robustness of spectators' perceptions of the functions of sport: Implications for sport marketers. *Journal of Marketing Theory and Practice*, 20, 23–38. <https://doi.org/10.2307/23243693>
- Guerrero, A., Bayola, R., & Ona, C. (2011). The Filipinos', in J. F. McDermott and N. N. Andrade (eds), *People and Cultures of Hawai'i: The Evolution of Culture and Ethnicity*, 201–219. University of Hawai'i Press. <https://doi.org/10.21313/hawaii/9780824835804.003.0009>
- Hall, J. & O'Mahony, B. (2006). An empirical analysis of gender differences in sports attendance motives. *International Journal of Sports Marketing and Sponsorship*, 7(4), 39–51. <https://doi.org/10.1108/IJSM-07-04-2006-B008>
- Hoegel, D., L., & Torgler, B. (2014). Superstars and disloyal football fans: factors influencing attraction to competition. *Sport, Business and Management*, 4(4), 298–316. <https://doi.org/10.1108/SBM-12-2013-0047>
- Humphreys, B.R., & Ruseski, J.E. (2009). Estimates of the Dimensions of the Sports Market in the US. *International Journal of Sport Finance*, 4, 94–113.
- Johnson, L. M., Chou, W. W., Mastromartino, B., & Zhang, J. J. (2021). Sport Fan Consumption: Contemporary Research and Emerging Trends. In I. Management Association (Ed.), *Research Anthology on Business Strategies, Health Factors, and Ethical Implications in Sports and eSports*, 232–253. <https://doi.org/10.4018/978-1-7998-7707-3.ch014>
- Keaton, S. (2013). Sport team fandom, arousal, and communication: A multimethod comparison of sport team identification with psychological, cognitive, behavioral, affective, and physiological measures [Doctoral dissertation, Louisiana State University]. LSU Scholarly Repository. https://repository.lsu.edu/gradschool_dissertations/2155
- Kho, E. (2018). The next attraction: Examining the mediating dimensions of sports personalities in attracting audience in sport [Unpublished master's thesis]. University of the Philippines.
- Kim, S., Morgan, A., & Assaker, G. (2020). Examining the relationship between sport spectator motivation, involvement, and loyalty: a structural model in the context of Australian Rules football. *Sport in Society*, 24, 1006–1032. <https://doi.org/10.1080/17430437.2020.1720658>
- Koronios, K., Psiloutsikou, M., Kriemadis, A., Zervoulakos, P., & Leivaditi, E. (2016). Sport Sponsorship: The Impact of Sponsor Image on Purchase Intention of Fans, *Journal of Promotion Management*, 22(2): 238–250. <https://doi.org/10.1080/10496491.2016.1121739>
- McDonald, J.L. (2007). Sports, narrative, and nation in the fiction of F. Scott Fitzgerald. *The F. Scott Fitzgerald Review*, 6(1), 180–183. <https://doi.org/10.1111/j.1755-6333.2008.00015.x>
- McDonald, H., Fujak, H., Frawley, S., & Bush, S. (2018). Are sport consumers unique? Consumer behavior within crowded sport markets. *Journal of Sport Management*, 32, 1–14. <https://doi.org/10.1123/jsm.2017-0318>
- Ngan, H., Prendergast, G.P., & Tsang, A.S. (2011). Linking sports sponsorship with purchase intentions: Team performance, stars, and the moderating role of team identification. *European Journal of Marketing*, 45, 551–566. <https://doi.org/10.1108/03090561111111334>
- Ochosa, M. (2015, October 21). The future is bright for Philippine women's volleyball. Rappler. <https://www.rappler.com/sports/volleyball/110062-future-philippine-womens-volleyball/>
- Paek, B., Morse, A., Hutchinson, S., & Lim, C. H. (2020). Examining the relationship for sport motives, relationship quality, and sport consumption intention. *Sport Management Review*, 24, 322–344. <https://doi.org/10.1016/j.smr.2020.04.003>
- Pifer, N., Mak, J., Bae, W.Y., & Zhang, J. (2015). Examining the relationship between star player characteristics and brand equity in professional sport teams. *Marketing Management Journal*, 25, 88–106. <https://www.researchgate.net/publication/314280413>
- Radiamoda, R. B., Chuang, H., & Pernia, R. A. (2023). Celebrity culture, level of education and trust in media institutions: Empirical evidence from the Philippines. *Asian Journal of Comparative Politics*, 0(0). <https://doi.org/10.1177/20578911231207678>
- Reyes, T., de Guzman, T., Viñas, K., & Loquias, S. (2018). Project: "HAIKYU" A Study on Volleyball and Volleyball Leagues. Internal PSL report. Unpublished.
- Robinson, M. & Trail, G. (2005). Relationships among spectator gender, motives, points of attachment, and sport preference. *Journal of Sport Management*, 19, 58–80. <https://doi.org/10.1123/jsm.19.1.58>
- Seo, J. (2022). Relationship between Corporate Image, Brand Awareness, and Purchase Intention according to Sports Sponsorship. *Asia-Pacific Journal of Convergent Research Interchange*, 8(4), 21–34. <https://doi.org/10.47116/apjcri.2022.04.03>
- Shakina, E., Gasparetto, T., & Barajas, A. (2020). Football Fans' Emotions: Uncertainty Against Brand Perception. *Frontiers in Psychology*, 11. <https://doi.org/10.3389/fpsyg.2020.00659>
- Shank, M. & Lyberger, M. (2015). *Sports Marketing A Strategic Perspective* (5th ed.). New York: Routledge. <https://doi.org/10.4324/9781315794082>
- Tamir, I. (2019). I love you kid, but... Intergenerational soccer fandom conflict. *Men and Masculinities*, 22(5), 893–904. <https://doi.org/10.1177/1097184X19859393>
- Tamir, I. (2020). The natural life cycle of sports fans. *Sport in Society*, 25(1), 1–15. <https://doi.org/10.1080/17430437.2020.1793756>
- Torrallba, E. (2020). Sports Ed 3.5: Establishing the value of data-driven sports development programs for universities through machine learning models. 2020 The 8th International Conference on Information Technology, 51–57. <https://doi.org/10.1145/3446999.3447009>
- Wann, D., Ensor, C., & Bilyeu, J. (2001). Intrinsic and extrinsic motives for originally following a sport team and team identification. *Perceptual and Motor Skills*, 93, 451–454. <https://doi.org/10.2466/PMS.93.5.451-454>
- White, C. & Yu, T. (2024). Consumer-company identification: a review and empirical contribution, *Management Research Review*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/MRR-10-2023-0769>
- Wu, S., Tsai, C. & Hung, C. (2012). Toward team or player? How trust, vicarious achievement motive, and identification affect fan loyalty. *Journal of Sport Management*, 26, 177–191. <https://doi.org/10.1123/jsm.26.2.177>

Assessment of Road Safety Through Geometric Design Analysis: The Case of Sagonsongan Diversion Road in Marawi City

Jalaloden M. Motalib*, Nassib U.H. Nasser, Jamshed D. Mangacop, Abdul Warith M. Mamaingco
Department of Civil Engineering, Mindanao State University-Main Campus, Marawi City, Philippines

*Corresponding Author Email: jalalmotalib04@gmail.com

Date received: April 4, 2024

Date revised: July 12, 2024

Date accepted: July 18, 2024

Originality: 98%

Grammarly Score: 99%

Similarity: 2%

Recommended citation:

Motalib, J., Nasser, N., Mangacop, J., Mamaingco, A.W. (2024). Assessment of road safety through geometric design analysis: The case of Sagonsongan diversion road in Marawi City. *Journal of Interdisciplinary Perspectives*, 2(8), 544-550. <https://doi.org/10.69569/jip.2024.0113>

Abstract. This study critically assessed the impact of geometric design on road safety. This assessment was based on a detailed analysis of the case of Sagonsongan Diversion Road in Marawi City, the Philippines. Applying quantitative methods such as a survey using Real-Time Kinematics and software-based road designing using AutoCAD Civil 3D, the study thoroughly analyzed the geometric design elements of the road, such as horizontal alignment, vertical alignment, and superelevation. Thus, the study showed that all geometric features were highly inconsistent with the safety standards. In particular, the high curve radius and slope aspect ratio significantly increases the risk of traffic incidents. The evaluation of two key curve sections has demonstrated that the road's overall geometric design directly affects drivers' ability to keep their cars stable. To eliminate the risk of traffic wretchedness, this study has suggested several corrective measures, including redesigning the road to adjust the geometrical aspects to safe norms, setting accurately calculated speed limits, reinstalling road signs, and conducting continuous safety checks. These measures will help to bring the Sagonsongan Diversion Road's design to the level of established safety standards and decrease possible incidents to the minimum. The study has provided important findings on the relevance of established road designing principles to road safety. This work can be useful for the existing discussion regarding engineering and policy measures that should be considered to enhance road safety, especially in countries with developing economies. This study has also illustrated the importance of continued geometric design assessment in ensuring road safety and adapting the safety requirements to the dynamic needs of road users.

Keywords: Road safety; Geometric design; Curve radius; Slope grade; Marawi City.

1.0 Introduction

Road safety is a vital concern worldwide, impacting policies influencing transportation, urban planning, and engineering practices. The geometric design of the road, including curvature, grade, and alignment, highly impacts vehicular movement and determines the safety and appropriateness of travel being facilitated. Road safety can be evaluated through the Sagonsongan Diversion Road located in Marawi City, Philippines, due to its unique characteristic of showcasing road geometric design and its factors that affect driving conditions. While the road is vital in connecting Marawi City to the respective neighboring municipalities, it has been in the years since its commission faced several traffic incidents, leading to a growing concern about the safety and appropriateness of vehicular motor facilitation. The curvature of the two curve portions on the Sagonsongan Diversion Road has caused concern amid the escalating traffic incidents and emerging transportation congestion. On August 2, 2022, a car crash incident occurred along Sagonsongan Diversion Road, as reported by the Marawi CDRMO, where two passengers were injured though safely brought to the nearest hospital (One Bangsamoro News). One of the

neighbors residing close to the two curve parts also claimed that motorbike crashes have soared significantly, adding that at least five automobile incidents have occurred along those portions. Additionally, some neighbors living close to the Hillside taste of Asia shared that around five to ten cars had been engaged in car crashes and incidents while driving along the two curve portions—also, the testimony of the barangay secretary of Brgy. Sagonsongan, Marawi City, who shared these events, validated these incidents within the first two years since the road was opened for public use.

Over the years, the correlation between road geometric design and traffic accidents has presented extensive research attention. Research suggests that several geometric design elements, such as horizontal curvature, vertical curvature, slope, curve radius, and superelevation, are critical to traffic safety (AASHTO, 2011). This was proven in the study of Alghafli, A., Mohamad, E., & Ahmed, A. Z. (2021), where they indicated that the road's geometric design elements (curves and slopes) play a critical role in road safety. Hence, vehicle crashes occurring on roads with inadequate geometric designs underscore the necessity of comprehensive assessments to check the design's adherence to safety requirements and guidelines set by the DPWH road safety design manual and the AASHTO Policy on the geometric design of highways and streets. The World Health Organization (WHO) recognizes traffic accidents as a major global health concern due to large-scale estimates of fatalities and injuries. According to the actual statistics of fatal injuries from traffic accidents, traffic accidents account for about 1.25 million deaths, 20 to 50 million critical, and 20 to 50 million permanently injured within one year (WHO, 2013). In order to enhance road design, it is imperative to assess and establish the correlation between road accidents and geometric design elements. Thus, these facts are crucial for evaluating the road safety of a roadway in terms of its geometry (Islam et al., 2019). These needs call for a review of design works with the road, and it is particularly relevant in developing countries. Such nations may lack experience or may disregard specific safety and security standards.

With an abrupt change in the number of vehicles and other road users in the irregular land topography of Sagonsongan Diversion Road, it is important to assess its safety measures for its geometric design. Initial findings and reports from local authorities correspond to the increasing number of car incidents, particularly on the curve. This paper aimed to analyze the Sagonsongan Diversion Road's geometric design and assess its curve radius, slope grade, and superelevation compared to design standards. This paper has suggested areas for improvement and presented a significant contribution to the design criteria critical to safety capacity. Additionally, the paper emphasized the need to adapt the design to modern vehicle and transportation technology demands.

2.0 Methodology

2.1 Research Design

The research design used for this study was descriptive and quantitative. The design assessed the geometric design of the road, particularly the horizontal alignment for curve radius, vertical alignment for its slope grade, and superelevation, to determine the extent to which it complies with road safety standards. This study aimed to identify gaps between current road conditions and safety guidelines and understand their implications for road safety.

2.2 Research Locale

This study was performed on the Sagonsongan Diversion Road in Marawi City, Philippines. This road is an essential passage between Marawi City and its neighboring municipalities since it considerably serves regional mobility and economic functions. The study area focused on two curve sections with a recorded high rate of reported traffic collisions, which raised concerns about their geometric design aspect. The actual survey points is shown in Figure 1.

2.3 Research Instrument

This survey aimed to collect data for the analysis of key geometric design properties, including the horizontal alignment (the radius of the curve), vertical alignment (slope grades are the focus), and superelevation (evaluating the road's banking). The data was collected using Real-Time Kinematics (RTK) surveying equipment to obtain high-precision measurements suitable for assessing the road's geometric design parameters. The data points were collected at discrete intervals along the chosen road section to ascertain features that may contribute to road safety,

such as curve radius, slope grade, and superelevation. RTK surveying was instrumental in collecting the required topographical and geometric data.



Figure 1. The actual survey points

2.4 Data Gathering Procedure

The analytical work was undertaken using AutoCAD Civil 3D, a powerful engineering software tool developed for civil engineering design and analysis. This software analyzes road geometric design within the setting of horizontal and vertical alignment and superelevation, using specific road safety standards, such as curve radius in case of horizontal alignment and slope grade in terms of vertical alignment and superelevation. Specifically, this assessment sought to identify compliance and noncompliance with road safety standards. The evaluation of the road's geometric design is considered through established design standards that were sourced from different authoritative bodies. These standards reflect the standard design of the road design, including horizontal curvature, vertical curvature, slope, curve radius, and superelevation, which are the most contributing factors to traffic safety. Other factors were used to determine whether Sagonsongan Diversion Road complies with safety criteria.

3.0 Results and Discussion

3.1 Horizontal Alignment (Curved Radius)

Using the geometric design of the Sagonsongan Diversion Road, the researchers assessed the actual curve radius and slope grade and reveals that there are huge differences from the ideal standard. The data was plotted in AutoCAD Civil 3D is outlined in Figure 2 to provide a horizontal alignment result as shown in Table 1.

Table 1. Result of the horizontal alignment using AutoCAD Civil 3D

P.I No.	P.I. Sta.	Start Sta.	End Sta.	Length	Radius
1	0+069.002	0+039.76	0+089.67	49.92 m	38.18 m
4	0+755.037	0+722.59	0+780.06	57.47 m	49.59 m

The radius of a horizontal curve is a critical factor in road design. As per Table 1, a greater radius indicates a more gradual curve, which allows cars to travel around it more safely and comfortably at higher speeds. Curve 1 has a curve radius of 38.18 meters, less than Curve 2, which is 49.59 meters. This may imply that Curve 2 is less critical than Curve 1, allowing for more efficient vehicle movement. Also, the length of the curve portion is important; long curves have a smoother transition. The curve radius used in designing a specific road segment to obtain a smoother transition should be higher than the design speed, as cited in the DPWH-DGCS. Also, a study by the European Commission indicates that as the radius of horizontal curves increases, the number of accidents decreases.

The data analysis above indicates that the two horizontal curves on the Sagonsongan diversion route have important implications for vehicle safety. Specifically, improving curve two by increasing its radius and reducing sharpness could enhance navigation safety based on this data. To promote road safety overall, designers must consider larger radii carefully in their curve designs. Research has consistently shown that accidents are more likely to occur along horizontal curves than straight sections due to increased demands placed upon drivers and vehicles, which can result in speed and trajectory misjudgments (Charlton, 2007; Hummer et al., 2010). Traffic crash statistics demonstrate a significantly higher average crash rate on horizontal curves than on tangent sections (NHTSA, 2008). These findings underscore the importance of considering length and radius when designing geometrically sound roads such as those found within the Sagonsongan Diversion Route--an approach that should lead not only to improved car user comfort but also reduced congestion through high-speed operation capabilities made possible by these safer design choices.

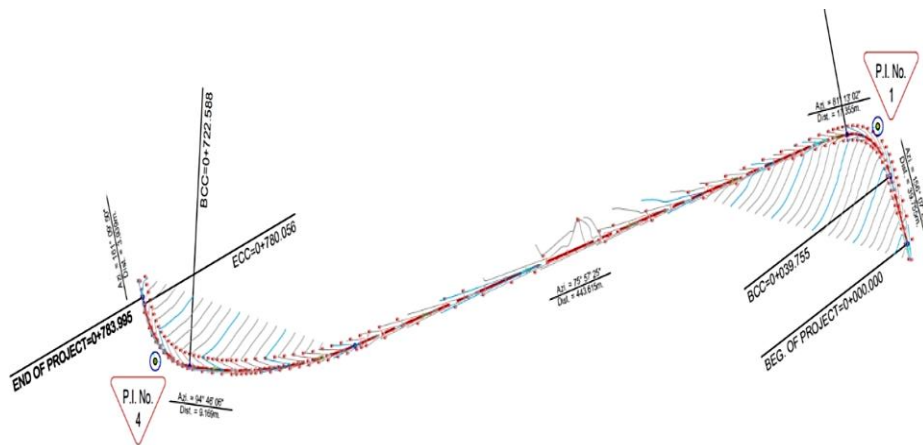


Figure 2. AutoCAD CIVIL 3D projection of horizontal alignment for Sagonsongan diversion road

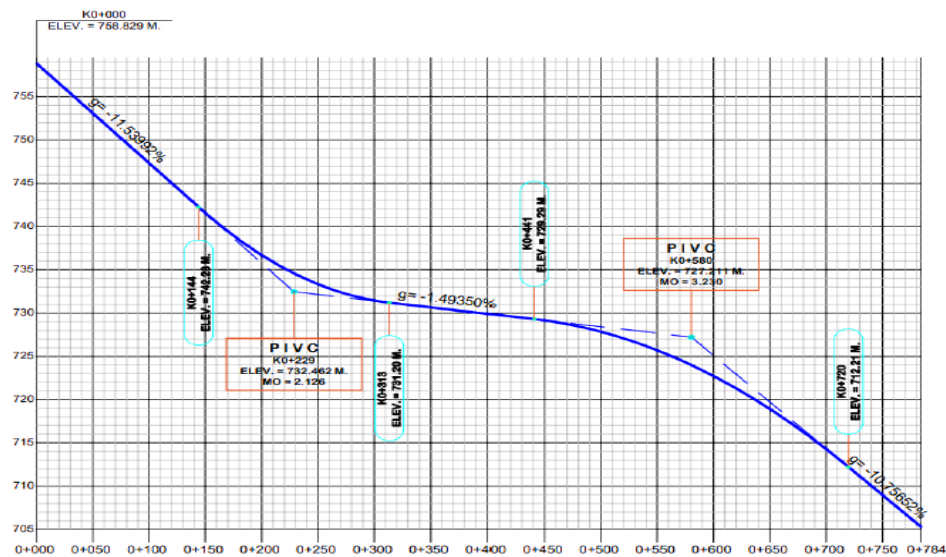


Figure 3. AutoCAD CIVIL 3D projection of vertical alignment for Sagonsongan diversion road

3.2 Vertical Alignment (Slope Grade)

By plotting the data on AutoCAD Civil 3D, as shown in Figure 3, the researchers have arrived at a Vertical Alignment (Slope Grade) result, as shown in Table 2.

Table 2. Result of the vertical alignment using AutoCAD Civil 3D

P.I No.	P.I. Sta.	Start Sta.	End Sta.	Length	Slope Grade
1	0+069.002	0+039.76	0+089.67	49.916m	-11.54%
4	0+755.037	0+722.59	0+780.06	57.468m	-10.76%

The slope of the two-curve segment is displayed in Table 2, where the negative values of the slope grade (-11.54% and -10.76%) denote downward slopes for both curve portions. A road with a negative slope has a declining vertical alignment, which could cause cars to descend more quickly. The DPWH DGCS standards for road design dictate that, because the road was formerly known as Urban Collector Road, the road's vertical alignment fails at a design speed of 60 kph higher. It recommends that passing cars should not travel faster than 50 kph for the safety of other passing cars. In addition, new research has shown how sensitive trucks' operating speeds are to vertical grade on highways; since speeds sharply decrease on improved stretches and rise on downhill segments (Archilla et al., 1996; Morris et al., 2014; Wang et al., 2018).

This implies that the slope grade could be a Hazard to road safety, considering that cars tend to move at high speeds. A steep slope could cause challenges such as decreasing vehicle balance when it leans on one side to prevent overturning, extended braking distances, and a higher probability of rear-end collisions, particularly for large trucks. Additionally, steep slopes may impact how well a road functions properly for the users. It might require cars to work harder to get through the inclining segment of the road, which could hurt efficiency and traffic flow. Steep slopes can also affect vehicle wear and tear and fuel consumption. Thus, it is evident that certain road segments require modifications or enhancements as they do not adhere to the DPWH DGCS design guidelines. The vertical alignment must adhere to the prescribed criteria for road safety and performance. Road authorities may need to take corrective action, such as rebuilding or redesigning the road, considering these findings to bring the slope grades within tolerable bounds. This can entail changing the superelevation, geometry, or other road design features.

3.3 Superelevation

Because the shoulder of the road was covered with grass and other vegetation, the researchers could not arrive at a Superelevation result due to several impediments on the section of Sagonsongan Diversion Road.



Figure 4. The image shows the shoulder covered with grass and other vegetation

Two other opposing impediments were the grass and other vegetation covering the shoulder of the road. These opposing impediments prevented one from being able to measure the borders of the road accurately, and for that reason, one could not accurately determine the road's banking or slope at curves. It also may have been difficult to get accurate data because of the disruption of surveying equipment. It is potentially dangerous to clear the grass

and bushes on the side of the road, especially if the clutter obstructs traffic or should be cleared out in the road's lane. The second opposing impediment exemplifies how not being able to collect superelevation data shows that the sides of the roads need to be taken care of in general. Clear access to the sides of the road is required to accurately measure superelevation because it is evident that the construction of skew superelevation runoff at critical pavement sections, especially in highway rehabilitation and reconstruction projects, has been identified as an effective measure to improve road safety (Aoun et al., 2017).

Superelevation, also known as the transverse slope of a road, is a critical element in road design that enhances road safety by reducing the impact of centrifugal force on vehicles navigating curves. It helps minimize the risk of vehicles overturning or skidding, particularly on curved road sections Pham (2023). Also, superelevation is a fundamental aspect of road design that greatly contributes to road safety by enhancing vehicle stability, reducing the risk of overturning or skidding, and improving driving conditions on curved road sections. Well-designed superelevation facilitates safer navigation of curves and plays a vital role in serious incident prevention and promoting road user safety.

The assessment result on the radius of the two horizontal curves of Sagonsongan Diversion Road proved that it has a direct correlation with the road's superelevation design as far as the safety standard is concerned. The effectiveness of superelevation is more pronounced with decreasing curve radius and increasing superelevation rate, underscoring its importance in controlling vehicle speeds and enhancing safety on curved road sections (Liu et al., 2021).

3.4 Study Recommendations

The differences between the actual and ideal geometric design standards indicate the potential safety risks on Sagonsongan Diversion Road. The sharper curves and steeper slopes indicate an increased chance of incidents, collisions, and crashes, especially for vehicles moving at or above the road's design speed. Such circumstances could contribute to the existing vehicle control challenges, lower braking efficiency, and an elevated risk of skidding and loss of control. To alleviate those safety risks, this study proposed measures that the authority could initiate following actions:

Table 3. Study recommended measures

Adjust Road Geometry	If feasible, the realignment of both curve radius and slope grade to meet the ideal standards as closely as possible can potentially maximize road safety conditions. This action should be the last resort since extensive roadwork would likely be required to regrade the slopes and realign the curves.
Adjust Speed Limit	They are introducing a conspicuous speed limit of 50kph before the curve sections will decrease the chance of incidents due to reduced travel speed. This adjustment may be particularly beneficial when redesigning the geometry is impossible.
Enhance Road Signage	More signage on the road, particularly the warning signs about sharp curves and steep slopes, as well as the advisory speed level notification, would enhance driver education and driving practices.
Continuous Monitoring and Evaluation	Finally, road safety authorities should continually recheck the section of the road for collisions and unfortunate incidents and review the extracted data against the available safety standards.

4.0 Conclusion

The curve radius and slope grade results provide strong evidence for significant safety concerns in the design. This was validated by existing literature highlighting the vital role of geometric design in ensuring road safety. As observed, the curve radius values of 38.180 m and 49.592 m are significantly lower than the recommended standards for safe curve maneuvers by vehicles. For instance, DPWH – DGCS for design speed for urban collector roads and AASHTO (2011) in the policy on geometric design of highways and streets have emphasized that a small curve radius can cause a higher accident rate owing to reduced stability and control of a vehicle while navigating through a curve. This is a major concern in sections designed for 60 kph and above due to the need for the road and vehicle maneuverability to be in close harmony to prevent accidents.

Furthermore, the slope grade observations of -11.53% and -10.75 % exceed the provided standards, affecting vehicle braking and acceleration performances. Fambro, Fitzpatrick, and Koppa (1997), in a study on driver speed behavior about road grade, confirmed that steeper grades often result in inconsistent vehicle speed that increases the likelihood of rear-end collisions and loss of control. Moreover, the risk is exacerbated when other adverse

conditions like wet and slippery pavement exist. The current outcomes are, therefore, consistent with existing literature highlighting the need for the immediate introduction of remedial interventions. The proposed measures, which include accident control and the adjustment of speed limits, are consistent with the findings in existing literature regarding their effectiveness in guaranteeing road user safety. For example, restoring speed limits in critical areas is consistent with the findings of Elvik (2013) in a study that found that a decrease in speed limits results in a sharp reduction in the accident rate. Similarly, the focus on improving signing and service is consistent with Retting, Weinstein, and Solomon's (2003) findings on the effect of improved signs and lane markings on speed and crash rate. Thus, if implemented with stringent monitoring and evaluation, such measures would be significant in aligning Sagonsongan Diversion Road with safety standards. Therefore, the two areas of geometric design observed in this analysis clearly indicate safety threats to road users and must be aligned with the established standards of road safety. Hence, they must be addressed to ensure that they are aligned with safety standards and guarantee safety for all road users in Sagonsongan Diversion Road

Considering the numerous limitations the researchers encounter, future researchers who would like to address a similar topic as this study are advised to conduct a more comprehensive investigation. Additionally, this study may recommend the following to future researchers: (1) propose further research on the curve section of the Sagonsongan diversion road in Marawi City. It should involve the superelevation in connection to the road's horizontal curvature and vertical alignment. These elements are interconnected and affect the road line's viability and necessary safety measures. (2) Another recommendation that the researcher may make is to introduce a 50 kph speed limit. This policy would ensure the safe operation of the two curved sections. Furthermore, one can propose posting speed limits and other traffic signs at least 50 to 150 meters away. Thus, this measure would increase road users' awareness and enable drivers to undertake a safe journey.

5.0 Contributions of Authors

Jalaloden M. Motalib – editing, writing, supervising, data analysis
 Nassib U. H. Nasser – writing or encoding, research assistant
 Jamshed D. Mangacop – Field assistant and recording
 Abdul Warith M. Mamaingco – Field assistant and recording

6.0 Funding

This work received no specific funding from any agency.

7.0 Conflict of Interests

The authors declare no conflicts of interest.

8.0 Acknowledgment

The author(s) acknowledged those who provided intellectual assistance, technical help, and materials for this study.

9.0 References

- Alghafli, A., Mohamad, E., & Ahmed, A. Z. (2021). The effect of geometric road conditions on safety performance of abu dhabi road intersections. *Safety*, 7(4), 73. <https://doi.org/10.3390/safety7040073>
- Aoun, J., Apostoleris, K., Psarianos, B., & Choueiri, E. M. (2017). Operational and safety performance investigation of skew superelevation runoff. *Transportation Research Record: Journal of the Transportation Research Board*, 2638(1), 35–44. <https://doi.org/10.3141/2638-05>
- Archilla, R., & Morrall, J. (1996). Traffic characteristics on two-lane highway downgrades. *Transportation Research Part A: Policy and Practice*, 30(2), 119–133. [https://doi.org/10.1016/0965-8564\(95\)00019-4](https://doi.org/10.1016/0965-8564(95)00019-4)
- Brenac, T. (1996). Safety at curves and road geometry standards in some European countries. *Transportation Research Record*, 1523(1), 99–106. <https://doi.org/10.1177/0361198196152300112>
- Charlton, S.G. (2007). The role of attention in horizontal curves: A comparison of advance warning, delineation, and road marking treatments. *Accident Analysis and Prevention*, 39(5), 873–885. <https://doi.org/10.1016/j.aap.2006.12.007>
- Douglas, W., Joseph, E., & Keith, K. (2000). Operational and safety effects of highway geometrics at the turn of the millennium and beyond. TRB, National Research Council, Washington, D.C.
- Elvik, R. (2013). A before–after study of the effects on safety of environmental speed limits in the city of Oslo, Norway. *Safety Science*, 55, 10–16. <https://doi.org/10.1016/j.ssci.2012.12.007>
- Fambro, D. B., K. Fitzpatrick, and R. J. Koppa. (1997). NCHRP Report 400: Determination of Stopping Sight Distances. Transportation Research Board, National Research Council. Washington, DC.
- Hummer, J.E., Rasdorf, W., Findley, D.J., Zegeer, C.V., & Sundstrom, C.A. (2010). Curve collisions: road and collision characteristics and countermeasures. *Journal of Transportation Safety and Security*, 2(3), 203–220. <http://dx.doi.org/10.1080/19439961003734880>
- Islam, M. H., Law, T. H., Hamid, H., & Azarkerdar, A. (2019). Relationship of accident rates and road geometric design. *IOP Conference Series: Earth and Environmental Science*, 357(1), 012040. <https://doi.org/10.1088/1755-1315/357/1/012040>
- Liu, Y., Zhao, X., Li, J., Bian, Y., & Ma, J. (2021). Effectiveness of warning piles on driving behavior on the curve of low-grade highway. *Transportation Research Record: Journal of the Transportation Research Board*, 2675(8), 76–92. <https://doi.org/10.1177/0361198121996358>
- Morris, C. M., & Donnell, E. T. (2014). Passenger car and truck operating speed models on multilane highways with combinations of horizontal curves and steep grades. *Journal of Transportation Engineering*, 140(11), Article 04014058. [https://doi.org/10.1061/\(ASCE\)TE.1943-5436.0000715](https://doi.org/10.1061/(ASCE)TE.1943-5436.0000715)
- Pham, B. (2023). Case study of superelevation design at an expressway interchange by using adscivil road software. *Iop Conference Series Materials Science and Engineering*, 1289(1), 012058. <https://doi.org/10.1088/1757-899x/1289/1/012058>
- Retting, R.A., Weinstein, H.B., and Solomon, M. (2003). Analysis of motor-vehicle crashes at stop signs in four US cities. *Journal of Safety Research*. 34(5), 485–9. <https://doi.org/10.106/j.jsr.2003.05.001>
- Wang, L., Cheng, J. C., & Zhang, Y. L. (2018). Reliability-Based Specification on Critical Length of Highway Sections with Near-Maximum Grade. *KSCSE Journal of Civil Engineering*, 22(4), 1406–1417. <https://doi.org/10.1007/s12205-017-0832-2>

Academic Resilience in the Face of Internet Challenges: A Narrative Analysis of Tertiary Students' Experiences

Abusailan P. Akmad

Sultan Kudarat State University, Tacurong, Sultan Kudarat, Philippines

Author Email: abusailanakmad@sksu.edu.ph

Date received: June 3, 2024

Date revised: July 13, 2024

Date accepted: July 18, 2024

Originality: 93%

Grammarly Score: 99%

Similarity: 7%

Recommended citation:

Akmad, A. (2024). Academic resilience in the face of internet challenges: A narrative analysis of tertiary students' experiences. *Journal of Interdisciplinary Perspectives*, 2(8), 551-563.
<https://doi.org/10.69569/jip.2024.0255>

Abstract. This qualitative research explored internet connectivity's influence on tertiary students' academic lives in Palimbang, Sultan Kudarat. It highlighted the challenges posed by unstable internet connections, students' resilience in adapting to them, the coping mechanisms employed by the students in accessing unstable internet connections, and the emotional toll it took on them. This paper used narrative analysis to interpret the data set from the participants. Through in-depth interviews, ten (10) participants shared their experiences of grappling with sluggish and unstable internet connections, hindering access to educational resources, and disrupting collaborative learning endeavours. Despite these challenges, students demonstrated resilience, employing strategies like accessing the Internet during off-peak hours and utilizing offline resources. However, these adaptations came with their own set of drawbacks, including sleep deprivation and financial strain. Emotionally, frustration with unreliable internet connectivity was palpable, yet students recognized the Internet's transformative role in their learning journey. The paper underscored the vital importance of reliable Internet infrastructure in rural education, advocating for concerted efforts to bridge the digital divide and ensure equitable access to quality Internet services. Ultimately, it highlighted the resilience of rural students while emphasizing the urgent need to improve the digital infrastructure to support their academic endeavors in the digital age.

Keywords: Higher education; Tertiary students; Academic resilience.

1.0 Introduction

In today's digitally connected world, the Internet has become essential for communication, information access, education, and economic development (Dogniez, 2019). However, while urban areas often enjoy high-speed, reliable internet access, this remains a persistent challenge in rural areas worldwide (IEEE Standards Association, 2021). This digital divide between rural and urban areas highlights disparities in access to technology and internet services, presenting a pressing issue with far-reaching implications for individuals, communities, and society. As a result, tertiary students residing in Palimbang often find themselves disadvantaged, facing slower internet speeds, frequent disruptions, and restricted access to online resources and opportunities. Internet connectivity in Palimbang and rural areas of the Philippines has been a challenge, limiting participation in the digital economy and impacting the access of tertiary students to more robust internet connectivity, which is predominantly concentrated in urban areas. Internet development in the country began in 1994 when Benjamin Tan established a connection with SprintLink at the PLDT Network Center in Makati City. Efforts to improve connectivity in Mindanao include the launch of a submarine cable system by PLDT in Dipolog and upgrades to internet services by Globe Telecommunications, including wireless enhancements through LTE and VoLTE technology (Strover, 2001; DICT, 2015; IECEP, 2018; Mercurio, 2022).

One of the critical functionalities of the Internet is its capacity to disseminate information and enable interactions between individuals using their respective devices (Leiner et al., 2022). However, despite these advancements, specific rural communities face various challenges in accessing stable internet connectivity. This limitation hampers their ability to fully engage and participate in the global community, which has increasingly seen interest in the impact of internet connectivity on students. Several studies have examined the relationship between internet usage and academic performance. Kim and Kim (2016) found that smartphone addiction was associated with lower GPAs and less time spent studying among university students in South Korea. Choi and Lee (2017) also found that internet addiction was associated with lower grades and less time spent studying among high school students in South Korea. The shift to online learning has presented significant hurdles for students, especially those lacking adequate resources, as evidenced by a study in the Philippines. Moreover, students' mental strain, leading to performance hindrances, was noted. Despite these challenges, students have shown resilience, utilizing innovative coping mechanisms to navigate resource scarcities.

Several studies have examined the challenges of online learning and the methods students use to overcome them. Martin et al. (2020) conducted a systematic review that synthesized research on adaptive learning from 2009 to 2018. They discovered fluctuations in the number of published articles on adaptive learning throughout the decade, peaking in 2015. Most of these studies were conducted in Taiwan and the United States higher education institutions, primarily computer science. The research focused on various adaptive strategies and technologies, offering a comprehensive overview of the field during this timeframe. The study identified adaptive strategies by analyzing the adaptive sources in the students' content and instructional models. The students' learning styles varied significantly, primarily focusing on technology. In the Philippines, internet connectivity is significantly different between rural and urban areas. According to a report by the Philippine Statistics Authority (PSA), as of 2020, only 22.2% of households in rural areas have access to the Internet, compared to 43.5% of households in urban areas (PSA, 2020). This digital divide is further exacerbated by the slow and unreliable internet speeds in rural areas, which hinder residents' academic and economic opportunities.

The lack of internet connectivity and the slow internet speed in rural areas also affect the education sector. A study by the Philippine Institute for Development Studies (PIDS) found that students in rural areas face significant challenges in accessing online learning resources due to the lack of internet connectivity and infrastructure (PIDS, 2020). This study has resulted in a significant disparity in educational opportunities between rural and urban areas. The government has recognized the importance of addressing the digital divide in the country. In 2017, the Department of Information and Communications Technology (DICT) launched the Free wifi for All Program to provide free Internet access to public places, including rural areas (DICT, 2019). However, the program's implementation has faced challenges, including the lack of infrastructure and slow internet speed in rural areas.

On the other hand, understanding the narratives of college internet users in Palimbang is crucial for several reasons. Firstly, it sheds light on the experiences of students disproportionately affected by the digital divide. These students may face barriers to education, educational resources, and peer collaboration, potentially limiting their overall well-being as learners. Secondly, researchers, policymakers, and service providers can gain insightful knowledge about these students' particular challenges by exploring the narratives of college internet users in rural areas. This information can then inform the development of targeted interventions, laws, and infrastructure improvements to close the digital divide and promote universal internet access. Furthermore, rural areas are often rich in unique cultural, social, and ecological contexts, and the narratives of internet users within these communities can provide valuable perspectives on the impact of connectivity on local identities, community cohesion, and cultural preservation. Understanding these narratives in the context of academic development is particularly important. By capturing these narratives, researchers can contribute to a broader understanding of how the digital gap affects rural students and its social ramifications.

This study aimed to analyze the narratives of tertiary students regarding internet connectivity in Palimbang. Specifically, it attempts to answer the following questions: (1) What are the specific challenges faced by tertiary students in rural areas when using the Internet? (2) How do tertiary students in Palimbang cope with connectivity issues? (3) What are the broader implications of connectivity on the academic learning of tertiary students?

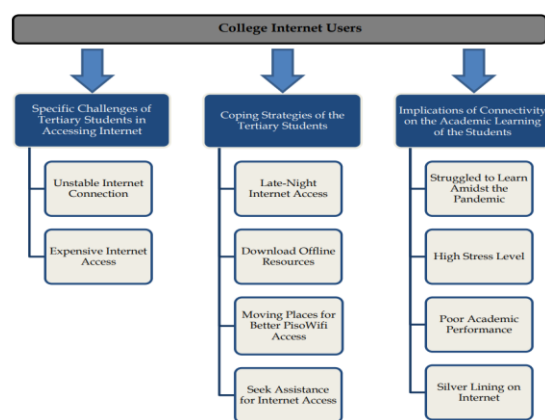


Figure 1. Research framework

2.0 Methodology

2.1 Research Design

A qualitative research methodology was applied in this inquiry. With the guidance of text or images, qualitative research explores significant phenomena and collects participants' in-depth perspectives (Creswell, 2014). It enables understanding experiences and aims to define phenomena through the participants' perspectives. This study design allows for acquiring an exceptional level of knowledge that is challenging to obtain using a closed-question survey. Using a qualitative technique, participants could freely and unrestrictedly share their experiences, opinions, and emotions. Pierce (2008) emphasizes that the qualitative method benefits the researcher by enabling a thorough awareness of the subtleties and complexities of social and human life. The study specifically used narratology, which focuses on narrative structures, analyzing and interpreting the participants' narratives. It also analyzed the underlying principles and conventions of storytelling to uncover the researcher's patterns, themes, and narrative strategies.

2.2 Research Locale

The study was conducted in Palimbang, Sultan Kudarat, Philippines. Covering an area of 484.85 square kilometers (187.20 square miles), Palimbang constitutes approximately 9.04% of the total area of Sultan Kudarat province (PhilAtlas, 2020). According to the 2020 Census, the municipality has a population of 92,828 residents distributed across its forty barangays. This census represents roughly 1.89% of the SOCCSKSARGEN region's population and 10.87% of Sultan Kudarat province's population (PhilAtlas, 2020). The research area of the study included ten tertiary students from Sultan Kudarat State University – the sole state-owned higher educational institution in Palimbang, with a total land area of approximately 30,000 square meters. The university is located in Barangay Poblacion, Palimbang (SKSU Planning Office, 2024).

2.3 Research Participants

The study focused on interviewing college internet users from Palimbang, Sultan Kudarat. Ten rural tertiary students were selected for physical interviews. The inclusion criteria include bonafide students of Sultan Kudarat State University – Palimbang, tertiary students who have access to the Internet using cellular phones or laptops, and students aged 18-25.

2.4 Research Instrument

This study used open-ended questions crafted by the researcher based on the study's research problems. An informed consent form from the ethics committee of Mindanao State University was distributed to the participants to ensure that the ethical guidelines of the research were followed. The same research committee from Mindanao State University – General Santos validated the interview protocol. A permission letter, interview guide questions, pen and paper, camera, and audio/video recorder were utilized to collect comprehensive and reliable data. These tools contributed to the study's objectives and provided valuable insights into the experiences of internet users in Palimbang, Sultan Kudarat.

2.5 Data Gathering Procedure

The study used a structured data collection approach by formulating a questionnaire guide. Ensuring alignment with the research questions, the researcher scrutinized the problem statements. Each problem statement was matched with relevant questions to provide comprehensive coverage and appropriate addressing of all research issues. Communication with potential participants was established in person or virtual, seeking their engagement in the study. Informed consent forms detailing the goals and methods of the study were provided to the participants, who were required to sign the forms to demonstrate their willingness to be involved.

A formal letter was also prepared to request permission to interview the selected participants, documenting the research objectives and ethical considerations with guidance from the research ethics committee. Each participant received an individual copy of this letter. The researcher adjusted his language and communication style to ensure that participants could understand and engage comfortably. Appropriate regional languages, such as Tagalog, were used, and participants responded in Tagalog during the in-depth interviews. After each interview, the researcher expressed gratitude and appreciation to the participants for their time and contribution.

2.6 Ethical Considerations

Adhering to ethical guidelines is essential in all research investigations, with particular significance in qualitative studies due to their extended duration (Arifin, 2018). To ensure ethical considerations, the researcher established clear communication with participants, informing them about the research process, their level of involvement, and access to the relevant research area, fostering trust and confidence (Creswell, 2012). Participants received equitable treatment, along with comprehensive information regarding the research purpose and the use of findings. The researcher avoided asking misleading questions that could misrepresent the research objectives, instead treating participants as partners in collecting vital information and data. Confidentiality and anonymity were prioritized throughout the data processing and report writing stages. The researcher presented both favorable outcomes and contradictory or divergent data, considering the participants' diverse perspectives. Upon completion of the study, the researcher communicated further with participants to discuss and validate the study's findings. Overall, ethical considerations were of utmost importance in qualitative research. The researcher upheld participant confidentiality, provided transparent and equitable treatment, and engaged in open communication to ensure the trust and integrity of the research process.

3.0 Results and Discussion

3.1 Challenges of Tertiary Students in Accessing the Internet

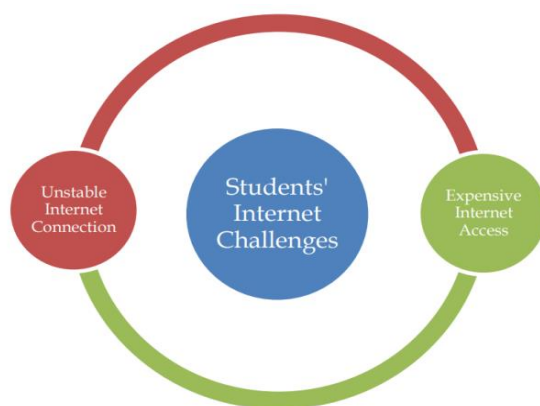


Figure 2. Challenges in accessing the internet

Accessing information poses a common challenge in rural communities, as they receive less information than their urban counterparts, who enjoy immediate access to a wealth of information (Jacobs & Herselman, 2006). Rural communities were excluded from the digital information sphere due to insufficient infrastructure. According to Jacobs and Herselman (2006), access to information plays a vital role in enhancing people's understanding of

various global phenomena. Figure 2 shows tertiary students' challenges in accessing internet connection in the municipality of Palimbang, Sultan Kudarat. During the interview with the participants, their responses were based on the unstable and expensive Internet.

Unstable Internet Connection

Tertiary students in Palimbang encountered numerous difficulties accessing stable internet connectivity, significantly hindering their ability to utilize online resources. Participants had expressed their concerns regarding the inconsistent nature of internet services in Palimbang. As the participants narrated that:

"The Internet in Palimbang, the data signal is not consistent. There are times when it is strong, and there are times when it is weak. The PisoNet, on the other hand, is strong, but the factor that can affect it is when there is a power outage and there is no internet. Without the internet, we wait for it to return because our barangay is far from the cell site, so our data is fragile. We rely on the PisoWifi vending machine." [IDI, P1-BEED]

"The Internet in Palimbang could be more robust; in short, it is weak. When it is like this, you cannot search, especially in the morning, because it is fragile. Sometimes, even if you wake up at one in the night, it is still weak. Moreover, sometimes, it goes on and off." [IDI, P6-BSAB]

Given these experiences of the participants, it was clear that the state of the Internet in Palimbang could have been better due to the challenges posed by unstable data and wifi signals. The strength of the data and Wi-Fi signals varies, sometimes being robust and sometimes feeble, leading to disrupted internet service. The community's remote location from the cell site might contribute to the weak signal. While PisoNet offers a more reliable connection, it was contingent on the availability of electricity, so, during power outages, there was no internet service at all. Hence, many tertiary students depend on the PisoWifi vending machine for their internet needs. These narratives of the students were supported by different studies because there is a contradictory scenario where, despite the need for internet access in rural communities to alleviate their isolation, as pointed out by Salemink (2015) and referenced in Onitsuka (2018), these areas were still trailing in terms of digital connectivity and integration. Specifically, geographical barriers have led to a need for more internet connectivity in rural regions, further distancing them from the advantages of the contemporary world.

Expensive Internet Access

Tertiary students often face the challenge of high internet service costs. Many students had expressed that the weekly cost of internet access was quite steep, especially considering its inconsistent quality. They sometimes find it not worth the expense, mainly when they cannot utilize the service fully due to its instability. Participants share that:

"Currently, just like the price of rice, internet services have also increased. Before, the additional charge was only three pesos, but it has increased to five. Now, if you load 50 pesos, the additional charge is already 10 pesos. So, as self-supporting students, instead of our money going to our allowance, it sometimes goes to internet expenses just for us to research our tasks or the assignments given by our teachers. We are having difficulty with the internet connection because sometimes, when the wifi signal is weak, your time will run out, and you still need to finish your task." [IDI, P8-BSAB]

"It is expensive for me. For example, I load 40 pesos with Wi-Fi and want it to last for one week. However, what happens is that my time on the wifi runs out before I can finish my research. It is frustrating because it is a waste of money and time. I tried using data because it is 4G. I tried loading 100 pesos for seven days or one week of internet access. However, the same thing happens: the signal comes out on the data but does not load. Then I received a text from 8080 saying that my data had run out when I had not even used it or it had expired when I had not even used it. So, it is not worth it for me. Then, one time, I tried because my aunt has PLDT wifi. I tried the PLDT wifi and loaded 1k for one month because I heard it was intense. However, when I got it, it only lasted for two days, so it was a waste because it kept turning off. So, it is expensive, my time is consumed, and it was not worth it." [IDI, P4-BEED]

Several participants echoed the sentiment that subscribing to internet services sometimes feels futile due to the slow connection. They feel their money was wasted on a service they cannot fully utilize. Most of these students were working and were, therefore, acutely aware of the financial burden of maintaining an internet connection,

as they were striving to stay connected and access the Internet for their studies. A recent Li et al. (2023) study discovered that 80% of respondents favored traditional in-person learning compared to online alternatives. Additionally, the research highlighted an inverse relationship between students' contentment and factors such as internet accessibility and expenses. This study implies that the exorbitant costs and inconsistent quality of internet connections can markedly influence students' satisfaction and effectiveness in online educational settings. The challenges faced by tertiary students in Palimbang highlight the intricate issues of ensuring reliable internet access in remote and rural areas. It underscores the urgent need for creative solutions to address the problems associated with unstable internet connections that pose significant challenges to students. This situation also emphasizes the necessity for enhanced internet infrastructure and services in Palimbang. The habit of waking up early or staying up late to use the Internet when the signal is more substantial, and the mismatch between the cost and the availability of the Internet, as many students have voiced that the weekly cost of Internet access was relatively high, particularly given its unreliable quality.

Sometimes, they find it not worth the cost, especially when they cannot fully use the service due to its instability. According to a survey by the SEQuRe Education Movement (2021), approximately 57 to 66 percent of participants stated that their academic performance suffered due to inconsistent internet connectivity. The survey also indicated that extra expenses related to internet usage were a concern for up to 32 percent of teachers and around 70 to 75 percent of students and parents daily. These results underscore the financial strain caused by internet costs for students and their families, compounding their difficulties in accessing online education. The study was a testament to how long students could access an internet connection. Other studies like Li et al. (2023), Castellano (2019), Jacob and Hersekman (2006), Saleminik (2015), and Onitsuka (2018) supported that these challenges exist among individuals who accessed internet connection.

3.2 Coping Mechanisms of Students



Figure 3. Coping mechanism of students in accessing the internet

In Palimbang, students at the tertiary level also grapple with internet problems. The primary difficulties they encountered when accessing the Internet were its instability and the need to stay up late at night for better connectivity. Despite these challenges, tertiary students have developed adaptive strategies to stay connected in an area with internet issues. The substantial disparity in internet access in rural regions was a significant issue faced by numerous countries globally. In response to this problem, rural communities have adopted various adaptive measures to gain internet connectivity (Katsaros et al., 2018). Figure 3 illustrates the various coping mechanisms tertiary students in Palimbang use to access the Internet in an area with inconsistent connectivity. These strategies were not heavily reliant on technology, but rather ingenious methods devised by the students. Based on the participants' narratives and the data collected, the researcher categorized these unique strategies into three main types: accessing the Internet late at night, downloading resources for offline use, going to areas with stronger PisoWifi connections, and seeking assistance for Internet access.

Late-Night Internet Access

According to the participants' narratives, a prevalent strategy and adjustment they implemented as students to secure a dependable internet connection was to wake up in the middle of the night or at dawn. They found that the internet connection was significantly stronger during these hours compared to the daytime. The participants stated thus:

"I woke up early in the morning because that is the time when both data and wifi are vital. So, I woke up early because, by eight o'clock, many people were using it, so the Internet was weak." [IDI, P1-BEED]

"The approach here really requires patience because it is indeed time-consuming. The primary strategy is to access the Internet only at dawn when it is more robust and more stable, and that is what I do - I endure it. In the morning, I also research even if the connection is not strong." [IDI, P6-BSAB]

University students in Palimbang have developed a distinctive method for internet access, which involves staying awake late at night and waking up at dawn. They had noticed that internet connectivity tends to be more robust during these hours. It was a testament to the effects of the unstable internet connectivity in Palimbang that potentially hampers the students' continuous access to reliable Internet. This challenge experienced by the tertiary students not only endangers their well-being but also the learning productivity of the students. A 2023 study revealed that a significant number of medical students, nearly half, use their smartphones for more than two hours at bedtime. This behaviour was linked to poor sleep quality, increased time to fall asleep, difficulty maintaining sleep, and reduced sleep duration (Elsheikh et al., 2023). Another study in 2021 discovered that adolescents who spent more time on screen-based activities like social media, web surfing, watching TV, and gaming had more difficulty falling asleep and slept less during the night (Lund et al., 2021). These studies demonstrate that the strategy and adaptation employed by tertiary students in Palimbang were common to their situation. It underscores a global trend where students adjust their sleep schedules to accommodate internet usage, often at the expense of their sleep quality. This trend was prevalent among the majority of students.

Download Offline Resources

In light of the students' experiences, most of them resort to offline learning. They downloaded educational materials, allowing them to view educational videos and files without an internet connection. Given the unstable internet connectivity in Palimbang, this method has become a prevalent strategy among students to ensure uninterrupted learning. This approach not only circumvents the issue of inconsistent internet access but also allows for flexibility in their study schedule. The participants shared that:

"One technique I use is to download resources while researching. For instance, offline dictionaries like Merriam or Webster, so that in case I lose signal, I still have offline resources where I can get information." [IDI, P6-BSAB]

"I download files in advance because the Internet might disappear again later. So, I advanced my search for beneficial things related to the topic. Sometimes, I go to any website to advance access it; then, I consolidate the ideas I got." [IDI, P4-BEED]

Tertiary students in Palimbang had devised a resourceful approach to overcome the hurdles of unreliable internet access by using offline resources and alternative learning techniques. They procured educational materials and videos for offline consumption, enabling them to sustain their studies despite connectivity constraints. This dependence on erratic internet access presents obstacles in transitioning to the new educational landscape. This issue extends beyond teachers to encompass students as well. Students grapple with unstable internet connectivity considering the pandemic-induced shift to online learning. Koh and Daniel (2022) systematically reviewed teaching and learning strategies during the COVID-19 pandemic, underscoring that challenges stemming from infrastructure limitations and home environments persisted despite students' efforts to access online resources and employ coping mechanisms. A study spearheaded by Celina Sarmiento, a National Research Council of the Philippines (NRCP) member, examined 28,859 Department of Education (DepEd) teachers across different educational levels. The survey disclosed that many teachers, particularly those in rural locales, rely on mobile data, which offers less reliability than fiber optic connections. Through this, they have adapted by devising strategies to perpetuate their learning, such as downloading educational materials for offline utilization (Arayata, 2021).

Moving Places for Better Piso wifi Access

Another adaptation and strategy employed by the participants was that they often moved from one place to another in search of a stronger internet connection. There were barangays in Palimbang that had no stable data connection, so most students used Piso wifi or vending wifi to access the Internet. However, the vending wifi could be unstable, especially in the more remote barangays of the municipality of Palimbang. Hence, some participants moved to those barangays with stronger Internet than other barangays. The participants shared that:

"...I move to...another place because the Internet in Poblacion, Palimbang differs from ours. The towers differ, so you would travel to Poblacion from Kanipaan." [IDI, P6-BSAB]

"Sometimes, when I need a stable internet connection, I go to all the Piso Wi-Fi vending machines with strong Internet." [IDI, P1-BEED]

The tertiary students of Palimbang had devised effective coping strategies to deal with the challenges of inconsistent internet connectivity. All of the participants from the BEED and BSAB programs utilize those strategies. One such strategy was waking up late at night to use the Internet, taking advantage of the less congested network during these hours. Another strategy involves the use of offline resources. Students download resources such as lecture notes, research papers, or educational videos for offline use, reducing their dependency on constant internet access. Lastly, students often go to areas where the PisoWifi signal is more robust. PisoWifi, a popular public wifi service in the Philippines, was available for as little as one peso. Students travel to community centers or other public spaces offering this service to access the Internet. These strategies highlight the students' resilience and adaptability in the face of technological challenges, demonstrating their determination to ensure their education continues uninterrupted despite the hurdles. The coping mechanisms utilized by tertiary students in Palimbang were corroborated by various research findings, both globally and domestically. Studies by Costescu et al. and Mota et al. (2021), publications like *Inquirer* in the same year, along with Caragos (2022), and the work of Koh and Daniel (2021) as well as Arayata (2021), all reinforce the observed coping strategies of these students.

Seek Assistance for Internet Access

In Palimbang, tertiary students often find internet access prohibitive due to financial constraints. A number of these students were employed, but their work situations and pay scales differ significantly from those of working students in urban areas. Given that Palimbang is a rural area, it was not surprising that the basic wage was lower. Some of these students work as fishing assistants or in agricultural fields. Consequently, even a tiny expense for internet access can be a significant burden for them. Some students choose to reach out to those with the means or the resources to access the Internet. The participants understood the importance of internet access for their education and were proactive in finding solutions, even if it meant relying on the generosity of others. The participants shared that:

"I just connected to my uncle's wifi because they have Starlink and are in a remote area. My second choice is to connect with any of my friends who have data; I just hotspot them when I do not have money. We also do it vice versa because they connect to mine when they do not have Internet." [IDI, P4-BEED]

"When I cannot access the Internet, I borrow from my friends who can afford it. Sometimes I borrow a cell phone, and sometimes I borrow money for the Internet." [IDI, P6-BSAB]

In rural areas such as Palimbang, accessing the Internet posed considerable challenges and expenses due to underdeveloped digital infrastructure. Students resorted to various tactics to secure internet connectivity, including piggybacking off relatives' wifi networks, tethering from friends' devices, or frequenting public facilities like libraries offering complimentary internet services. These experiences closely mirrored those recounted by participants, who recounted relying on relatives' Starlink connections, sharing hotspots with friends, or resorting to library visits when other options fell short. Like these participants, working students grappled with the delicate balance of managing limited financial resources against the imperative need for reliable internet access. The Internet has become an indispensable tool in contemporary education. It provided students access to various resources, including online textbooks, academic articles, educational videos, and interactive learning platforms. These resources had the potential to enrich the learning experience, promote student engagement, and facilitate

personalized learning. This was why tertiary students found ways to access the Internet, even if it was expensive. The significance of internet access for students was immense. It served as a gateway to a vast array of information, knowledge, and educational resources, enhancing learning opportunities inside and outside the classroom (Internet Society, 2017). However, the absence of internet access could result in considerable differences in academic results (Asio et al., 2021). As such, ensuring that all students had fair access to the Internet was crucial, which was a pressing issue that needed to be tackled (Microsoft Education, 2022).

3.3 Implications of Internet Connection

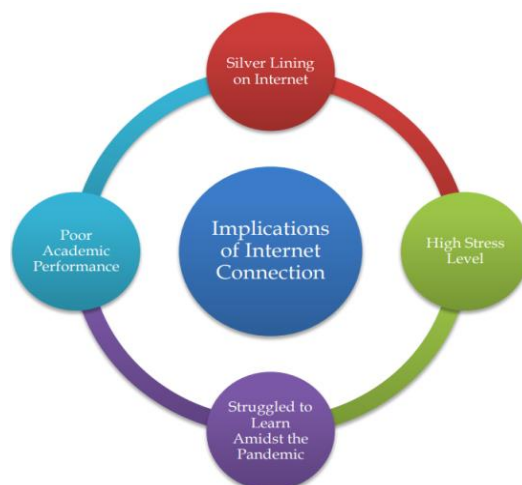


Figure 4. Students implications on internet connection

The advent of the Internet has significantly transformed the educational landscape, and students in Palimbang were no exception. The internet connection in Palimbang plays a crucial role in shaping the students' learning experiences. It is a gateway to a wealth of information and resources, enabling students to broaden their knowledge and skills. Figure 4 illustrates the various implications experienced by students in Palimbang due to their internet access. According to the participants' narratives, there were four primary outcomes related to internet use: difficulties in learning during the pandemic, increased stress levels, declining academic performance, and the positive aspects of internet access.

Struggled to Learn Amidst the Pandemic

According to the experiences shared by the students, the issue of internet connectivity in the municipality of Palimbang was a persistent problem that remained unresolved. This problem was exacerbated during the pandemic when the instability of the internet connection became even more apparent. Due to this issue, the students found accessing and participating in various online platforms challenging. The lack of a stable internet connection significantly impacted their academic performance as classes transitioned to virtual classes due to the pandemic. The situation underscores the critical need for reliable internet infrastructure to support online education. It also highlights the importance of addressing such issues promptly to ensure that students can effectively participate in virtual learning and achieve their academic goals. Thus:

"The Internet in Palimbang is a significant factor, especially during the pandemic when no PisoNet services were available. We had to rely on prepaid wifi, which was relatively weak due to the poor internet connection. What we did was wake up very early in the morning. Sometimes, our teacher would upload the discussion on YouTube, where we would watch it. As for the activities, we will submit them to Google Classroom. Despite the weak Internet, we could still use Google Classroom." [IDI, P1-BEED]

"It is tough... It is difficult because sometimes, due to the weak Internet, you cannot join the class at the scheduled time, so the Internet gets corrupted, and you are marked absent. Moreover, even when you can join, you sometimes cannot understand what the teacher is saying in the video because the Internet is so choppy due to its weakness." [IDI, P6-BSAB]

The global COVID-19 pandemic has profoundly affected the educational journeys of students across the globe, including those pursuing Bachelor of Science in Agribusiness (BSAB) and Bachelor of Elementary Education (BEED) degrees in Palimbang. As a result, students have expressed dissatisfaction with the educational experience during the pandemic, citing insufficient learning and diminished quality due to unstable internet connections. Different studies correlated with the shared experiences of tertiary students of Palimbang. Research conducted by Harvard University and Stanford University has brought attention to the significant repercussions of the pandemic on student learning. Their findings indicate that the impact of the pandemic on learning was not only unprecedented in scale but also disproportionately affected communities with high numbers of low-income and minority students (Kane & Reardon, 2023). The sudden transition to online learning, combined with the difficulties caused by unreliable or inaccessible internet connectivity, has presented substantial obstacles to continuing their education (Dayagbil et al., 2021). Additionally, a study conducted in the Philippines shed light on the difficulties and obstacles faced in maintaining continuity in teaching and learning within public higher education institutions due to the pandemic. This has led to hindrances in students' learning experiences, mainly attributed to slow internet connectivity (Dayagbil et al., 2021).

High-Stress Level

Students had expressed significant concerns regarding the negative impact of unstable internet connectivity on their well-being. The necessity to wake up early for online classes often leads to sleep deprivation and causes high levels of stress to the participants, specifically the BSAB and BEED students. This issue has been underscored in several recent studies. Participants shared that:

"The effect of the feeble signal here in Palimbang is enormous, especially on my health. I am stressed because sometimes I wake up from 1 am to 4 am to go online... to answer activities, and then our class sometimes starts at 7 am, so I am very spaced out... sometimes when I am already in school, I cannot listen anymore because I am sleep-deprived." [IDI, P5-BEED]

"It adds to the stress. If you are stressed academically, you will be stressed with the Internet, and there you have it. You are already stressed and lack sleep because you are waiting for a strong Internet connection." [IDI, P7-BSAB]

This implication on the student's well-being and high-stress level due to slow internet connection significantly tells about how difficult it was to access the Internet in the municipality of Palimbang. Those students needed to experience this because it might impede their learning due to lack of sleep, and this stress might cause other underlying problems in the mental health of the students. A study by Gierdowski (2021) highlighted the implications of poor internet access for students facing Internet and device access during their academic work. The study by Malipot (2022) revealed that 57 to 66 percent of respondents reported that their academic work was affected by intermittent internet signal, with about a quarter of teachers and students experiencing this issue daily. Mosleh (2023), conducted in the UAE, found that the rapid shift to online education due to the COVID-19 quarantine negatively affected students' physical, emotional, and mental health. These studies underscore the significant impact of unstable internet connectivity on students' well-being and academic performance.

Poor Academic Performance

The participants emphasized a link between the quality of internet connectivity in Palimbang and their academic performance. They faced significant challenges due to unstable internet conditions and the necessity to stay awake late at night or early in the morning, which they perceived had negatively impacted their school performance. This was a recurring sentiment among the participants. They shared that:

"Then, in terms of academics, sometimes because of the Internet, grades are dropping like you lack access to... because if I compare it to... to books rather than the Internet, it is just more accessible on the Internet, but unfortunately, it is weak." [IDI, P6-BSAB]

"What happens is it is very stressful because it would be okay if we were only dealing with one subject. For example, I am doing a thesis, and the signal is weak, but other activities are lined up. So what happens is that we can only focus on one activity, and because of that, our scores in other subjects drop. If the Internet was stable, everything would be easy to do, but because it is weak, it is hard to finish what needs to be done." [IDI, P4-BEED]

From the shared experiences and stories of the participants, it was clear that reliable internet access was crucial for students' academic development. However, the unstable internet connection in Palimbang has significantly impacted student performance, leading to subpar academic results. Despite these challenges, the students continued to rely on the Internet for their educational needs, highlighting its importance in today's digital learning environment—these experiences of students aligned with recent research. For instance, a study conducted in Ghana revealed that students with internet access improved academic performance more than those without. However, the study also noted that the mere presence of multiple sources of internet connectivity only guarantees immediate access to some of them (Amponsah et al., 2022). Furthermore, a study conducted by a research team from Rice University, Texas A&M University, and the University of Notre Dame found that increased internet access spending by Texas public schools improved academic performance and led to more disciplinary problems among students (Rice University, 2021).

Silver Lining on the Internet

Despite the participants' perception of the Internet in Palimbang as unreliable and of poor quality, they persist in its use, recognizing its necessity in their academic lives. Despite its instability, they find value in the Internet, underscoring its role as an essential tool for their education. Participants shared that:

"It is helpful because somehow, with the Internet, you can stay updated on what is happening in society and learn information, unlike before when there was no Internet. Even though the Internet in Palimbang is slow, I can still manage to do my requirements, albeit late, but at least I still get to try even though it is slow." [IDI, P4-BEED]

"The internet connection helps students a lot because sometimes we encounter things we do not know outside of school." [IDI, P7-BSAB]

Overall, participants voiced various challenges and outcomes regarding internet access in Palimbang. Despite encountering different disadvantages, such as unstable connectivity, high costs, the search for areas with strong signals, or sacrificing sleep for a better connection, all participants still recognized the benefits of using the Internet despite its unreliable condition. Despite its drawbacks, tertiary students in Palimbang remained grateful for the availability of internet connectivity, which enables them to continue their academic development. All these shared positive experiences of the participants regarding the Internet in Palimbang were supported by different studies highlighting the importance of Internet access for students' academic performance and cognitive development. However, challenges like unstable connectivity and high costs in rural areas like Palimbang can hinder its benefits. Despite these challenges, students recognize the value of internet access for their academic advancement; this was supported by the studies of Correa and Pavez (2016), Dow-Fleisner et al. (2022), Amponsah (2022), Nagam (2023), Pew Internet and American Life Project (2001), and Swansea University and the University of Milan (2020) that the Internet has become indispensable for students, serving as a fundamental resource in their academic endeavors. Most rely on it to navigate their educational journey, accessing a wealth of information and educational materials to support their learning needs.

4.0 Conclusion

The participants disclosed that internet access in Palimbang was a challenge due to its sluggish and inconsistent connection. Each participant vividly articulated their experiences, painting a picture of the erratic nature of the internet service in Palimbang. They shared stories of struggling with frequent disconnections, slow loading times, and the inability to rely on the Internet for consistent information access. This unreliable Internet has significantly impacted their online activities, from basic web browsing to more data-intensive tasks. The participants also revealed the profound impact of internet connectivity on the academic performance and emotional well-being of tertiary students in Palimbang. These issues were particularly pronounced during the pandemic when education shifted to a virtual mode. Despite the challenges, the students demonstrated resilience and adaptability, developing various strategies to cope with the unstable Internet. These included accessing the Internet during off-peak hours, downloading offline resources, and even going to areas with better connectivity. These strategies, however, were not without their drawbacks. The need to stay up late led to sleep deprivation, affecting their attentiveness in class, while the high cost of internet access added financial strain. The study also highlights the

emotional toll of these challenges. Frustration with the unstable Internet led to anger, with some students even throwing their phones. Despite this, the students acknowledged the Internet's transformative role in their learning process. They recognized its value in providing access to information and educational trends, viewing it as a crucial companion in their academic journey. It was also indicated that poor internet connectivity had profound implications on their academic performance, particularly during the pandemic when education shifted to virtual mode. Many students need help attending online classes and accessing necessary learning resources due to the unstable Internet. These unstable occurrences resulted in poor academic performance, with many students receiving low scores on their activities and overall grades. The lack of sleep from accessing the Internet at dawn and the slow connection that hindered timely information search further exacerbated the situation. The internet issues also caused emotional stress among the students, with some expressing anger and frustration to the point of throwing their phones. Despite these challenges, the students still found value in the Internet. They recognized its role in providing access to information and educational trends and considered it a crucial companion in their academic journey.

With this, recommendations were formulated based on the findings: (1) The national government, through the Department of Information and Communications Technology (DICT), should prioritize developing and upgrading internet infrastructure in Palimbang. This could involve the installation of more telco towers and the introduction of fiber-optic broadband services. (2) The Local Government Unit (LGU) of Palimbang could forge partnerships with Internet Service Providers (ISPs) to provide affordable and reliable Internet packages for students. It is recommended to negotiate with ISPs like Globe Telecommunication and SMART Telecommunication to improve their services in Palimbang and erect additional cellular towers to accommodate the entire population of Palimbang, (3) The LGU and SKSU should establish community internet centers equipped with high-speed Internet. These centers would provide students with a reliable place to access the Internet for their academic needs. They may purchase Starlink units since it would not need telco towers as it is a satellite-based internet, and (4) Telecommunication companies such as SMART, GLOBE, and DITO should focus on setting up more towers to improve internet speed and serve a more significant portion of Palimbang's population. Similarly, PLDT should consider expanding its fiber optic internet services to Palimbang. This would enable the broader community, including students and other Palimbang institutions, to access a more robust wifi connection.

5.0 Contributions of Author

The author exclusively conceptualized the outcomes presented in each section of this study, including everything from the data collection to the analysis of the results.

6.0 Funding

This study did not receive any specific grants from funding agencies. The researcher independently financed the work.

7.0 Conflict of Interests

The author of this paper asserts that there are no conflicts of interest concerning the publication of this work.

8.0 Acknowledgment

The researcher wishes to express profound gratitude to all who have made this study possible. Their support, generosity, patience, and invaluable assistance have been instrumental in completing this research. First and foremost, the researcher would like to express gratitude to Almighty Allah (swt) for providing the courage, wisdom, and determination to pursue this study, guiding him throughout his journey, and blessing him with a supportive family. The researcher extends his most profound thanks to the study's participants, the tertiary students of SKSU-Palimbang, whose time and honesty were crucial to the conduct of the study. Their willingness to share their experiences with internet connectivity in Palimbang formed the basis of this research, which served as the fundamentals of the research.

9.0 References

- Amponsah, K. D., Aboagye, G. K., Narh-Kert, M., Commey-Mintah, P., & Boateng, F. K. (2022). The impact of internet usage on students' success in selected senior high schools in cape coast metropolis, ghana. *European Journal of Educational Sciences*, 9(2), 1–18. <https://doi.org/10.19044/ejes.v9no2a1>
- Arifin, S. R. (2018). Ethical Considerations in Qualitative Study. *International Journal of Care Scholars*, 1(2), 4–5. <https://doi.org/10.31436/ijcs.v1i2.82>
- Asio, J. M. R., Gadia, E., Abarintos, E., Paguio, D., and Balce, M. . (2021). Internet Connection and Learning Device Availability of College Students: Basis for Institutionalizing Flexible Learning in the New Normal. *Studies in Humanities and Education*, 2(1), 56–69. <https://doi.org/10.48185/she.v2i1.224>
- Caragos, K. D. (2022). Challenges and coping strategies of the senior high school students during online modality. *Psychology and Education Journal*, 6(1). <https://doi.org/10.1080/15325024.20>
- Castillano, N. B. (2019). Challenges of Implementing an E-learning Platform in an Internet Struggling Province in the Philippines. *Indian Journal of Science and Technology*, 12(10), 1–4. <https://doi.org/10.17485/ijst/2019/v12i10/137594>
- Choi, S. W., & Lee, J. Y. (2017). The impact of internet addiction on academic achievement: Evidence from a meta-analysis. *Children and Youth Services Review*, 79, 107–116. <https://doi.org/10.1016/j.chbr.2021.100234>
- Costescu, C., Iulia C., Adrian R., Attila K., and Jozsef K. (2021). Cognitive Patterns and Coping Mechanisms in the Context of Internet Use. *Applied Sciences*, 11(3), 1302–1306. <https://doi.org/10.3390/app11031302>
- Dayagbil F. T., Palompon D. R., Garcia L. L., and Olvido M. M. J. (2021). Teaching and Learning Continuity Amid and Beyond the Pandemic. *Frontier Education*, 6(0), 678–692. <https://doi.org/10.3389/educ.2021.678692>

- DICT. (2015). History of Internet in the Philippines – Department of Information and Communications Technology. Department of Information and Communications Technology. <https://dict.gov.ph/the-history-of-internet-in-the-philippines/>
- DICT. (2019). Free wifi for All Programs. Department of Information and Communications Technology. <https://dict.gov.ph/free-wifi-for-all-program/>
- Dow-Fleisner, S. J., Seaton, C. L., Li, E., Plamondon, K., Oelke, N., Kurtz, D., Jones, C., Currie, L. M., Pesut, B., Hasan, K., & Rush, K. L. (2022). Internet access is a necessity: A latent class analysis of COVID-19 related challenges and the role of technology use among rural community residents. *BMC Public Health*, 22(1), 845. <https://doi.org/10.1186/s12889-022-13254-1>
- Elsheikh, A. A., Elsharkawy, S. A. & Ahmed, D. S. (2023). Impact of smartphone use at bedtime on sleep quality and academic activities among medical students at Al-Azhar University at Cairo. *Journal of Public Health*, 0(0), 3–8. <https://doi.org/10.1007/s10389-023-01964-8>
- Gierdowski, D. C. (2021). Student Experiences with Connectivity and Technology in the Pandemic1. *EDUCAUSE*. <https://www.educause.edu/ecar/research-publications/2021/student-experiences-with-connectivity-and-technology-in-the-pandemic/introduction-and-key-findings>
- IECEP. (2018). Remembering the First Internet Connection in the Philippines. Institute of Electronics Engineers in the Philippines, Inc. <https://iecepnegor.org/remembering-the-first-internet-connection-in-the-philippines/>
- IEEE Standards Association. (2021). Solutions for Providing Internet Access to Rural Areas IEEE explores employing ICT, regulations, and standards. IEEE Standards Association. <https://spectrum.ieee.org/providing-internet-to-rural-areas#toggle-gdpr>
- Jacobs, S.J. & M.E. Herselman (2006). Information Access for Development: A Case Study at a Rural Community Centre in South Africa. *Informing Science and Information Technology*, 3(0), 296-306. <https://doi.org/10.28945/892>
- Jose, J., Juan, K. L. M., Tabiliran, J., Yap, F., Gatchalian, J., Baluyot, M. K., Torrero, K., Blanco, J., & Tus, J. (2023). Struggle Is Real: The Experiences and Challenges Faced by Filipino Tertiary Students on Lack of Gadgets Amidst Online Learning. *Psychology and Education: A Multidisciplinary Journal*, 7(0), 174-181. <https://doi.org/10.5281/zenodo.7653016>
- Kane, T., & Reardon, S. (2023). New Data Show How the Pandemic Affected Learning Across Whole Communities. Harvard Graduate School of Education News. <https://www.gse.harvard.edu/ideas/news/23/05/new-data-show-how-pandemic-affected-learning-across-whole-communities>
- Katsaros, K., Klischewski, M., & Mehrmann, C. (2018). Promoting Digital Inclusion in Rural Communities: Strategies and Best Practices. *Journal of Rural Studies*, 59(0), 165-175.
- Kim, H., & Kim, G. (2016). The effects of smartphone addiction on academic performance among university students. *Journal of Behavioral Addictions*, 5(4), 604-609. <https://doi.org/10.1016/j.chbr.2016.54609>
- Koh, J.H.L., Daniel, B.K. (2022). Shifting online during COVID-19: A systematic review of teaching and learning strategies and their outcomes. *Int J Educ Technol High Educ*, 19(56), 5-6. <https://doi.org/10.1186/s41239-022-00361-7>
- LaMorte, W. W. (2022). Diffusion of Innovation Theory. Boston University School of Public Health <https://sphweb.bumc.bu.edu/otlt/mphmodules/sb/behavioralchange/theories/behavioralchange/theories4.html>
- Leiner, B.M., Cerf, V.G., Clark, D.D., and Kahn, R.E. (2022). Brief History of the Internet. Internet Society. <https://www.internetsociety.org/wp-content/uploads/2017/09/ISOC-History-of-the-Internet-1997.pdf>
- Li, X., Odhiambo, F. A., & Ocansey, D. K. W. (2023). The effect of students' online learning experience on their satisfaction during the COVID-19 pandemic: The mediating role of preference. *Frontiers in Psychology*, 14(1), 1095073. <https://doi.org/10.3389/fpsyg.2023.1095073>
- Lund, L., Sølvhøj, I.N., Danielsen, D. et al. (2021). Electronic media use and sleep in children and adolescents in Western countries: a systematic review. *BMC Public Health*, 21(1598), 7-12. <https://doi.org/10.1186/s12889-021-11640-9>
- Malipot-Hernando, M. (2022). A strong internet connection is needed for education – DepEd. Manila Bulletin. <https://mb.com.ph/2021/03/20/strong-internet-connection-needed-for-education-deped/>
- Martin, F., Chen, Y., Moore, R.L., & Westine, C.D. (2020). A systematic review of adaptive learning research designs, context, strategies, and technologies from 2009 to 2018. *Education Technology Research and Development*, 68(4), 1903-1929. <https://doi.org/10.1007/s11423-020-09793-2>
- Mercurio, R. (2022). Globe to power up internet services in Visayas, Mindanao. Philippine Star News. <https://www.philstar.com/business/2020/11/29/2060103/globe-power-internet-services-visayas-mindanao>
- Mosleh, S. M., Shudifat, R. M., Dalky, H. F., Almalik, M. M., & Alnajjar, M. K. (2022). Mental health, learning behaviour and perceived fatigue among university students during the COVID-19 outbreak: A cross-sectional multicentric study in the UAE. *BMC Psychology*, 10(1), 47. <https://doi.org/10.1186/s40359-022-00758-z>
- Mota, D. C. B., Silva, Y. V. D., Costa, T. A. F., Aguiar, M. H. D. C., Marques, M. E. M., & Monaquezi, R. M. (2021). Mental health and internet use by university students: coping strategies in the context of COVID-19. *Ciência & saúde coletiva*, 26(6), 2159–2170. <https://doi.org/10.1590/1413-81232021266.44142020>
- Nagam, V.M. (2023). Internet use, users, and cognition: on the cognitive relationships between Internet-based technology and Internet users. *BMC Psychol*, 11(82), 5-6. <https://doi.org/10.1186/s40359-023-01041-5>
- Onitsuka, K., & Hidayat, A., & Huang, W. (2018). Challenges for the next level of digital divide in rural Indonesian communities. *The Electronic Journal of Information Systems in Developing Countries*, 84(1), 120-231. <https://doi.org/10.1002/isd2.12021>
- Philippine Institute for Development Studies. (2020). COVID-19 and the Philippine Education Sector: Impact, Responses, and Recommendations. Philippine Institute for Development Studies. <https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidsdps2020-16.pdf>
- Philippine Statistics Authority. (2020). Highlights of the 2020 Household Survey on Domestic Visitors (HSDV). Philippine Statistics Authority. <https://psa.gov.ph/household-statistics/highlights-2020-household-survey-domestic-visitors-hsdv>
- Rice University. (2021). Internet-access spending improves academic outcomes, according to a study of Texas public schools. Science Daily. www.sciencedaily.com/releases/2021/03/210315160711.htm
- Salemink, K. (2015). Rural development in the digital age: A systematic literature review on unequal ICT availability, adoption, and use in rural areas. *Journal of Rural Studies*, 54(1), 360-371. <https://doi.org/10.1016/j.jrurstud.2015.09.001>
- SEQuRe Education Movement. (2021). Unreliable internet signal is the 'top problem' of teachers and students under distance learning - survey. Manila Bulletin. <https://mb.com.ph/2021/07/15/unreliable-internet-signal-is-top-problem-of-teachers-students-under-distance-learning-survey/>
- Strover, S. (2021). Rural Internet connectivity, Telecommunications Policy. Rural Policy Research Inst, ED 447(983), 13–99. https://www.academia.edu/76331319/Rural_internet_connectivity
- Thomas, D. R. (2006). A General Inductive Approach for Analyzing Qualitative Evaluation Data. *American Journal of Evaluation*, 27(2), 9-16. <https://doi.org/10.1177/1098214005283748>
- Van Dijk, Jan A.G.M. (2017). Digital Divide: Impact of Access. *The International Encyclopedia of Media Effects*. <https://doi.org/10.1002/9781118783764.wbieme0043>

Towards a Communist Armed Conflict Indigenous Settlement Framework: Revisiting Vietnam, Singapore, and Taiwan Experience

Jose Mari C. Jasmin

Philippine Christian University, Manila, Philippines
Philippine National Police Academy, Cavite, Philippines

Author Email: jmcjasmin@pcu.edu.ph

Date received: June 9, 2024

Date revised: July 13, 2024

Date accepted: July 19, 2024

Originality: 94%

Grammarly Score: 99%

Similarity: 6%

Recommended citation:

Jasmin, J.M. (2024). Towards a communist armed conflict Indigenous settlement framework: Revisiting Vietnam, Singapore, and Taiwan Experience. *Journal of Interdisciplinary Perspectives*, 2(8), 564-572.
<https://doi.org/10.69569/jip.2024.0329>

Abstract. Armed conflicts between governments and indigenous inhabitants in Singapore, Taiwan, and Vietnam have deep roots in historical tensions and the marginalization of minority groups. This qualitative study explores these factors and evaluates government strategies for conflict resolution, focusing on disparities in settlement, education, employment, and community engagement. Government actions such as military operations, peacebuilding, and comprehensive programs were analyzed. Singapore's strategies, including community engagement and socio-economic development, fostered stability and inclusivity. Taiwan's reconciliation efforts, including apologies and democratization, reduced conflict and promoted indigenous rights. Vietnam's initiatives for ethnic minority development underscored its commitment to peace through inclusive approaches. Historical contexts in these countries, marked by ethnic tensions, colonial legacies, and ideological divisions, shaped significant violence and social divisions, necessitating robust security measures and reconciliation efforts. Lessons learned emphasize diplomacy, international cooperation, and socio-economic integration for lasting peace. Governments must prioritize dialogue, inclusive policies, and sustainable development supported by international partnerships. Effective conflict resolution integrates socioeconomic development and reconciliation efforts, crucial for building resilient societies and fostering peace among Indigenous populations.

Keywords: Armed conflicts; Indigenous inhabitants; Government strategies; Socio-economic development; Reconciliation efforts; Conflict resolution.

1.0 Introduction

Armed conflicts between governments and indigenous inhabitants in countries like Singapore, Taiwan, and Vietnam stem from historical tensions and the marginalization of minority groups. In Singapore, historical narratives and educational curricula have marginalized the Malay indigenous community, reflecting deep-seated ethnic hostilities. Despite some progress, Malay contributions remain overshadowed by dominant ethnic Chinese narratives. Singapore's strategies for fostering social cohesion and national identity include community engagement, military reforms, and national service to build an inclusive society (Allen & Louis, 1993; Sim, 2018).

In Taiwan, indigenous peoples, comprising about 2.38% of the population, face economic and social inequalities, cultural assimilation, and language extinction due to historical government policies. Efforts for political self-determination, cultural revival, and economic development are ongoing, supported by initiatives like the Austronesian Cultural Festival (Myers & Lin, 2007; Tsai, 2016). Taiwan's reconciliation efforts, including formal

apologies and a transition to democracy, have reduced armed conflict by promoting indigenous rights and facilitating political reconciliation (Myers & Lin, 2007).

Vietnam's Central Highlands, home to the Montagnards, have seen conflict due to state-sponsored colonization and ethnic Vietnamese settlement. Government policies focus on economic development and integration, but ethnic tensions persist. Vietnam's recent foreign policy emphasizes peacebuilding and conflict prevention, enhancing its international peacekeeping role (Nguyen, 2015; Turse, 2013).

These experiences underscore the importance of inclusive approaches, socio-economic development, and cultural recognition in conflict resolution. Effective strategies integrate reconciliation efforts and comprehensive government programs, promoting long-term peace and stability (Bayly & Harper, 2005; Harbom et al., 2006). Collectively, the experiences of Singapore, Taiwan, and Vietnam offer insights into mitigating armed conflicts and fostering harmonious relationships, emphasizing inclusivity and participation as crucial elements in sustainable peacebuilding (Maynard, 2019; Petterson & Wallenstein, 2015).

2.0 Methodology

This study adopted a qualitative and descriptive method to determine the factors resulting in armed conflict between the indigenous inhabitants and the governments in selected Asian countries such as Singapore, Taiwan, and Vietnam, as well as the best practices of the government. The same method is adopted to determine government actions such as military operations, negotiations, peacebuilding, and conflict resolution among conflicting parties. This approach involved detailed case studies, interviews, and document analysis to gather comprehensive data on these conflicts' historical, social, and political contexts.

Data gathering was done by searching reliable data information such as documentaries and the likes posted by various institutions and individuals who have documented the armed conflict and indigenous settlements in the countries under study. The online research focused on reliable documentaries and institutional online publications. This modality is believed to be a more reliable and economical way of gathering necessary data-information about armed conflict and indigenous settlement in the countries under study.

3.0 Results and Discussion

3.1. Extents of Armed Conflict

Revisiting Singapore Conflict

The fall of Singapore to the Japanese in 1942 marked a tragic period with massive loss of life and harsh occupation (Allen et al., 1993). The segregated colonial society exacerbated tensions that continued to haunt the nation post-World War II (Bayly et al., 2005). However, the recognition of these issues by Singapore's early leaders, especially in addressing racial and religious fault lines, laid the foundation for a more cohesive, meritocratic, multiracial society. The painful separation from Malaysia underscored the necessity of equality and unity for Singapore's progress (Lee, 2000).

Revisiting Taiwan Conflict

According to Myers and Lin (2007), the White Terror in Taiwan represents a dark era of political repression under martial law, with intellectuals and dissenters suffering greatly. The long-lasting impact of this period eventually led to significant democratization efforts and public acknowledgment of past injustices (Lee, 1995). Taiwan's journey from repression to reconciliation highlights the importance of transparency, accountability, and the commitment to human rights in forging a resilient democracy (Ma, 2008).

Revisiting Vietnam Conflict

The Vietnam Conflict, marked by extensive civilian casualties, underscores the brutality of war and the complexities of guerrilla warfare (Lewy, 1978). The actions of North Vietnamese, South Vietnamese, and American forces resulted in profound suffering for countless civilians (Rummel, 1997). The conflict's legacy, including atrocities like the My Lai Massacre and the indiscriminate nature of bombings, serves as a stark reminder of the human cost of war and the imperative for ethical conduct and accountability in military operations (Greiner, 2009; Turse, 2013). According to the Information Bureau of the Provisional Revolutionary Government of South Vietnam (PRG), a shadow government formed by North Vietnam in 1969, between April 1968 and the end of 1970,

American ground troops killed about 6,500 civilians during twenty-one operations either on their own or alongside their allies. Nick Turse, in his 2013 book *Kill Anything that Moves*, argues that a relentless drive toward higher body counts, a widespread use of free-fire zones, rules of engagement where civilians who ran from soldiers or helicopters could be viewed as VC, and a widespread disdain for Vietnamese civilians led to massive civilian casualties and endemic war crimes inflicted by U.S. troops. One example cited by Turse is Operation Speedy Express, an operation by the 9th Infantry Division, which was described by John Paul Vann as, in effect, "many My Lais". The war's impact on Vietnamese society continues to be felt, influencing both historical memory and contemporary geopolitics (Vietnam War Crimes Working Group, 1971).

3.2 Factors Resulting to Armed Conflict

Revisiting Singapore

The exclusionary history of Singapore's independence struggle reveals deep-seated ethnic tensions that continue to shape societal narratives today. The journey toward inclusivity in historical narratives reflects a broader effort to acknowledge and rectify past injustices, fostering a more cohesive national identity. As Sim (2018) argues, Singapore's evolving historiography is a testament to the ongoing dialogue and reconciliation processes to heal historical wounds and promote social cohesion.

Revisiting Taiwan

Taiwan's historical conflicts, rooted in colonialism and land disputes, have left lasting scars on indigenous communities. However, efforts towards cultural revival and political self-determination signal a resilient pursuit of rights and recognition. Tsai's (2016) analysis underscores the significance of indigenous movements in Taiwan, highlighting the ongoing struggle for autonomy and preserving cultural heritage amid broader socio-political changes.

Revisiting Vietnam

Vietnam's tumultuous history, marked by foreign occupation and internal strife, underscores the profound human costs of war. The enduring impact on Highlanders highlights the complex legacies of conflict and the ongoing struggles for autonomy and justice. Nguyen (2015) provides valuable insights into the challenges faced by Vietnam's Highlanders, emphasizing the need for continued efforts to address historical injustices and support marginalized communities in their quest for recognition and rights.

3.3. Government Action in Combatting Armed Conflicts

Singapore

Singapore's approach to combating armed conflict and insurgency has been multifaceted, combining security measures with social policies to foster unity and harmony. The Maintenance of Religious Harmony Act (MHRA) and the Ethnic Integration Policy (EIP) are examples of legislative initiatives designed to promote social cohesion (Tan, 2017). By addressing both security threats and societal divisions, Singapore has demonstrated a comprehensive strategy for maintaining peace and stability. Moreover, Singapore's governance model, characterized by pragmatic policies and proactive community engagement, has contributed significantly to its success in managing internal security challenges (Heng, 2019). The government's emphasis on inclusivity, cultural heritage preservation, and interfaith dialogue has helped build resilience against potential threats while reinforcing national identity and unity among its diverse population.

Taiwan

Taiwan's historical experiences with armed conflict and insurgency have shaped its approach to maintaining internal security and stability. The Martial Law and Suppression period reflects a period of strict control and suppression of dissenting voices (Yeh, 2017). However, Taiwan has also evolved in its governance approach, transitioning towards a more democratic and rights-based framework in recent decades. The government's efforts to address historical injustices and promote indigenous rights signify a broader commitment to inclusivity and social justice (Chang, 2015). Taiwan's journey in navigating internal security challenges underscores the importance of balancing security imperatives with respect for human rights and democratic principles.

Vietnam

Vietnam's responses to armed conflicts and insurgencies have been marked by both military operations and political measures aimed at maintaining control and stability. The historical context of conflicts with Montagnard tribes and communist movements highlights the complexities of Vietnam's internal security challenges (Nguyen, 2012). The use of air attacks and suppression tactics during periods of unrest underscores the government's approach to quelling dissent and maintaining authority. However, Vietnam's experiences also underscore the limitations of purely militaristic approaches to internal security, as evidenced by ongoing resistance and political movements (Truong, 2014). The need for comprehensive strategies addressing the root causes of conflicts, including social and economic grievances, remains critical to Vietnam's security landscape.

3.4 Government Policies and Best Practices

Government Policies and Best Practices in Singapore

Singapore's constitutional recognition of the special position of Malays as the indigenous people reflects the nation's commitment to protecting and promoting the interests of diverse ethnic groups (Singapore Constitution, Article 152). This commitment is symbolic and deeply ingrained in Singapore's governance structure and policies. The government's proactive approach, exemplified by the Maintenance of Religious Harmony Act (MRHA) and the Ethnic Integration Policy (EIP), has fostered a harmonious coexistence among different racial and religious communities (Tan, 2017). Moreover, Singapore's success in maintaining racial harmony is evident from various surveys and studies highlighting high levels of satisfaction and trust among ethnic and religious groups (MCCY Survey, 2019). The government's emphasis on community engagement, education, and social integration has created a strong national identity while respecting and celebrating Singapore's multicultural heritage. Singapore continues to prioritize inclusivity and diversity, recognizing that ongoing efforts are essential to preserve and strengthen its social fabric.

Government Policies and Best Practices in Taiwan

Taiwan's journey towards reconciliation with its Indigenous communities marks a significant step in addressing historical injustices and promoting social inclusion (Taiwan Presidential Apology, 2016). President Tsai Ing-wen's formal apology and commitment to transitional justice demonstrate Taiwan's democratic maturity and dedication to upholding human rights and equality (Chang, 2015). Furthermore, Taiwan's political reforms, including establishing commissions for abuses against Indigenous Peoples and transitional justice, underscore a broader commitment to political reconciliation and social progress (Yeh, 2017). The government's initiatives to prioritize education, healthcare, and infrastructure development for ethnic minorities reflect a comprehensive approach to addressing socio-economic disparities (National Target Program, 2021-2030). Taiwan's efforts in promoting national identity, democracy, and inclusive governance are valuable lessons in conflict resolution and nation-building.

Government Policies and Best Practices in Vietnam

Vietnam's focus on ethnic minority development through targeted programs and policies underscores a commitment to inclusive growth and social equity (Protection and Development Program, 2021-2030). The government's education, healthcare, and infrastructure initiatives aim to improve living standards and empower marginalized communities (National Assembly Decision, 2020). Moreover, Vietnam's engagement in dialogue, political reforms, and international cooperation reflects a multifaceted approach to conflict resolution and peacebuilding (Prime Minister's Program Approval, 2025). The government's efforts to address historical grievances and promote socioeconomic opportunities for ethnic minorities demonstrate a proactive stance toward fostering social cohesion and stability. Moving forward, Vietnam's focus on community engagement, institutional reforms, and inclusive development will be crucial in sustaining peace and prosperity for all its citizens.

3.5 Lessons Learned from Each of the Country

Lessons Learn from Singapore Experience

In examining Singapore's approach to conflict resolution, it becomes evident that the nation's emphasis on diplomacy, mediation, and international cooperation has been instrumental in fostering regional stability (Tan, 2017). Through proactive engagement in shuttle diplomacy, facilitation, and mediation efforts, Singapore has effectively positioned itself as a neutral and trusted mediator in regional and international disputes (Tan, 2017). This approach has contributed to conflict resolution and enhanced Singapore's diplomatic standing and reputation

as a responsible global actor committed to the peaceful resolution of conflicts (Ministry of Culture, Community and Youth [MCCY], 2019).

Furthermore, Singapore's commitment to multilateralism and adherence to international norms, as enshrined in its constitution, has strengthened its role in promoting dialogue, building relationships, and seeking consensus on peace and security issues (Singapore Constitution). By upholding the rule of law and advocating for peaceful settlement mechanisms such as international arbitration, Singapore has underscored the importance of legal frameworks in resolving conflicts (Singapore Constitution). Moreover, the nation's emphasis on confidence-building measures, Track II diplomacy, and economic cooperation underscores its holistic and multi-faceted approach to conflict resolution, offering valuable lessons for other countries grappling with similar challenges (Chang, 2015; Tan, 2017; MCCY, 2019).

Lessons Learn from Taiwan Experience

Taiwan's journey toward conflict resolution and stability is characterized by a multifaceted approach encompassing economic development, democratization, and reconciliation efforts (Chang, 2015; Yeh, 2017). The nation's focus on economic policies supporting industrialization and job creation has improved living standards and reduced support for radical ideologies by addressing underlying socio-economic grievances (Chang, 2015). Furthermore, Taiwan's transition to democracy, marked by political reforms and the expansion of political freedoms, has been pivotal in promoting political participation and inclusivity (Yeh, 2017). These efforts have contributed to reducing historical grievances and fostering national unity.

Additionally, Taiwan's commitment to truth and reconciliation, as evidenced by recent calls for addressing historical injustices and human rights violations, reflects a growing awareness of the importance of acknowledging past grievances in promoting societal healing and reconciliation (Yeh, 2017). The nation's focus on vigilance, preparedness, and international engagement further reinforces its determination to maintain stability and security while seeking diplomatic support and cooperation. Taiwan's experience offers valuable lessons on the significance of inclusivity, resilience, and adaptability in navigating complex security challenges and promoting peace-building efforts (Taiwan Presidential Apology, n.d.).

Lessons Learn from Vietnam Experience

Vietnam's post-conflict journey underscores the importance of national reconciliation, socio-economic development, and continuous learning in addressing armed conflict and insurgency. The nation's National Reconciliation Policy, characterized by amnesty programs and vocational training for former combatants, has played a crucial role in integrating ex-combatants into civilian life and promoting social cohesion. Moreover, Vietnam's comprehensive peace accords and efforts toward truth and reconciliation reflect a commitment to addressing historical grievances and promoting national healing (Karnow, 1983). Furthermore, Vietnam's focus on socioeconomic development to address the root causes of conflict and efforts to understand local dynamics and foster community resilience highlight a holistic approach to conflict resolution. The nation's adaptability, flexibility, and continuous evaluation of strategies underscore its commitment to learning from past experiences and improving responses to armed conflict and insurgency. Vietnam's journey provides valuable insights into the complexities of post-conflict recovery and the importance of sustainable peace-building efforts rooted in inclusivity, reconciliation, and socio-economic development.

3.6. Conceptual Framework for Each Country

Based on the study's lessons, the researcher strongly recommends the following action plan as a framework for each country under study.

Action Plan for Singapore

This study highlights several core activities and specific programs to address armed conflict and promote peace in various regions. Rehabilitation and reintegration efforts focus on providing education, vocational training, and employment opportunities to break the cycle of conflict by offering a path toward a peaceful and productive life. Community engagement and social integration aim to foster dialogue and cooperation, addressing socio-economic disparities and reducing the appeal of radical ideologies. Confidence-building measures, such as establishing communication channels and facilitating dialogue, seek to de-escalate conflicts and build trust among

conflicting parties. Diplomatic engagements involve unofficial dialogues among stakeholders, including civil society organizations, academics, and experts, to explore alternative conflict solutions. A holistic and multi-faceted approach combines military, political, economic, and social measures to address grievances and provide alternative pathways for those susceptible to radicalization, focusing on more than just a military response. Long-term commitment and adaptability involve continual policy reviews and improvements to dynamically address armed conflicts and insurgencies, offering insights for other nations facing similar challenges. Economic cooperation and development programs aim to tackle root causes of conflict, such as poverty, inequality, and social exclusion, while promoting economic integration, trade, and investment to build interdependence and shared interests among nations. Strictly implementing the rule of law and adherence to international norms promotes peaceful dispute resolution through legal mechanisms. Strong governance and political will are essential for maintaining law and order and protecting national security. Lastly, multilateralism and international cooperation through organizations like the United Nations, ASEAN, and APEC foster dialogue, build relationships and seek consensus on peace and security issues.

The recommended action plan for Singapore's indigenous settlement encompasses several crucial components. Rehabilitation and Reintegration programs are vital, focusing on providing education, vocational training, and employment opportunities for former insurgents to break the cycle of conflict. Community Engagement and Social Integration are equally important, fostering dialogue, addressing socio-economic disparities, and countering radicalization efforts. Confidence-building measures should be implemented to reduce tensions and build trust among conflicting parties, alongside active Diplomacy and Dialogues involving stakeholders from various sectors. A Holistic and multi-faceted approach is essential, combining military, political, economic, and social measures to address root causes. Long-term commitment and adaptability are emphasized for continuous improvement, along with a commitment to Economic Cooperation and Development, Rule of Law, and International Norms. Multilateralism and international cooperation are also advocated and supported by strong governance and political will to confront challenges effectively. These strategies draw from Singapore's experiences but emphasize the need for tailored approaches based on specific contexts.

Action Plan for Taiwan

This study highlights several core activities and specific programs to address armed conflict and promote peace in various regions. Democratization and political reforms, such as lifting martial law, establishing multi-party elections, and expanding political freedoms, aim to address historical grievances, promote political participation, and reduce the appeal of radical ideologies. Reconciliation and reintegration efforts focus on fostering national unity and healing historical divisions by pursuing policies that reach out to former dissidents and exiled individuals, encouraging their return to Taiwan to participate in political processes. Truth and reconciliation efforts have shifted from suppression and martial law to socio-economic development, democratization, political reforms, and reconciliation, with objectives to uncover and document past abuses, promote understanding, and contribute to social healing. Economic development policies supporting industrialization, export-oriented growth, and job creation address the root causes of conflict by providing opportunities for the population and reducing support for radical ideologies. Strengthening economic capabilities and diversification aims to reduce vulnerability to economic coercion by investing in defense, technology, and human capital. Public awareness and resilience programs educate the public about potential threats and promote community resilience to foster a sense of national unity and cohesion. Vigilance and preparedness involve maintaining a modern and well-equipped military, investing in intelligence capabilities, and conducting regular exercises to enhance readiness against potential security threats. Deterrence and defense strategies maintain stability and security through credible military capabilities while developing asymmetric strategies to counterbalance resource and size disadvantages. Cybersecurity and information warfare measures counter the increasing prevalence of cyber threats and disinformation campaigns by strengthening cybersecurity, enhancing intelligence capabilities, and promoting public education. Continuous adaptation and innovation through investment in research and development foster a culture of innovation to dynamically address armed conflict and insurgencies and leverage technology for enhanced security. Lastly, diplomatic and international engagement involves building alliances, seeking international recognition, and cooperating with like-minded countries on security issues to strengthen the national security position through diplomatic leverage.

The action plan proposed addresses the root causes of conflict in Taiwan while providing opportunities and reducing support for radical ideologies. Democratization and Political Reforms, such as multi-party elections and expanded political freedoms, aim to address historical grievances and reduce radical appeal. Reconciliation and Reintegration policies foster national unity by engaging with former dissidents and exiles, contributing to societal healing. Truth and Reconciliation Efforts uncover past injustices, promoting understanding and reconciliation. Economic Development initiatives provide opportunities, while Economic strength and diversification bolster overall security. Public awareness, Vigilance, and preparedness ensure stability, while Deterrence and Defense strategies maintain security. Cybersecurity measures address modern threats, and Continuous adaptation and innovation enhance security capabilities. Diplomatic and international engagement strengthen Taiwan's security position through alliances and cooperation. Each strategy is tailored to Taiwan's unique challenges and dynamics, emphasizing a comprehensive conflict resolution and security approach.

Conceptual Framework for Vietnam

This study highlights several core activities and specific programs to address armed conflict and promote peace in various regions. The National Reconciliation Policy involves implementing national amnesty programs, vocational training, and support for reintegration into civilian life to heal divisions and integrate former combatants into society. Comprehensive peace accords establish a framework for peace and reconciliation, employing comprehensive agreements with communist forces. Socioeconomic development focuses on investing in education, healthcare, infrastructure, and poverty reduction to address socio-economic disparities and build community resilience. The strategy of winning hearts and minds aims to gain the support and trust of the local population by providing security and delivering basic services. Understanding local dynamics promotes considering cultural, historical, and socio-political factors to build trust and legitimacy, alleviate grievances, promote stability, and reduce support for insurgent movements. Post-conflict rebuilding involves rebuilding infrastructure, promoting economic development, and initiating reconciliation processes to establish long-term stability and peace for sustainable development. Continuous evaluation and learning establish processes for evaluating, monitoring, and learning from successes and failures to refine strategies and improve future responses to armed conflict and insurgency. Reconciliation processes provide a platform for sharing victims' stories, expressing grievances, and seeking national reconciliation. A comprehensive peace plan includes political, military, and economic components and the withdrawal of foreign forces to establish a unified government. Finally, international support and cooperation involve collaboration with the international community for post-conflict recovery, strengthening governance, and promoting national stability through economic assistance, technical expertise, and diplomatic support.

The recommended action plan for Vietnam includes adopting a National Reconciliation Policy, which integrates former combatants through amnesty programs and vocational training. The Comprehensive Peace Accords aim to end conflict and establish peace frameworks, evolving with changing priorities. Socio-Economic Development invests in education and poverty reduction to reduce support for insurgencies. Winning Hearts and Minds gains local support through security addressing socio-economic disparities and understanding Local Dynamics tailors' strategies to local needs, building trust. Post-conflict rebuilding focuses on infrastructure and reconciliation for long-term stability. Continuous Evaluation and Learning refine strategies based on past experiences. Reconciliation Processes acknowledge past atrocities, promoting healing and accountability. A Comprehensive Peace Plan involves the peace establishment's political, military, and economic components. International Support and Cooperation aid in post-conflict recovery through economic and diplomatic support. These strategies, learned from Vietnam's experiences, provide insights for other countries facing similar challenges.

4.0 Conclusion

In conclusion, the analysis of armed conflicts in Singapore, Taiwan, and Vietnam highlights the profound impacts of historical events, societal tensions, and government actions on the extent and nature of violence. The conflicts in these regions have resulted in significant casualties, human rights violations, and enduring social divisions, underscoring the critical need for comprehensive strategies and proactive measures to address armed conflicts.

Singapore's conflict history reveals the consequences of ethnic tensions, colonial legacies, and nationalist movements, leading to substantial casualties during the Japanese Occupation. The government's response has involved robust security measures, intelligence operations, and initiatives like the Maintenance of Religious

Harmony Act to maintain stability and harmony. Taiwan's experience with armed conflict traces back to historical land disputes and indigenous resistance against colonization. The prolonged martial law period and suppression of dissent highlight challenges in political reconciliation and human rights protections. Efforts toward reconciliation and democratization have been pivotal in promoting stability and national identity. Vietnam's conflicts have been shaped by ideological divisions, colonial influences, and international dynamics, resulting in immense civilian casualties and societal upheaval. Government actions have ranged from military operations to socio-economic development programs and international cooperation initiatives to address conflict-related challenges.

Lessons learned from these experiences emphasize the importance of diplomacy, mediation, and international cooperation alongside efforts in political reconciliation, economic development, and social integration. Strengthening governance, upholding human rights, promoting truth and reconciliation, and fostering grassroots participation are essential for long-term peace and stability in conflict-affected regions. Governments must prioritize dialogue, inclusive policies, and conflict resolution mechanisms while addressing root causes, promoting accountability, and ensuring sustainable development for lasting peace and prosperity. International support, partnerships, and continuous learning are crucial in navigating complex conflict dynamics and building resilient societies.

These insights inform the current study by emphasizing the critical need for comprehensive strategies that integrate diplomacy, mediation, and international cooperation alongside efforts in political reconciliation, economic development, and social integration. The lessons learned stress the importance of strengthening governance, upholding human rights, promoting truth and reconciliation processes, and fostering grassroots participation to achieve long-term peace and stability in conflict-affected regions. Moreover, the findings highlight governments' need to prioritize inclusive policies, effective conflict resolution mechanisms, and sustainable development initiatives while addressing root causes and promoting accountability. Finally, the study underscores the significance of international support, partnerships, and continuous learning in navigating the complexities of armed conflict and building resilient societies capable of enduring peace and prosperity.

5.0 Contributions of Authors

The author, the sole contributor to this study, works closely with his adviser to plan, conduct, and present the research. The adviser provides guidance and ensures academic standards are met, while the author takes the lead in all aspects of the study, including research execution, data analysis, and manuscript writing. This collaboration ensures a thorough and well-supported study despite the author being the sole author.

6.0 Funding

The author assumes the sole funder role for this study, providing financial support for all aspects of research design, data collection, analysis, and manuscript preparation. This financial responsibility empowers the author to independently shape the study's direction and methodology according to their vision and objectives.

7.0 Conflict of Interests

There is no conflict of interest present in this study.

8.0 Acknowledgment

I extend my heartfelt gratitude to Dr. Sahabil H. Abtuh, my esteemed adviser, for his invaluable mentorship and insightful feedback throughout the completion of this manuscript. I also acknowledge the Defense Panel led by Dr. Revelino D. Garcia, the PCU Vice President for Globalization, Dr. Margie Dela Cruz, the PCU Board of Trustees, Dr. Junifen J. Gauuan, the University President, the Graduate School Dean, and all my co-professors for their unwavering support and encouragement. I am also thankful to PBGEN Arnold Ardiente, Dean, Academics Group, Philippine National Police Academy, who has contributed in any way to the successful completion of this manuscript. TO THE ALMIGHTY ONE BE THE GLORY!

9.0 References

- Allen, L., & Louis, W. R. (1993). Singapore 1942: End of Empire. Routledge. <https://unesdoc.unesco.org/ark:/48223/pf0000211328>
- Bayly, C., & Harper, T. (2005). *Forgotten Armies: The Fall of British Asia, 1941-1945*. Harvard University Press.
- Bendavid, E., Boerma, T., Akseer, N., Langer, A., Malembaka, E. B., Okiro, E. A., Wise, P. H., Heft-Neal, S., Black, R. E., Bhutta, Z. A., Bhutta, Z., Black, R., Blanchet, K., Boerma, T., Gaffey, M., Langer, A., Spiegel, P., Waldman, R., & Wise, P. (2021). The effects of armed conflict on the health of women and children. *The Lancet*, 397(10273), 522–532. [https://doi.org/10.1016/S0140-6736\(21\)00131-8](https://doi.org/10.1016/S0140-6736(21)00131-8)
- Cederman, L.-E., Gleditsch, K. S., & Wucherpfennig, J. (2017). Predicting the decline of ethnic civil war: Was Gurr right and for the right reasons? *Journal of Peace Research*, 54(2), 262–274. <https://doi.org/10.1177/0022343316684191>
- Dhanabalan, S. (1989). Speech at New Year gathering for community leaders. Singapore. Ministry of Communications and Information (1985-1990). <https://www.nas.gov.sg/archivesonline/speeches/record-details/7929bb0b-115d-11e3-83d5-0050568939ad>
- Gleditsch, N. P. (1998). Armed conflict and the environment: A critique of the literature. *Journal of Peace Research*, 35(3), 381–400. <https://doi.org/10.1177/0022343398035003007>
- Greiner, B. (2009). *War Without Fronts: The USA in Vietnam*. Vintage. <https://archive.org/details/warwithoutfronts0000grei>
- Harbom, L., Högbladh, S., & Wallensteen, P. (2006). Armed conflict and peace agreements. *Journal of Peace Research*, 43(5), 617–631. <https://doi.org/10.1177/0022343306067613>
- Harbom, L., & Wallensteen, P. (2005). Armed conflict and its international dimensions, 1946-2004. *Journal of Peace Research*, 42(5), 623–635. <https://doi.org/10.1177/0022343305056238>
- Karnow, S. (1983). *Vietnam: A History*. New York: Viking Press.
- Lee, K. Y. (2000). *From Third World to First: The Singapore Story: 1965-2000*. HarperCollins.
- Lewy, G. (1978). *America in Vietnam*. Oxford University Press.
- Ma, Y. J. (2008). Memorial service speech for White Terror victims.

- Maynard, J. (2019). Ideology and armed conflict. *Journal of Peace Research*, 56(5), 635–649. <https://doi.org/10.1177/0022343319826629>
- Myers, R. H., & Lin, M. Y. (2007). *The White Terror: Political Repression in Taiwan*. University of California Press.
- Nguyen, H. (2015). *War and Its Aftermath: The Plight of Vietnam's Highlanders*. University of California Press.
- Pettersson, T., & Wallensteen, P. (2015). Armed conflicts, 1946–2014. *Journal of Peace Research*, 52(4), 536–550. <https://doi.org/10.1177/0022343315595927>
- Rummel, R. J. (1997). *Statistics of Democide: Genocide and Mass Murder Since 1900*. LIT Verlag.
- Sim, J. (2018). *Ethnicity and Nationalism in Singapore: A Study of Chinese-Malay Relations*. Palgrave Macmillan.
- Stedman, S., et al. (2021). The political and security dimensions of the humanitarian health response to violent conflict. *The Lancet*, 397 (10273), 511–521. [https://doi.org/10.1016/S0140-6736\(21\)00130-6](https://doi.org/10.1016/S0140-6736(21)00130-6)
- Tsai, T. (2016). *Indigenous Peoples and Land Conflicts: A Study of Taiwan's Plains Indigenous Groups*. Routledge.
- Turse, N. (2013). *Kill Anything That Moves: The Real American War in Vietnam*. Picador.
- Vietnam War Crimes Working Group. (1971). *Reports and investigations*.
- Yoram Dinstein (2012). The Principle of Distinction and Cyber War in International Armed Conflicts. *Journal of Conflict and Security Law*, 17 (2), 261–277. <https://doi.org/10.1093/jcsl/krs015>

School Principal's Leadership Style and Teachers' Job Performance: A Systematic Review of Literature

Coulyn B. Ortiz, Leonora F. De Jesus*

Bulacan State University, Malolos, Bulacan, Philippines

*Corresponding Author Email: leonora.dejesus@bulsu.edu.ph

Date received: June 30, 2024

Date revised: July 14, 2024

Date accepted: July 19, 2024

Originality: 95%

Grammarly Score: 99%

Similarity: 5%

Recommended citation:

Ortiz, C., & De Jesus, L. (2024). School principal's leadership style and teachers' job performance: A systematic review of literature. *Journal of Interdisciplinary Perspectives*, 2(8), 573-580. <https://doi.org/10.69569/jip.2024.0324>

Abstract. The leadership style of the school principal plays a vital role in an institution because its primary goal is to guide, motivate, direct, and influence the school community – which includes teachers, staff, and other stakeholders—to fulfill the institution's vision, mission, and goals. As a result, the researcher conducted this systematic literature review to identify the effective leadership styles of school principals and how they connect to teachers' job performance, as successful teachers can transform an institution. The researcher thoroughly reviewed twenty (20) research articles, and the results revealed that the school principal uses a variety of leadership styles. Three of these – democratic, transformational, and autocratic – show potential and positively correlate with teachers' job performance. However, using an authoritarian leadership style should be conducted cautiously by the school principal as it can decrease teachers' job performance if not properly practiced. Furthermore, it has been concluded from the studied researchers that certain leadership styles have no substantial association, or a negative relationship, with teachers' job performance. Therefore, the authors of the reviewed literature did not recommend that school principals use it in their leadership roles within an institution.

Keywords: Leadership style; School principal; Teachers' job performance; Systematic literature review.

1.0 Introduction

An educator can be considered as one of the sources of knowledge, skills, and moral values that an individual should have for them to reach their full potential so that they will have their individual growth, personal and career-wise, and be able for to accomplish their roles and duties as a responsible citizen of the community, which is to contribute for the betterment of the society. According to Hunt's (2009) definition, cited by Mbua (2023), a teacher's effectiveness is the culmination of all the qualities, abilities, and actions that educators at all levels display to support their students in reaching their objectives. These results could include meeting both targeted learning goals and broader ones, such as developing problem-solving, critical thinking, teamwork, and productive citizenship skills. As a result, educators are crucial to the success of society. For this reason, educators must provide students with an excellent and positive teaching and learning environment. This can only be achieved if educators are inspired and supported to acquire the professional competencies they should have and are free to share their ideas, strategies, and innovative teaching practices.

The leadership style used by the school principal within the institution can impact teachers reaching their peak professional performance and giving the students a high-quality education. Research by Russamsi et al. (2020) shows that principal leadership can enhance teachers' professionalism and efficiency. Zainuddin et al. (2020) claim that solid organizational communication and a principal's leadership can increase teacher dedication and improve performance.

A leader's behavior or strategy for influencing the attitudes, feelings, ideas, and actions of the people in their organization is their leadership style (Wibowo & Hashanah, 2021). A leader can persuade others to accomplish a mission, duties, or goal and lead the organization more logically through a complex leadership style. Educational goals such as the successful implementation of curriculum and instruction, the outstanding academic achievement of students, and the professional growth of teachers in an institution can be accomplished through an effective leadership style used by the school principal.

According to Hartini et al. (2019), effective leadership enables all teachers or staff members to participate in various activities that impact people's and organizations' performance. Suppose the principal can pay attention to its members' qualities, such as forming a future image, determining what goals can be achieved, and showing enthusiasm for achieving organizational goals. In that case, teachers will see educational goals as the main objectives, inspiring them to perform to the best of their abilities (Mehdinezhad & Mansouri, 2016).

Principals must know various leadership philosophies and make informed decisions to improve teacher productivity and ultimately meet secondary education objectives. Leadership style has been and continues to be a significant research variable in management. The effectiveness of secondary education goals is mainly determined by teacher productivity, which strongly correlates with administrators' leadership styles (Ekpemogu et al., 2023).

Another administrator's responsibility is supporting teachers in their pedagogical approaches. Principals are essential for the institution to accomplish its goals and objectives. Among these duties is the principal's authentic and effective leadership, which enhances teachers' professional performance. The principals are responsible for creating a positive school climate that encourages outstanding teacher performance and offering insightful commentary on their day-to-day operations (Saleem et al., 2020).

The teachers' level of competence is one factor that can lead to the institution's educational goal being achieved. To be considered quality, a teacher must be professional in the sense that they can give their students a quality education, they must know how to work effectively with colleagues to share their professional expertise and ideas to improve students' academic performance, and they must be constantly motivated to support and contribute to school improvement while also continuing their professional growth. The school's principal should encourage and support the teachers in pursuing professional development to become competent educators.

In educational institutions, teachers are primarily responsible for their students' intellectual and personal growth. Instructors' guidance and leadership are the most critical factors influencing students' academic progress. The school administration must promote and enhance modern knowledge management and lesson plans that maximize student learning and improve teachers (Parveen et al., 2022).

The relationship between leaders' behaviors and leadership styles and employee job performance has long been a topic of interest for international scholars. More specifically, a large body of research indicates a significant entanglement between principal leadership styles and teacher job performance.

However, the researcher found that some teachers need more motivation to perform optimally, impacting students' academic performance and accomplishing the school's educational objectives. The researcher explored effective leadership styles for school principals to encourage teachers to perform at their highest potential. It was considered that ineffective educational leadership might have hindered their ability to perform optimally.

This will provide the school principal with evidence-based recommendations on effective leadership styles that have been proven to successfully motivate teachers. The goal is to implement these leadership styles to create an environment where teachers feel highly motivated, improving their performance. This will benefit the teachers by supporting their professional growth and enabling them to apply them in their teaching careers. Ultimately, the expected outcome is to contribute to the educational institution's greater efficiency and effectiveness in achieving its goals, mission, and vision.

2.0 Methodology

This study applies a systematic literature review method to analyze the papers that deal with the different leadership styles employed by the school principal and to determine the effective school principal's leadership style that will result in the quality job performance of teachers. A systematic literature review (SLR) is an independent academic process that looks for and evaluates all relevant literature on a topic to conclude the research question. A systematic literature review was conducted to explain the state of the field and the conclusions that ought to be made from it. A thorough methodological approach is utilized to increase the validity of the data chosen and reduce the discrepancies caused by an unreasonably restrictive selection of the available literature.

According to Kethavath and Kumari (2024), systematic reviews aim to clarify the current state of existing research and the implications to be drawn from it. Concerning a specific research issue, a systematic literature review (SLR) can shed light on the current level of knowledge on a subject and identify any gaps or areas that require further investigation. Thus, the researcher conducts a detailed analysis of each selected paper used to successfully perform this systematic literature review about the effective leadership style of school principals, which brings optimal performance to teachers.

This study adhered to the systematic review principles outlined by Kethavath and Kumari (2024). The underlying principle of a systematic review entails the meticulous gathering, evaluation, and summarization of all pertinent research data concerning a specific issue or topic utilizing a methodical approach. This process incorporates predetermined criteria for study selection, transparent procedures, and rigorous analysis to mitigate bias and ensure the credibility of the findings. Lame (2019) also stated that the main goal of the SR approach is to reduce bias and increase transparency at every stage of the review process. This is done using explicit, systematic methods to minimize bias in study selection and inclusion, assess the quality of included studies, and objectively summarize them.

The first stage that the researcher applied is to identify the research topic or the issue that has to be addressed in the paper through a well-crafted inquiry. After determining the research topic, the second stage was to conduct a literature search relevant to the identified research topic using three (3) databases, namely Google Scholar, Research Gate, and the Education Resources Information Center (ERIC). For the third stage, the researcher sets the criteria for selecting the studies or relevant work of the research topic. The following criteria were used to choose the studies: (1) they had to be published in peer-reviewed journals; (2) had to be published between 2019 and 2024; (3) had to focus on the connection between the effective leadership style of the school principal and the teachers' optimal job performance; (4) had to be conducted at the elementary and high school levels; (5) had to use quantitative research methods; (6) the publications had to be written in English; and (7) had to be complete- text available. In the fourth stage, the studies were downloaded and saved after they met the criteria for inclusion in the databases. The ones that were carried out were not included in the analysis because they needed to meet the requirements set by the researcher.

The researcher looked over and evaluated the study abstracts. To determine rigorously which papers were within and outside the scope of the research using the set criteria from the third stage. The researcher thoroughly examined and analyzed the documents gathered in the fourth stage. The researcher personally reviewed the entire text of each article to determine which ones were within the scope of the research.

3.0 Results and Discussion

As a result of the research, the school principal practiced several leadership styles. These were instructional leadership, cultural leadership, visionary leadership, ethical leadership, autocratic leadership, democratic leadership, laissez-faire leadership, transactional leadership, transformational leadership, bureaucratic leadership, charismatic leadership, authoritarian leadership, situational leadership, task-oriented leadership, directive, participative leadership, supportive leadership, achievement-oriented leadership, consultative leadership, delegation leadership, and distributed leadership. Most of the leadership styles mentioned above positively affected teachers' job performance, while some have no relationship with the teachers' job performance.

Table 1 below presents the research article used for the researcher's systematic literature review, along with the authors and the date of publication.

Table 1. Research article used in the systematic literature review

Author/s	Research Title	Date of Publication
1. Orunbon, N. O., Modupe M., & Onyene, I. C.	Principals' Path-Goal Leadership Practices and Teachers' Job Performance in Public Senior Secondary Schools in Education District V, Lagos, Nigeria	2024
2. Loretta, O. N., Obilor, P. U., Nwogbo, M. O., & Ubah, C. G.	Influence of School Leadership Styles on Teachers' Performance in Public Secondary Schools in Anambra State, Nigeria	2023
3. Amare, B., Yuya, A. (PhD) & Hailu, T. (PhD)	The Principals' Leadership Styles and Teachers' Job Performance in Secondary Schools of East Hararghe Zone, Oromia Regional State	2023
4. Kumari, H. L.	The Impact of Leadership Styles of School Principals on Teacher Performance.	2023
5. Hussain, M., & Hussain, L.	Impact of Leadership Style of Principals on Teachers' Work Performance and Motivation at Secondary Level	2023
6. Hardianto, H., Hidayat, H., Setiawan, M. N. A., & Zulkifli, Z.	Principal Leadership Effectiveness: A Literature Review	2023
7. Khan, F.	Transformational Leadership and Teacher Work Performance: Mediating Effect of Job Autonomy and Trust in School Principal – Insights from Senior Secondary School Data in India	2023
8. Bahadar, S., Ullah, H., & Ayaz, M.	Relationship Between Autocratic Leadership Style and Teachers' Job Performance in Secondary Schools of Khyber Pakhtunkhwa	2023
9. Farooq, A., Dilshad, S. A., & Qadir, S.	A Study of Leadership Styles and Teachers' Performance	2022
10. Parveen, K., Quang Bao Tran, P., Kumar, T., & Shah, A. H.	Impact of Principal Leadership Styles on Teacher Job Performance: An Empirical Investigation	2022
11. Okoroma, N. S., & Agbo, L. O.	Influence of Principals' Leadership Styles on Job Performance of Teachers in Public Senior Secondary Schools in Etche and Obio/Akpor Local Government Areas of Rivers State	2022
12. Dursun, İ. E., & Bilgivar, O. O.	The Effect of School Principals' Leadership Styles on Teacher Performance and Organizational Happiness	2022
13. Onia, S. I., & Elkhder, E.	The Effect of Principals' Management Styles on Teachers' Performance in Private Primary Schools in Omdurman Locality in Sudan	2021
14. Raupu, S., Maharani, D., Mahmud, H., & Alauddin, A.	Democratic Leadership and Its Impact on Teacher Performance	2021
15. Kadiyono et al.	Develop Leadership Style Model for Indonesian Teacher's Performance in Education 4.0 Era	2020
16. Saleem, A., Aslam, S., Yin, H., & Rao, C.	Principal Leadership Styles and Teacher Job Performance: Viewpoint of Middle Management	2020
17. Saleem, A., Aslam, S., Rafiq, J., & Rao, Prof. C.	Principal Leadership Style and Teacher Job Performance: Evidence from Pakistan	2019
18. Elpisah & Hartini	Principal Leadership Style and Its Effect on Teachers' Performance	2019
19. Akudo, F. U.	Principals' Transformational Leadership Style and Teachers' Job Performances in Public Secondary Schools in Nigeria	2019
20. Lay, A. A. M.	The Relationship between Principal's Transformational Leadership Styles and Teachers' Job Performance in Selected High Schools in Monywa Township in Myanmar	2019

Table 1 contains the titles of the research papers utilized in this study to systematically review each literature item to identify the most effective principal leadership style that will enhance teachers' job performance. It also includes the publication dates of each research paper and their respective research numbers for convenient reference in Table 2.

Ten (10) research articles focused on the relationship between the democratic leadership style of the school principals and its ties to the teachers' job performance. All of the research articles found that the democratic leadership style of school principals positively relates to teachers' job performance. It has been suggested by Saleem et al. (2019) that school principals create friendly working connections with teachers when they use democratic leadership styles. It indicates that when democratic leadership among principals increased, so did teachers' job performance. Since principals want to improve teachers' work performance, they give responsibilities to teachers, include them in school challenges, and participate in decision-making.

Table 2. Relationship between school principal's leadership style and teachers' job performance

Leadership Styles	Research Articles	Relationship with Teachers' Job Performance
1. Instructional Leadership Instructional leadership encompasses a series of deliberate actions aimed at positively influencing classroom instruction (Loretta et al., 2023).	12	Positive
2. Cultural Leadership Encourages a culture of shared communication between students and teachers and explores diverse communication methods to execute activities and enhance the effective use of intra-organizational communication tools (Dursun & Bilgivar, 2022).	2	Negative
3. Visionary Leadership It has a forward-thinking approach and take proactive steps towards shaping the future (Dursun & Bilgivar, 2022).	12	Positive
4. Ethical Leadership Aligns in ethics and values with the followers, makes challenging decisions based on high ethical standards, encourages the followers to embrace a vision, and strives to establish a community based on principles of social justice (Dursun & Bilgivar, 2022).	12	Positive
5. Autocratic Leadership Policies and procedures are established with minimal input or involvement from the group (Amare et al., 2023).	3, 6, 8, 9, 10, 15, 17	Positive
6. Democratic Leadership Enables team members to actively engage in organizational processes, fostering enhanced motivation and creativity (Amare et al., 2023).	13	Negative
7. Liaise-faire Leadership It permits autonomous decision-making by the group without the direct involvement of the leader (Amare et al., 2023).	3, 4, 6, 9, 10, 11, 13, 14, 15, 17	Positive
8. Transactional Leadership Consider employing a system of rewards and consequences during specific operations to incentivize employees to enhance their performance (Okoroma & Agbo, 2022).	3	Positive
9. Transformational Leadership Encourage followers to strive beyond expected performance by establishing more ambitious expectations, empowering them, and sensitively addressing their individual needs and personal development (Loretta et al., 2023).	9, 10, 13, 17	Negative
10. Bureaucratic Leadership Making decisions based on stringent rules, lacking any degree of flexibility (Kadiyono et al., 2020).	5, 11, 15	Positive
11. Charismatic Leadership Reiterating a clear vision, effective communication, and the display of consistency and focus are important considerations to emphasize (Kadiyono et al., 2020).	6	Negative
12. Situational Leadership Consider adapting their level of support and guidance based on the individual circumstances and motivation of their employees (Ghazzawi et al., 2017).	2, 4, 5, 6, 7, 15, 19	Positive
13. Task-oriented Leadership Engages in effective communication and motivation of subordinates by setting clear deadlines for task completion in accordance with predetermined objectives (Alvi & Rana, 2019).	15	Positive
14. Directive Leadership Ensure that employees have clear guidelines for making decisions and taking actions that align with the leader's perspective (Orunbon et al., 2024).	6	Negative
15. Participative Leadership Establish a supportive and inclusive work environment wherein employees are valued and respected (Orunbon et al., 2024).	15	Positive
16. Supportive Leadership It focuses on fulfilling followers' human needs, ensuring well-being by improving working conditions, and promoting equal treatment, respect, and recognition (Saleem et al., 2020).	6	Negative
17. Achievement-oriented Leadership Establish clear and achievable goals with high-performance standards, demonstrating trust in the capabilities of subordinates, and fostering a culture of ongoing performance improvement (Saleem et al., 2020).	1, 16, 18	Positive
18. Consultative Leadership Facilitates consultation with the employees and interacts with subordinates (Elpisah & Hartini, 2019).	1, 18	Positive
19. Delegative Leadership Empower staff to take initiative by trusting their skills, discipline, and decision-making abilities (Elpisah & Hartini, 2019).	4	Negative
20. Distributed Leadership Focuses on working together as a team, rather than working alone (Kumari, 2023).	16	Positive
	1, 16	Positive
	18	Positive
	18	Positive
	4	Negative

The transformational leadership styles of school principals also found in the seven (7) research articles have a positive relationship to teachers' job performance. To achieve organizational goals, followers' intellectual development, self-confidence, team spirit, and enthusiasm should be improved. Chu and Lai (2011) assert that the transformational leadership style concentrates on bringing change and innovation within the organization. According to Bunbababan et al. (2022), implementing a transformational leadership style enhances teacher performance and elevates educational quality. Higher than what they require, principals with a transformative approach will be able to meet the needs of their colleagues.

Then, there are autocratic leadership styles in this research, which has seven (7) research articles that state that this leadership style has a positive relationship with teachers' job performance. Bahadar et al. (2023) stated that authoritarian leaders typically want to make all decisions alone, and their colleagues, such as employees or teachers, must carry out their orders without expressing their opinions about the various decision-making processes. For this reason, teachers' job performance and the autocratic leadership style of institutional heads have a low or weak but positive and significant relationship. Some research indicates that although autocratic leadership styles use directive language when communicating with teachers and make decisions solely based on their suggestions or opinions, it still shows from their study that the authoritarian leadership style still primarily has a positive and constructive impression or impact on teachers' performance because they assist principals and administration in having reasonable control over working conditions, particularly when it comes to enforcing teachers who lack enthusiasm, which hinders students' learning outcomes, to perform their duties and accomplish complex work on time, which is essential for the success of the schools and their students.

However, one research article shows a negative relationship between the autocratic leadership style of the school principal and teachers' job performance (Onia & Elkhder, 2021). It was found in the article that autocratic leadership has no contribution to the job performance of the teachers; thus, it was not recommended that the school principal practice it.

The research study also found that four (4) research articles included transactional leadership style in their research article, and three (3) stated that this leadership style has a positive relationship with the teacher's job performance. The transactional leadership style, as referenced by Agbo, L. O., and Okoroma, N. S. (2022), primarily focuses on the functions of teamwork, organization, and supervision (Blackburn, 2020). Leaders who employ this leadership style use rewards and punishments when carrying out particular tasks to motivate their employees to perform better. This kind of leadership focuses on achieving the goals at hand. That is why leaders always see to it that there is a common goal within the group and a set of routines, rules, and regulations that colleagues should strictly follow to accomplish the goals efficiently and effectively—in this nature of the transactional leadership style, Okoroma, N. S. (2022) suggested that this leadership style should regularly employ reward and punishment by the school principal to motivate teachers to accomplish their tasks. Additionally, based on the result of the research by Kadiyono et al. (2020), which concluded that this leadership style has a positive relationship with teachers' job performance alongside the other previous studies which also have the same conclusion but transactional leadership should be appropriately implemented that it will encourage teachers to do their tasks given to them excellently. Conversely, one of the articles shows that transactional leadership has a negative relationship to teachers' job performance.

A laissez-faire leadership style was also found in this research, wherein five (5) research articles were included. Four (4) of them stated that there was a negative relationship between laissez-faire leadership style and teachers' job performance. As cited by Onia & Elkhder (2021), a laissez-faire leader needs a defined vision and provides his team with no professional leadership; he also needs a routine for managing his team and generating ideas. Leaders who practice laissez-faire leave responsibility and avoid making choices; instead, they can give teams complete freedom to finish tasks and establish their plans. Laissez-faire leaders typically offer their employees the freedom to decide what has to be done at work. Working on various tasks and coming to many conclusions about different problems or subjects independently without a leader results in low performance, job satisfaction, and productivity. It was also observed from the study of Saleem et al. (2019) that principals who employed this leadership show little interest in the regular activities, assemblies, and events held at the school, do not oversee what teachers do in the staff and classroom, and seldomly help teachers to get over obstacles and difficulties at work. Subsequently, Parveen et al. (2022) concluded that laissez-faire leadership is harmful or ineffective for each of the underlying characteristics of teacher job performance. Hence, the result of the four studies was that this leadership style practiced by the school principal has a negative relationship with the teachers' job performance.

On the other hand, according to one study, teachers' job performance is positively correlated with a laissez-faire leadership style (Amare et al., 2023), which stated that because teachers are aware of their responsibilities and know what, how, why, and for whom to perform tasks, principals restrict their involvement with teachers, and this permits improvement to teachers' job performance. However, according to its recommendation, only a few

principals use a laissez-faire leadership style to improve teachers' job performance, which is why it is not recommended to be employed by the principal.

Other research articles also concluded a positive relationship between the leadership styles of the school principals and teachers' job performance, such as instructional, cultural leadership, visionary leadership, and ethical leadership from the research article of Dursun & Bilgivar (2022). The study states that instructional leadership focuses on solving problems and getting the school closer to its objectives by working with others. Contrary to the result of the research article of Dursun & Bilgivar (2022), Loretta et al. (2023) show that instructional leadership negatively relates to teachers' job performance. School principals who practiced cultural leadership fostered a sense of belonging among the students and teachers. They explore different communication strategies to make tasks go more smoothly and make efficient use of intra-organizational communication tools effectively. Visionary school leaders act and design the future in this manner, while ethical leadership encourages ethical behavior without tolerating unethical behavior within the school organization; it can enhance the organizational climate while adhering to moral norms.

Kadiyono et al. (2020) also concluded in their study that bureaucratic leadership and charismatic leadership have a positive relationship with teachers' job performance. Kadiyono et al. (2020) mentioned that according to Bass (2008), strict regulations applied to both the leader and his subordinates are a characteristic of bureaucratic leadership. In contrast to the study of Kadiyono et al. (2020), Hardianto et al. (2023) revealed that bureaucratic leadership and charismatic leadership have a negative relationship with the teacher's job performance and task-oriented leadership.

Directive leadership, as per the study by Saleem et al. (2020), states that if practiced by school principals, directive leadership gives their teachers task directions and instructions, including what is expected of them, how to follow them, and when to finish them. Elpisah and Hartini (2019) describe a directive leader as overseeing all decisions regarding the task and simply instructing subordinates to follow out. Consultative leadership engages in conversations and consultation with subordinates before establishing goals and outlining general guidelines, and delegation leadership communicates with subordinates about their issues and lets them participate in decision-making. All these four (4) leadership styles also show a positive relationship between teachers' job performance and situational leadership.

Participative leadership also implies a positive relationship towards the job performance of teachers. This leadership can grow into a beneficial trust between leaders and colleagues. Leaders are more likely to have faith in employees' abilities and capabilities to fulfill the responsibilities outlined in their job descriptions. However, Kumari, H. L. (2023) and Saleem et al. (2020) state that participative leadership style negatively affects teachers' job performance.

Moreover, school principals' achievement-oriented leadership style is also positively correlated to teachers' job performance, which asserts that this leadership communicates their expectations to their followers. They frequently create attainable objectives with the potential for high-performance standards, have faith in their colleagues' skills, and support ongoing performance enhancement.

4.0 Conclusion

Democratic and transformational leadership styles show remarkable results from the research articles the researcher has reviewed. It shows that school principal who practices democratic leadership styles from the ten (10) research articles and transformational leadership styles from the seven (7) research articles implies a positive relationship towards the teachers' job performance. Hence, these two leadership styles could be effective for the school principal in enhancing teachers' job performance. Other than the democratic and transformational leadership styles, there is also an autocratic leadership style that seems practical and has a positive relationship with the teacher's job performance based on the result of the seven (7) research articles the researcher reviewed.

The principal's leadership style may indicate a positive or negative relationship between the teachers' job performance. Thus, school principals should be knowledgeable, well-versed, and competent in leading and

managing teachers using leadership styles that are appropriate for the institution so that the institution's objectives, goals, vision, mission, and core values will be successfully achieved.

The results of this study could contribute to the successful management of school principals towards teachers. The study presented an effective principal leadership style that could be utilized to encourage teachers to work at their best, ultimately accomplishing the educational institution's goals, mission, and vision. It's important to note that the effectiveness of leadership style depends on the nature of the principal and their subordinates. Therefore, not all reviewed literature shows the same result. The researcher suggested that future studies should focus on the specific effects of principal leadership styles on school performance, as this study identified the impact of effective principal leadership on teachers' job performance.

5.0 Contributions of Authors

Coulyn B. Ortiz¹ - writing, data analysis, encoding
Leonora F. De Jesus² - supervising, revising

6.0 Funding

None

7.0 Conflict of Interests

No conflict of interest.

8.0 Acknowledgment

None

9.0 References

- Akudo, F. (2019). Principals' transformational leadership style and teachers' job performances in public secondary school in nigeria. *SMCC Higher Education Research Journal*, 1(1). <https://doi.org/10.18868/sherjte.01.060119.01>
- Amare, B., Yuya, A., & Hailu, T. (2023). The principals' leadership styles and teachers' job performance in secondary schools of east Hararghe Zone, Oromia Regional State. Addis Ababa University.
- Bahadar, S., Ullah, H., & Ayaz, M. (2023). Relationship between autocratic leadership style and teachers' job performance in secondary schools of Khyber Pakhtunkhwa. *Journal of Social Sciences Review*, 3(2), 211–218. <https://doi.org/10.54183/jssr.v3i2.253>
- Dursun, İ. E., & Bilgivar, O. O. (2022). School principals' leadership styles affect teacher performance and organizational happiness. *International Journal of Educational Administration and Leadership: Theory and Practice*, 1(1), 12–25. <https://doi.org/10.52380/ijedal.2022.1.1.7>
- Ekpemogu, H. N., Nzokurum, J., & Uche, C. (2023). Principal's leadership styles as predictors of teachers productivity in public senior secondary schools in Rivers State. *International Journal of Research Publication and Reviews*, 4(12), 551–558.
- Elpisah, E., & Hartini, H. (2019). Principal leadership style and its effect on teachers' performance. *Jurnal Aplikasi Manajemen*, 17(3), 506–514. <https://doi.org/10.21776/ub.jam.2019.017.03.15>
- Farooq, A., Dilshad, S. A., & Qadir, S. (2022). A study of leadership styles and teachers' performance. *Competitive Education Research Journal*, 3(1), 373–385.
- Hardianto, H., Hidayat, H., Setiawan, M. N. A., & Zulkifli, Z. (2023). Principal leadership effectiveness: A literature review. *Revista Iberoamericana de Psicología Del Ejercicio Y El Deporte*, 18(5), 602–606.
- Hussain, M., & Hussain, L. (2023). Impact of principals' leadership style on teachers' work performance and motivation at secondary level. *Journal of Development and Social Sciences*, 4(3), 1005–1013. [https://doi.org/10.47205/jdss.2023\(4-III\)92](https://doi.org/10.47205/jdss.2023(4-III)92)
- Kadiyono, A. L., Sulistiobudi, R. A., Haris, I., Wahab, M. K. A., Ramdani, I., Purwanto, A., Mufid, A., Muqtada, M. R., Gufron, M., Nuryansah, M., Ficayuma, L. A., Fahlevi, M., & Sumartiningih, S. (2020). Develop a leadership style model for Indonesian teachers' performance in the education 4.0 era. *Systematic Reviews in Pharmacy*, 11(9), 363–373. <https://doi.org/10.31838/srp.2020.9.52>
- Khan, F. (2023). Transformational leadership and teacher work performance: Mediating effect of job autonomy and trust in school principal – insights from senior secondary school data in India. *Educational Management Administration & Leadership*, 0(0). <https://doi.org/10.1177/17411432231172359>
- Kumari, H. M. L. (2023). The impact of leadership styles of school principals on teacher performance. *International Journal on Integrated Education*, 6(7), 75–81. <https://doi.org/10.17605/ijie.v6i7.4586>
- Lay, A. A. M. (2019, November). The relationship between principal's transformational leadership styles and teachers' job performance in selected high schools in Monywa Township in Myanmar. In 15th International Conference of Doctoral Studies in the Field of Education of Natural Sciences.
- Loretta, O. N., Obilor, P. U., Nwogbo, M. O., & Ubah, C. G. (2023). Influence of school leadership styles on teachers' performance in public secondary schools in Anambra State, Nigeria. *African Journal of Educational Management, Teaching and Entrepreneurship Studies*, 9(2), 69–77.
- Mbua, E. (2023). The impact of principal's leadership styles on teacher and school effectiveness. *International Journal of Research in Education Humanities and Commerce*, 4(2). <https://doi.org/10.37602/IJREHC.2023.4215>
- Okoroma, N. S., & Agbo, L. O. (2022). Influence of principals' leadership styles on teachers' job performance in public senior secondary schools in Etche and Obio/Akpor Local Government Areas of Rivers State. *International Journal of Social Science and Management Studies*, 1(3).
- Onia, S. I., & Elkhder, E. (2021). The effect of principals' management styles on teachers' performance in private primary schools in Omdurman Locality in Sudan. *MANAGER: Indonesian Journal of Educational Management*, 3(1), 62–74. <https://doi.org/10.52627/ijeam.v3i1.89>
- Orunbon, N. O., Isaac-Philips, M. M., & Onyene, I. C. (2024). Principals' path-goal leadership practices and teachers' job performance in public senior secondary schools in education District V, Lagos, Nigeria. *Ilorin Journal of Education*, 44(1), 149–163.
- Parveen, K., Quang Bao Tran, P., Kumar, T., & Shah, A. H. (2022b). Impact of principal leadership styles on teacher job performance: An empirical investigation. *Frontiers in Education*, 7. <https://doi.org/10.3389/educ.2022.814159>
- Raupu, S., Maharani, D., Mahmud, H., & Alauddin, A. (2021). Democratic leadership and its impact on teacher performance. *AL-ISHLAH: Jurnal Pendidikan*, 13(3), 1556–1570. <https://doi.org/10.35445/alishlah.v13i3.990>
- Saleem, A., Aslam, S., Rafiq, J., & Rao, Prof. C. (2019). Principal leadership style and teacher job performance: Evidence from Pakistan. *Authorea*, 2.
- Saleem, A., Aslam, S., Yin, H., & Rao, C. (2020). Principal leadership styles and teacher job performance: Viewpoint of Middle Management. *Sustainability*, 12(8), 3390. <https://doi.org/10.3390/su12083390>
- Kethavath, N., & Kumari, V. (2024). Systematic Techniques for Review of Literature. *Advances in Agricultural Research Methodology*, 2, 320–336.
- Lame, G. (2019). Systematic Literature Reviews: An Introduction. *Proceedings of the Design Society: International Conference on Engineering Design*, 1, 1633–1642. <https://doi.org/10.1017/dsi.2019.169.2>

Beyond Winning: Lived Experiences of Thriving Young Professionals Raised in Solo-Parent Families

Giselle Ann E. Manansala*, Gladiola A. Eje-Dimaculangan
University of Batangas, Batangas City, Philippines

*Corresponding Author Email: giselleann.enriquez@ub.edu.ph

Date received: July 2, 2024
Date revised: July 15, 2024
Date accepted: July 19, 2024

Originality: 96%
Grammarly Score: 99%
Similarity: 4%

Recommended citation:

Manansala, G.A., & Eje-Dimaculangan, G. (2024). Beyond winning: Lived experiences of thriving young professionals raised in solo-parent families. *Journal of Interdisciplinary Perspectives*, 2(8), 581-597.
<https://doi.org/10.69569/jip.2024.0326>

Abstract. Understanding the factors and mechanisms contributing to the success of thriving young professionals raised in solo-parent families can provide valuable insights into how these individuals overcame challenges and achieved personal and professional fulfillment. The research aimed to propose an intervention program based on the lived experiences of adults raised in solo-parent families, specifically their experiences, their views of their challenges, how they thrived despite being raised in solo-parent families, and what intervention program companies can implement for young professionals raised in solo-parent families. The study employed a phenomenological approach to analyze the participants' lived experiences and used thematic analysis to examine classifications and identify recurring themes in the data. The experiences of the participants included financial struggles, lack of understanding regarding parental separation, parental abandonment, toxic family dynamics, adverse emotions, and a fearful-avoidant attachment style during adult life. The participants viewed their challenges with a positive perspective and motivation to thrive in life. Despite being raised in a solo-parent family, they thrived through faith, a positive mindset, and grit.

Keywords: Young professionals; Solo-parenting.

1.0 Introduction

The modern family structure has undergone significant changes over the past few decades, with an increasing number of young professionals growing up in solo-parent families. The young adults raised in solo-parent families, where one parent is primarily responsible for their upbringing, can have diverse and unique experiences and challenges. Many of these young professionals from solo-parent families may have encountered challenges that affected their personal and professional lives, as being raised in such a family can lead to emotional distress, including feelings of abandonment, low self-esteem, anxiety, or depression. These unresolved emotions can impact their overall well-being and professional performance. They may lack the stability and support systems typically found in intact families. They may need access to guidance, mentorship, or financial resources that could assist in their career development.

A report from the Institute for Health Metrics and Evaluation (2019) estimates that about 280 million people worldwide have depression, and one of the risk factors identified is a history of childhood trauma, including abuse and parental separation. Another report by the National Bureau of Economic Research (2022) found that children raised by single mothers are more likely to have lower educational attainment, experience unemployment, and have lower earnings in adulthood. The data mentioned supports the claim that parental separation can manifest in adult mental health. Individuals who experienced growing up in a solo-parent family during childhood or adolescence may be at a higher risk of mental health issues, including depression, anxiety, and relationship

difficulties later in life. The emotional and psychological consequences of parental separation can impact an individual's well-being for many years. The World Health Organization released another report that the Philippines has estimated that the overall prevalence of depression in the Philippines among young adults is 8.9% (World Health Organization, 2021), which suggests that about 1 in 10 young adults experiences moderate to severe depressive symptoms based on the 2021 population estimate (Philippine Statistics Authority, 2022). The depressive symptoms are more prevalent in those with less education and toxic family systems, including domestic violence and separated parents.

Adults raised in solo-parent families, such as those who have experienced parental separation, can be at an increased risk of developing depression. The impact of a broken family on adult depression is influenced by various factors, including the individual's resilience, coping strategies, available support networks, and the specific circumstances surrounding the family breakdown. The experience of parental separation can be emotionally distressing for adults, even if it occurred during their childhood. Dissolution of the family unit, changes in living arrangements, and the associated feelings of loss, guilt, or rejection can contribute to the development of depressive symptoms. Being raised in solo-parent families can further affect the quality and stability of interpersonal relationships. Adults raised in solo-parent families may face difficulties in forming and maintaining healthy relationships due to trust issues, fear of abandonment, or challenges in expressing emotions. These interpersonal challenges can contribute to feelings of loneliness and isolation and can contribute to depressive symptoms.

Chen (2018) studied the effects of parental separation on the resilience of children who have experienced trauma. Results indicated no significant main effect of parental separation on resilience. However, trauma severity emerged as a significant moderator of the relationship between parental separation and children's resilience, and gender emerged as a significant predictor of certain aspects of resilient functioning. When more significant risks are found, we are beginning to understand better the factors that differentiate the children in single-parent families who develop disturbances from those who do not. Understanding why family instability places some children at greater risk is essential in planning programs and policies to promote healthy children and families. This section briefly summarizes five perspectives on the possible pathways through which these effects are transmitted: economic hardship, loss of parental support and supervision, lack of community resources, parental conflict, and life stress and instability (Wisconsin Family Impact Seminars, 2018).

Parental separation has been linked to an increased likelihood of reporting psychological distress in adulthood, but relatively little is known about how this association may have changed over time. One hypothesis is that as the experience of separation has become more common, the association with psychological distress will reduce (the 'reduced effect' hypothesis). Previous evidence using the British birth cohorts does not support this hypothesis, but past studies have several limitations that we aim to address. A study by Bartley et al. (2019) showed little evidence to support the 'reduced effect' hypothesis: parental separation was associated with a similarly increased likelihood of reporting psychological distress in adulthood for men and women in both cohorts.

Living in a solo-parent family can disrupt the usual support systems and family dynamics. The absence of one or both parents or changes in custody arrangements can impact an individual's sense of belonging, identity, and emotional stability. These disruptions can contribute to the development or exacerbation of depressive symptoms even during adulthood. These mental health considerations and factors can affect a person's ability to thrive, leaving most individuals to choose mere survival rather than thriving. When someone or something is in "survival mode," the primary objective is to overcome immediate threats and ensure their basic survival. It involves a reactive and often short-term approach to navigating challenging situations.

Within this context, there is a subset of young professionals who not only navigate the complexities of a solo-parent family but have also managed to thrive in their personal and professional lives. Understanding the factors and mechanisms contributing to their thriving can provide valuable insights into how young professionals from solo-parent families can overcome challenges and achieve personal and professional fulfillment. Thriving goes beyond survival and encompasses a more holistic and proactive approach to life. It implies a state of flourishing, growth, and fulfillment. Thriving involves meeting the basic needs and actively pursuing personal development,

well-being, and success in various aspects of life. It includes physical, mental, and emotional well-being, pursuing meaningful relationships, achieving personal goals, and finding purpose and satisfaction. Thriving is about embracing challenges as opportunities for growth and consistently striving for progress.

Human thriving has attracted the interest of social and behavioral scientists for several decades. In the broader psychological literature, thriving is typically conceptualized as a dynamic adaptation process to physical, psychological, or social adversity, leading to positive outcomes such as personal growth and enhanced functioning. (Kleine et.al., 2019). Evolutionary psychology, though often not included in discussions on optimal human development, provides a framework that benefits considerations of human thriving. Humans exhibit a high degree of niche construction by altering their environment, affecting their offspring. Unique human capacities enable such niche construction, but these same capacities are then required to 'mind the gap' between human nature and the altered environmental niche. As such, thriving may be understood as the ability of the individual to navigate difficulties resulting from a mismatch between their nature and niche. (King, et al., 2018) While surviving focuses on immediate necessities and overcoming obstacles, thriving entails a broader perspective that encompasses personal growth, happiness, and fulfillment. Thriving individuals or systems often exhibit resilience, adaptability, and a proactive mindset in pursuing their goals and navigating life's challenges.

This research explored the experiences and perspectives of thriving young professionals raised in solo-parent families. By examining their stories, identifying the factors contributing to their success, and understanding their challenges, this study sheds light on the unique dynamics in their lives. Furthermore, it highlighted the potential implications of thriving for individuals who have grown up in solo-parent families, both in terms of their well-being and contribution to society. This study determined how these challenging experiences helped them thrive and become successful in their chosen paths. It also identified their coping mechanisms, mindset, and psychological stress responses during their journey toward achieving their goals and transcending the challenges met during their earlier years. The results of this study influenced the formulation of a new mindfulness-based intervention program for young professionals from solo-parent families of origin.

2.0 Methodology

2.1 Research Design

The study employed a phenomenological approach to analyze the participants' lived experiences. Phenomenology is a form of qualitative research that focuses on studying an individual's lived experiences within the world. The goal of phenomenology is to describe the meaning of this experience—both in terms of what was experienced and how it was experienced (Neubauer, 2019).

2.2 Research Participants

The participants were selected through purposive sampling, which refers to intentionally choosing participants based on their common characteristics, backgrounds, and experiences. The present study employed the participation of five thriving young professionals raised in solo-parent families. Young professionals from different fields of work and reasons for parental separation were asked to participate in the study. This helped to establish variation, including documentation of individual differences based on their lived experiences. The selected participants of the study were young professionals from solo-parent families, aged 25-35, born and raised in the Philippines, who grew up in a solo-parent family, specifically from permanently separated parents, and are thriving individuals. They have completed their bachelor's degree before entering their current work, are working under full-time jobs for at least five years, and hold supervisory positions in their respective careers. To identify if the participants are thriving individuals, they were asked first to accomplish the Flourishing Scale, a brief 8-item summary measure of the respondent's self-perceived success in critical areas such as relationships, self-esteem, purpose, and optimism. The Scale provided a single psychological well-being score. All the respondents obtained a score of 40-56, which implies they are qualified to become part of the final pool of participants.

2.3 Research Instrument

Conducting an interview was one tool for acquiring data in qualitative research; thus, it was the tool that was used to get the participants of the study to know their experiences. Interviews provided extensive information from individual participants and are especially useful for exploring sensitive matters that some may be hesitant to discuss in a group environment. It also discovered individuals' outlooks, experiences, principles, and inspiration

on specific topics. The researcher used The Flourishing Scale, a brief 8-item summary measure of the respondent's self-perceived success in critical areas such as relationships, self-esteem, purpose, and optimism. The Scale provided a single psychological well-being score, which gave the researcher a grasp of the participants' flourishing score. Afterward, the researcher constructed semi-structured interview guide questions to be used in the data gathering. Semi-structured interviews were given to the participants of this study to explore more of their stories and experiences. For the basis in creating the interview guide questions, research problems were useful to fulfill it. The questions were centered on "what goes on within" the participants, and they were asked to explain their lived experiences in a language that has as much freedom of intellectual and societal constraints as feasible. (See Appendix B for the interview guide questions). Three field experts validated the semi-structured interview questions to ensure the content validity of the questions.

2.4 Data Gathering Procedure and Analysis

Depending on the participants' preferences, interviews took place both virtually and face-to-face. The interview lasted 45-100 minutes, depending on whether the participant answered the questions. No one was allowed to enter the meeting while the session was ongoing except for the researcher and the participant to avoid hesitation during the interview. After the data has been gathered, data analysis follows using thematic analysis to examine classifications and identify recurring themes (patterns) in the data. The themes were obtained from the statements of the participants. Related statements were transcribed. Emerging concepts were drawn out from the transcriptions. Afterward, sub-categories and categories were obtained to develop the common themes among the participants' experiences. It also detailed the data and used interpretations to address the topic. After the analysis and interpretation of the qualitative data, the themes obtained were validated by the respondents based on their experiences, views of challenges, and ways they thrived.

2.5 Ethical Considerations

The researcher followed the ethical guidelines provided by the Philippine Guidance and Counseling Association and the University of Batangas, which resulted in observing ethical protocols. Before conducting the study, the researcher disclosed the nature and purpose of the study and respected norms and charters. Informed consent was given to and secured by the participants. They have the choice to withdraw from the study if they want to, and no participants will be forced to participate in the study. As was the data collection procedure, the interview process was explained to them comprehensively. Pseudonyms or code names were used for the participant's identity in line with anonymity and confidentiality. The respondents' identities were kept anonymous throughout the process, and all the details collected will be held strictly confidential. All the data were stored in a device or storage to maintain the privacy and safety of the information. The availability of the materials, such as the recordings and transcript of the interview, was restricted to the researcher. The researcher assured that the study would not harm the participants and did not ask questions beyond the scope of the study and research problem. Only matters relevant to the study were evaluated. Communication was clear and direct, and the use of appropriate and professional language was considered.

3.0 Results and Discussion

3.1 Experiences of the Participants

The experiences of thriving young professionals from solo-parent families encompassed unique challenges, opportunities, and dynamics that shaped their personal and professional lives. The themes obtained from their early experiences were financial struggles, lack of understanding regarding parental separation, parental abandonment, toxic family dynamics, and adverse emotions. The impact of their experiences manifested in their fearful-avoidant attachment style in their adulthood.

Financial Struggles

Solo-parent families often have limited support systems compared to two-parent households. This might mean fewer opportunities for sharing expenses, such as housing or utilities, making it even harder to manage finances effectively. A challenge faced by solo-parent families is usually the solo income of the parent left with their children. All participants experienced financial struggles, specifically getting support from other people and financial abandonment, since their parents separated.

One specific reason the respondents experienced financial struggle was because of the lack of child support after the separation. The respondents' financial struggles were significantly exacerbated by the non-custodial parent's lack of child support. Child support is typically intended to help cover the costs of raising a child and can provide much-needed financial support to the custodial parent. When this support is lacking, it can create additional challenges for the custodial parent and the children involved.

Most of the participants experienced getting economic support from other people. Four participants narrated stories of getting economic support from other people, including extended families and University professors. After their father left them, YP 5 stayed at their aunt's place since her mother also left her to work as a volunteer abroad. Around four months after the breakup, her mother left to volunteer in Africa. As a volunteer, she only gets allowances, which do not suffice for her basic needs and tuition fees. She relied heavily on monetary support from other family members, especially her aunt, who cared for her during these times.

"Yes, I experienced financial difficulty because it also came at a time when my mother had no job. My mother was working as a volunteer, so the salary in Africa was only an allowance. How much more can I get? So, I heavily relied on my mother's brother, who teaches at the school."

YP 1 experienced the same, and his grandmother also helped him, and his sister get financial support since his mother does not have a permanent job.

"My mother really supported me, with the help of my grandmother. They are the ones who helped my mother and my sister graduate. We can continue our studies with everyday expenses because my mother's work is not permanent but from client to client."

Another common experience is the financial abandonment of parent/s. Respondents narrated how they struggled because the father did not regularly support the children. YP 3 recalled how her mother often gets antagonistic feelings toward her father for failing to give her monthly allowance. Her father would send her a small amount from time to time. She would accept them, but the lack of monetary support from her father and having a single income to rely on led to the family's lack of financial resources.

"My father cannot provide for us; he is not the one who can send money regularly."

YP 1, on the other hand, had the same experience. He lost communication with his father, who does not give regular support.

"Afterward, my mother raised me as a single mom. Although there was communication with my father, it was not what you can say is consistent, especially with the financial support."

The respondents' financial struggles have roots in their poor family status, specifically the lack of economic resources and difficulty obtaining financial resources. For YP 2, his extended family in the province cannot support him because they heavily rely on their fishing occupation for their monetary needs. On days without a catch, they would struggle as a family regarding economic needs, but he reiterated that his extended family tried their best to support him in every way they could. He still expressed gratitude to his extended family for their help during his difficult times.

"My relatives cannot support me financially. In Mindoro, there is no means of living except when there are many fish to catch; only then will you make money. So, I cannot force them to support me. But they provide for my basic needs: food and transportation."

YP 2 also remembered how he experienced poverty at a very young age, as one of the poorest families in their barangay. They struggled financially and experienced a lack of economic resources. He narrated how he and his siblings experienced eating only two heavy meals a day instead of the regular three.

"Our family is one of the poorest in our barangay. By poorest, it means we can only eat twice a day."

YP 2 remembered difficulty obtaining financial resources while living in the province. After the separation, he stayed with his aunts and uncles, and his extended family could not financially support his education and activities. The only source of income was fishing, which is a seasonal business. Four out of five respondents experienced an early onset of responsibility due to their unique circumstances. They found themselves taking on additional financial burdens at an early age and assuming more mature roles within their families through fulfilling multiple tasks as a student, looking for multiple ways to earn money, and cultural expectations on the role of the eldest in the family. This early burden pushed them to step into a parental role, needing to provide economic support to their siblings or even their parents during challenging times. Some took on part-time jobs or contributed to the family expenses to alleviate the financial burden on their parents and siblings and support their needs and aspirations.

YP 2 fulfilled multiple tasks as a student. In addition to academics, he was also a school paper contributor and a student assistant. He regularly sold snacks to the University offices to provide for his boarding house, allowance, and other living expenses. He had to juggle multiple roles since he had no one to rely on and had to support himself to finish his studies.

"Then sometimes I go home at around ten o'clock because we are still working on articles. Then, my duty as Student Assistant (SA) is sometimes from 6:30 AM - 1:30 PM; my class will start right after, maybe until 8:30 PM, and then I will do articles for the school paper. Then I spend Saturdays and Sundays working for the teachers, giving massages, cleaning their houses, doing laundry, and ironing; what I earn from there, I save money to pay for the rent. After that, I also sold snacks for my additional allowance. So those are the many crying moments of being SA before."

YP 3 had an experience where she had to find three jobs in a day to provide for the family's needs, including her father's medical expenses. She looked for multiple ways to earn money, and she later became a full-time government employee, a part-time College instructor, and a radio disc jockey.

"That is why I had three jobs in a day. I worked in the government, taught at a university, and worked part-time at the radio station. There were months, or was it a year, when I had three jobs in one day because one of my main reasons was that I needed some extra income to support my family."

YP 1 took on freelance clients in addition to his full-time job as a physical therapist so he could send his younger sister to a good school. He wanted to provide for his sister the life he could not live as a child. As the eldest sibling, he was responsible for raising his sister and paying for her education.

"I had to take a full-time job and some part-time clients to earn more to provide my sister with a life not provided for me."

The resilience theory by Taormina (2018) excludes external factors in an individual's resilience, which is evident in how these participants thrived despite their financial struggles. They experienced various financial struggles, yet they could finish their education and sustain their lives.

Lack of Understanding Regarding Parental Separation

For the participants, the lack of understanding regarding parental separation was a huge experience that they had to bear during challenging times, and it had significant emotional and psychological impacts on them. The participants' lack of understanding regarding their parents' separation stemmed from their parents' lack of explanation. For all of them, no one properly explained the reason for the breakup. There was no proper transition, and they experienced high levels of stress at the abrupt change in their lives after their parents parted ways.

The lack of understanding regarding parental separation led to the respondents' confusion, emotional distress, and a range of challenges as they tried to make sense of their changing family dynamics. They struggled to comprehend the complexities of adult relationships from the lens of a child and the factors that contribute to their parents' separation. Their limited understanding gave rise to various misconceptions and created additional emotional burdens for them during this difficult time.

Four out of five respondents had a lack of understanding regarding their parents' failed marriages. YP 2 said no one explained the reason for the parent's separation. They were left out of the blue, and no one talked about the situation because, during those times, marital separation and infidelity were taboo and were avoided during conversations.

"It seems like we were left out of the blue. It is like we do not know anything. No one explained what happened either. At that time, in 2008, those things were taboo, and that is why we did not know."

YP 1 said that he almost did not feel the transition in the family since his father had been working abroad since he was a child. His parents did not explain the reason for the breakup. His mother was pregnant with his younger sister at the time of separation. He understood that when his father did not go home, he knew his parents were already separated.

"Then, it led to the point that they broke up. For example, my father was there one day, and the next day, he was gone. There was no proper explanation. For example, my parents talked to me that they were going to break up."

YP 4 knew the reason for the parental separation since it became public by then, but his parents never explained what would happen with the family. He had already seen the separation, but his father had left without saying goodbye. He left without any plans on how he could sustain them despite his father being the sole breadwinner of the family.

"My father just left us without an explanation. However, we expected them to separate because they always fight."

Meanwhile, YP 3 was left questioning most of her childhood. She did not understand that she came from a single-parent family while growing up. Nobody explained the family situation to her, and she was just stuck waiting for the day when her father would go back home, not knowing that her parents already decided to separate ways.

"Right after, there was nothing I did not understand. I think it was only when I got older that I understood that I came from a broken family."

Parental Abandonment

Parental abandonment following separation was a significant aspect of the lives of the respondents and had profound effects on their well-being and development. The absence of a parent was an emotionally challenging time for the respondents, disrupting the sense of security, stability, and routine they may have previously experienced. The respondents experienced parental abandonment through the lack of a father figure and falling apart in the family. Four participants experienced a lack of a father figure. YP 1 and YP 3 both struggled living with an absent father. YP 5 had to bear with a toxic family setup, while YP 2 lived a life with a loss of communication with his father.

YP 3 grew up without a father figure, even his uncles. She longed for one, especially during adolescence. When she had her first romantic relationship, she longed for a father who would protect her and give her advice when she needed it.

"I do not have a father figure. I did not experience the father who would look for me. Why are you not there at night? I do not have that; I was looking for that because I did not experience that. I looked for my father to advise me about love life, but there was no such thing."

Ho (2018) outlined the effect that a father's absence can have on child development, highlighting the importance of having a father figure and the negative ramifications that a father's absence can have. Associated effects include stability and behavioral problems, as well as social and emotional withdrawal.

YP 5 recalled when her mother did not allow her to communicate with her father. Being much older than her, her sister would make up stories so her mother would allow her to go with her sister, not knowing that they would meet their father.

"We only see each other when my sister runs away with me once or twice a year. My father's name differs on the phone, so they cannot know because I will be scolded."

One respondent experienced a loss of communication with their father. YP 2 said he did not remember his father reaching out after his parent's separation, nor did he try.

"I had no communication with my father after they separated."

The respondent finally rekindled communication with his father when he was employed near his father's residence.

Some respondents also experienced the family falling apart due to physical distance from family members. Due to conflicts brought on by the separation, they also experienced stress, breakdowns in communication or relationships, and physical separation, leading to a deterioration of the family unit. Parental separation occurs rarely without emotional distress to at least one member of the family. All five participants had to endure the falling apart of the family on top of the parental separation. YP 2 recalled one of the "darkest moments" of his life when, after the separation of his parents, he had to be physically separated from his mother and siblings.

Two respondents experience falling apart from the family through physical distance from family members. YP 2 remembered physical separation from mother and siblings. After their parents separated, his mother suffered from a mental illness that incapacitated her to support her children. His extended family decided to take one child each since no one could support all five siblings.

"Our relatives decided to separate us as siblings. So I was there with one of my aunts, and my other siblings were with other aunts."

After YP 5's parents' breakup, her sister stayed with her father while her brother had to own a family by then. Her mother left her to stay with her aunt to work as a volunteer abroad 3-4 months after the separation. Maybe a good 3 or 4 months, and then she left for Africa as a volunteer. Our relationship did not strengthen after the separation; she left to volunteer. She recalled experiencing the trauma of being abandoned while many things happened at the same time. The separation, her mother leaving, and her living with the extended family she barely knew was too much for her to bear, causing her emotional distress because of the separation of the family members from her parents and siblings. Falling apart from the family also hindered regular communication and limited the quality and depth of interactions among family members, leading them towards psychological distress during times of struggle. The abandonment is falling apart pointed out significant implications for their relationships and overall well-being. Although a study by Jackson (2017) about the impact of parental divorce showed that the results indicate that the quality of social support had a significantly positive relationship with career expectations and romantic relationship confidence, the participants somehow found quality relationships even amidst the antagonistic relationships within the family.

Toxic Family Dynamics

Toxic family dynamics can exist in various families, including solo-parent families. When the respondents' respective families experienced a breakdown or separation, it contributed to additional challenges and complexities in the family dynamic. The respondents experienced toxic fathers and toxic interactions with family members. Some respondents recalled having to deal with their toxic fathers, mostly due to the vices of the parents who left, both before and after the separation. For most of them, their father became the precipitation of their parents' separation.

YP 4's father was involved in many toxic vices. The toxic vices of the parents who left included alcohol, gambling, and women. During the interview, YP 4 said that he was not comfortable talking about his father and that he still possesses ill feelings toward him. He remembered his father as someone with many vices, including women, gambling, and alcohol, which burdened the family physically and emotionally.

"My father is a womanizer; he gambles, and then he usually goes out with his friends; he seems to put his friends before his family, and then he is a drunkard, and even though he does not hurt us children, he hurts my mother physically and emotionally."

YP 3 narrated how his father was involved in gambling during her childhood. She did not understand the gravity of the situation back then, but she recalled a certain instance when she had to fetch his father from the gambling area as a child. She also witnessed how his father learned to drink alcohol more than a decade after the separation, which made her feel ashamed of her father.

"Then, I was an only child, and in my recall of my story, I was four years old when they separated from the house; my daddy was the one who left because, at that time, he was addicted to gambling. Then, while Daddy was in Ilijan, apart from everyone else, he also liked to drink, which is typical of those in rural areas."

Three respondents remembered experiencing a toxic interaction due to a conflicted relationship with family, which manifested in the harmful interaction between family members, both from immediate and extended families. YP 2 narrated a relationship conflict with their aunt when he goes home late. While he was a student assistant during college, he was also part of the school publication. With all his duties, he normally goes home late at night, and with this, he had a conflict with his aunt, leading him to decide to take the challenging risk of renting his room.

YP 4 also remembered a conflicted relationship with extended families after the father committed infidelity with the participant's aunt. After the revelation that his father had a relationship with his mother's sister-in-law, what used to be a happy and tightly-knit family relationship was broken. He felt lonely because his cousins, who used to be his closest friends, became estranged after what happened with their mother and the respondent's father. He acknowledged that his cousins were not the ones to blame, but they felt strong negative emotions and shame from what their parents did, so they had to separate ways. His cousins left their compound to find a new residence.

"He is my cousin. I am quite close to him because he is my age, so we are very close. But after it happened, we did not expect my father and aunt to do that, so our family was broken. So we had no communication; we separated, and they went elsewhere."

YP 5 recalled her life after the separation when, after three months, her mother had to leave the country to volunteer in Africa. She felt abandoned when she was left to her aunt to be taken care of. She found it difficult to adjust to the situation, much less to adjust to the new people in her life. During this time, she had difficulty adjusting when left with the extended family, from being the pampered youngest sister to someone who needed to adjust to a different family with a different culture.

"So when I moved in with my aunt, that was my struggle because they always scolded me, and my cousins always fought with me because I did not behave at home; it was like my aunt who seemed to be my guardian; maybe she was also protecting me because it seemed like she knows I do not know how to do the chores. It is like I do not know what I am going to do. Suddenly, my mom left like that, and then you do not want to be there with my dad, so I asked myself, what would I do?"

Adverse Emotions

The respondents experienced adverse emotions while they were growing up. These emotions became a negative defense mechanism during their struggles, and, as a result, they mourned the absence of the nurturing and stable family environment they desired or experienced before the separation. Adverse emotions refer to negative or unpleasant feelings and emotional states that had a detrimental impact on the respondents' well-being manifested through their adult relationships. The participants manifested negative defense mechanisms.

Defense mechanisms are psychological strategies people use to cope with or protect themselves from uncomfortable or distressing emotions, thoughts, or situations. While some defense mechanisms can be adaptive and helpful, others can be considered negative or maladaptive because they may ultimately lead to more significant psychological issues or hinder personal growth. Some respondents noted using negative defense

mechanisms to cope with their challenges. Specifically, the respondents experienced long-term denial, envy, and resentment before accepting the situation.

YP 1 narrated that she was in a long-term denial before accepting the situation stage for a long time, and she was only able to accept the reality of being raised in a solo-parent family when his father got sick. Then, she decided to stop questioning when he would have a father.

"When my father got sick, that is when I accepted that I came from a broken family."

YP 4 manifested latent feelings of envy in his statement that being envious of others did not help him cope with the challenges.

"I also value being contented because envy of others will only cause harm."

Meanwhile, YP 1 showed resentment towards his father growing up due to their conflicted relationship since he was a child. YP 1 narrated how he had an adverse relationship with his father as a child because of his harsh ways when he disciplines.

"My relationship with my father growing up was not okay."

The disruption in the respondents' family dynamics evoked feelings of loss and longing. They experienced a variety of adverse emotions, which led them to experience emotional distress. There may be various effects of divorce on children. According to Eyo (2018), some effects of parental separation on children might be problems of adjustment, psychological problems, becoming objects of abuse by parents/teachers, hatred towards one parent, lack of balance training, and being prone to social problems.

3.2 Impact of the Experiences in Adulthood

The respondents' experiences in childhood through adolescence from solo-parent families had lasting impacts on individuals as they transitioned into adulthood and established their relationships.

Fearful-avoidant Attachment Style

The fearful-avoidant attachment style, also known as the disorganized attachment style, is one of the four main attachment styles identified in attachment theory. The respondents exhibited various fearful-avoidant attachment styles manifested in their negative relationship behaviors because of their upbringing and the dynamics they experienced. The respondents admitted to negative relationship behaviors that manifested during their adulthood, specifically difficulty establishing relationships, need for validation and need for belongingness. Negative relationship behaviors are actions and patterns that can be harmful. The results of Zhiyuan et al.'s (2022) study supported this, finding that positive experiences buffer the effects of adverse experiences.

YP 1 had difficulty establishing relationships due to the emotional distress brought on by his father's wrongdoings. He often tends to distrust the genuineness of other people's behavior toward him, leading to difficulty forming relationships. This was supported by a study by Lacey et al. (2020), which stressed that disentangled the mechanisms between parental separation in childhood and adult psychological distress.

YP 5 narrated that she needs validation and is constantly trying to prove herself. Over the years, she became an overachiever because she wanted others to see her as someone who should not be looked down upon.

"I constantly desire to prove that I can do it; I must be on top of situations."

YP 5 stated that she has a high need for belongingness, which she found with her friends. She looks for love in her friends and their family. This also led her to get married very early, at 19, right after graduation. She wanted to "belong" and establish her identity by having her own family. However, she admitted that it was more difficult than it seems. It led to the eventual failure of her marriage. Her hesitation to tell more about her marriage was evident during the interview.

"As someone coming from a solo-parent family, I observed myself clinging to whatever validation in love and belongingness I wanted in my family. I clung to my friends, so during those moments, my friends seemed to fill me. That is why I am big on friendship."

The abovementioned findings were supported by Liang et al.'s (2020) study about adult attachment. Their attachment anxiety and attachment avoidance were also remarkably higher. The findings suggest that left-behind experiences impaired the development of the emotional-motivation system of left-behind experiences in childhood but facilitated the development of their survival-protection system.

3.3 Participants' Views on Their Challenges

Positive Perspective

All the participants saw a positive perspective, specifically feelings of gratitude, forgiveness, and hope for their situation despite the challenges they experienced. The lives of the respondents were not without challenges, yet despite the hardships, they chose to have a positive perspective, looking at and interpreting the world that focuses on the bright side of things, emphasizes the potential for growth and improvement, and seeks to find solutions and opportunities even in challenging situations.

Gratitude, the practice of recognizing and appreciating the positive aspects of life and acknowledging the kindness and support of others, was evident in YP 1 and 4 based on how they expressed their feelings of thankfulness.

YP 4 is full of inspiration due to his brother's sacrifices for the family, and he used gratitude to fuel his motivation to do well in life.

"I felt at that time that painting in construction would be my job until I grew old, but maybe my brother had a dream in life. His dream was not only for himself but also for his family. So what he wants is to get out of trouble; what he wants is to sympathize with us."

Furthermore, he is also thankful for the challenges and what he has achieved so far. He reiterated that he never even asked for anything but was blessed with so much more than what he had worked for.

"But I also feel thankful for where we are now. It is like we've overcome all the trials, and then I'm thankful that I didn't really ask for it, I didn't even pray for it, but it was given to us."

Looking back at his experiences, YP 1 cannot help but feel appreciation towards his mother because he was able to nurture a good relationship with her, and he was very grateful for his mother's efforts to raise him and his sister.

"Maybe I just appreciated my mother more because I got closer to her growing up."

The respondents showed conscious and deliberate decisions to release resentment, anger, or a desire for revenge toward the parent who has hurt them, regardless of whether the person deserves their forgiveness. Two participants also found forgiveness in them despite their parents' wrongdoings. One respondent developed a lack of resentment toward their father, while one was able to nurture feelings of acceptance.

YP 1 has been an active member of the Catholic Church's charism. Since going to church often, he developed a lack of resentment towards his father. His father might not have asked for forgiveness, but he gave it because he wanted to let go of the emotional baggage caused by his father's wrongdoings.

"I only had forgiveness for my father recently when I became active in the church. That showed me that he is not the one who is struggling with my decision not to forgive him but me because I carry it with me, that I have emotional baggage to carry because I can finally let go when I give myself the forgiveness that my father did not ask for."

Acceptance was also evident in the respondents, who acknowledged and embraced their reality, including their thoughts, feelings, circumstances, and the actions of others. YP 3 recalled that a major life event (sickness) led to her acceptance of the situation. After years of longing for a complete family, she finally accepted that she was indeed raised from a solo-parent family.

"When he got sick, it was like a turning point for me, and I said this is the time to stop questioning when he will be my father."

YP 2 and 5 also shared how they have hope for the future in the middle of the challenges. They believe that things can get better and that there are opportunities for improvement and positive change, paving the way for them to never stop reaching for their goals. For YP 5, this hope for the future kept her going. She recognizes that this hope is not toxic optimism. Rather, she knows that everything is going to be fine. She attributes it to being raised as a devout Catholic.

"It's not toxic optimism. I know that this is not the end. If I'm struggling now, this is not it; there's always another path that I'll be okay on, and everything will be okay."

During his statements, YP 2 expressed his hope to understand what happened in the family. This was because he only knew about what happened through hearsay when he was a young boy. No one in the family was able to explain to him the reason behind his parents' separation.

"I thought to myself, at the end of the tunnel, maybe there is a light that can explain what really happened."

In connection with the Adult Resilience Theory of Taormina (2018), the participants showed resilience despite challenging times, setting aside external factors. Maintaining a positive perspective involves cultivating positive thinking, which includes acknowledging and appreciating the good things in life, practicing gratitude, and reframing negative situations or setbacks as opportunities for growth and learning. It does not mean ignoring or denying the existence of challenges or difficulties but rather choosing to approach them with a hopeful and proactive mindset.

Motivation

Motivation is one of the evident themes in the views of the challenges expressed by the participants manifested through their grit. The respondents viewed their challenges as motivation to strive and create opportunities. The motivation to break the cycle of dysfunction and create a different narrative is strong. They are determined not to repeat the negative patterns they witnessed in their own family and, instead, actively work towards building healthier relationships and environments and a more comfortable life for their family.

The respondents' statements revealed grit. They possess a motivation to have a better life in the future and perseverance, particularly in achieving long-term goals. They can sustain effort and interest in a goal over an extended period, even in the face of difficulties, setbacks, and failures. One guiding principle for the success of people with traumatic childhood experiences is Duckworth's (2016) theory on grit. Grit is defined as the passion and sustained persistence applied toward long-term achievement, with no particular concern for rewards or recognition along the way. According to the author, grit is the greatest predictor of life achievement.

Common among four out of five respondents is the grit manifested through their motivation to have a better life in the future. YP 2 remembers his parents and how they were somehow stuck in poverty. He wanted to be the one to take the family out of poverty.

"My parents didn't work hard for us, so I want to step up so that the next generation after me will not have to suffer and will have a good life."

YP 1 reiterated his determination never to experience a lack of financial resources again. He wanted to provide for his mother and sister and secure a better life for his future family.

"I have not been able to get rid of what I have been carrying with me until now: I am afraid of being without anything financial-wise because I know the feeling of struggling. So it seems that until now, I have carried that with me that I do not want to experience, and I do not want to experience that with my future family. The future, so maybe I made too much of a way to work to earn money because I went through that as a kid growing up."

He also remembered telling himself as a child that he planned to help the family have a better life in the future. He wanted to give back to his mother for all her sacrifices and provide a comfortable life for her sister.

"I'm still young, and I don't really have any plans for that, although my father was no longer with me when I was growing up; my plans are how I can comfort him and how I can help him afterward."

Perseverance was evident in the statements of YP 2 and 4. YP 2 acknowledged that his parents were not able to provide well for their family. He belonged to a family that experienced poverty for several generations, and he was the one who stood up to become the person to lift the family from poverty.

"My parents didn't work hard for us, and that's why I want to step up so that the next generation after me will have a good life and not have to suffer."

YP 2 said that his experiences did not affect his dreams of having a better future. He established concrete plans on how to achieve his goals. He said reaching his dreams was just harder, but he knew he would make it.

"To me, his separation no longer affects my future plans because, before their separation, I had a plan ahead."

YP 4, on the other hand, continued to strive despite the apprehensions, especially because he was older than most of his classmates. He recalled that others would always ask him if he was studying, and he would deny it because he was too ashamed. But he also came to a point where he just continued working towards his dream.

"I do not pay attention to others anymore, and then I say in my mind that I am already here, so I will study and not think about what other people are saying anymore, even though I am quite old. I also really regret the money my older brother spends on my education."

All participants had the strong grit to rise above the challenges they faced growing up as individuals from solo-parent families. They developed a strong determination and perseverance to overcome the difficulties they encountered during their upbringing.

3.4 How the Participants Thrived Despite Being Raised in a Solo-Parent Family

The respondents thrived by drawing upon their unique experiences and strengths. This quality continued to serve them well as young professionals, enabling them to overcome challenges and persevere in adversity. The themes of how the young professionals thrived despite belonging to a solo-parent family were faith, flourishing, grit, and external validation.

Faith

Three participants, YP 3, 4, and 5, experienced extreme circumstances, even considering they came from a solo-parent family. They believed that faith in God brought them to where they were. The participants showed a deeply personal and profound belief in the existence and presence of a divine or higher power. Their beliefs have significantly impacted the respondents' views, values, and choices. Their faith in God helped them thrive as individuals and helped them get through the challenges. They stated their belief in God, constant prayer, and joining religious organizations, and they believed that these were instrumental in how they thrived despite being raised in solo-parent families.

YP 5 remembers the moments when she had to seek the help of prayer to get through and hope for a better future while working on it.

"Well, apart from my deep faith, I would always pray. Prayers are what help me."

YP 4 said that the belief that God will never forsake him and that there is a reason behind everything was a huge help during trying times. YP 4 said that whenever he prays, he thanks the Lord for the smallest to the biggest blessings he receives.

"I am talking to God. I am thankful even for the little things because God is generous. He will not abandon you; there is a reason why that happened to us, too."

Meanwhile, YP 3 narrated that her mother encouraged her to join faith-based affiliations, which gave her a deeper understanding of her life. At first, she did not understand why her mother imposed this, but later on, she was grateful because this might have been her mother's way of filling in the void of her growing up without a father figure. She also attributed her close relationship with God to the faith instilled in the Catholic institution where she studied.

"I became a member of Singles for Christ because that is what my mom wanted. Even as a child, she asked me to join the young people who danced in front of the church. "

YP 4 further stated how the family exemplified belief in God and was able to cling to the hope for better days. They also stated that God is behind everything that is happening. Despite the circumstances that are not ideal, they accepted and believed that God had something better in store for the family.

"So we accepted it and thought that God had perfect timing for us."

Ultimately, these young professionals turned to their faith as a source of solace, guidance, and hope. They found strength in their religious community, prayer, scripture, or religious practices.

Positive Mindset

Despite being raised in solo-parent families, the respondents maintained a positive mindset. Their mental attitude was characterized by optimism, hope, and a focus on constructive thinking. They cultivated a perspective that looked for good in situations and approached challenges with resilience and a belief in their ability to overcome them. Kindness, gratitude, optimism, and humility were evident from their statements.

The respondents were able to show kindness through acts of goodwill and the intention to positively impact the well-being of others. YP 3 believed that one should be kind even if others do not do the same. She believed that kindness is fundamental for a person to succeed because her mother instilled that you need other people to help you achieve your goals.

"Be kind, and you will be good even if others are not kind to you."

Flourishing results from the pursuit and engagement of an authentic life that brings inner joy and happiness through meeting goals. Participants could embrace their reality, live through self-acceptance, and feel thankful for how their challenges shaped their mindset. YP 4 expressed his gratitude for what he has achieved in life and what he needs to experience. He said he sees himself as someone always thankful, no matter what life throws at him.

"Always be thankful, even if the blessing is big or small. If, for example, you pass the exam or have a salary, no matter how much, even if it is small, it is still a blessing. It is not luck; it is not unlucky. So, for me, it is a blessing, even small."

The respondents also attributed their thriving to nurturing optimism despite the challenges. They believed the future would improve, leading to hopefulness, positive emotions, and a proactive approach to challenges.

Despite experiencing many hardships, he even compared his life story to the stories featured in a famous television series entitled "Maalaala Mo Kaya," he is very optimistic and has high feelings of hopefulness. When he finds everything difficult, instead of complaining, he tells himself that what he is experiencing will eventually pass and is only temporary. During University, he was willing to suffer for five years (to obtain his degree) in return for a good future.

"As I said before, it is only five years. I will persevere for five years. But the result is not just five years, not just ten years, not just fifteen years in the future."

The respondents were able to cultivate a value of humility, which was shown through modest and unassuming views of oneself, an acknowledgment of one's limitations and imperfections, and a willingness to learn from others. YP 3 and 4 exemplified feelings of humility, evident in their statements during the interview. YP 3 was thankful because she experienced studying at a public school in elementary school. According to her, it helped her stay grounded in the realities of life.

"I am thankful that I attended elementary school in a public school and learned the realities of life there."

YP 4 reiterated how humility helped him stay humble despite his professional achievements.

"Just be humble. No matter what you achieve, you should still be humble."

The study's findings parallel Tessy et al. 's (2022) study on the forgiveness, gratitude, and flourishing of emerging adults with divorced parents. Findings suggest that forgiveness and gratitude can predict flourishing in emerging adults whose parents are divorced; in this case, the role of gratitude is greater than forgiveness. Interventions that combine the basis of forgiveness and gratitude can be used to optimize the flourishing of such emerging adults whose parents are divorced.

Grit

Grit was defined as the passion and sustained persistence applied toward long-term achievement, with no particular concern for rewards or recognition. According to the author, grit is the greatest predictor of life achievement. (Duckworth, 2016) Analysis of the respondents' statements gleaned perseverance, conscientiousness, courage, and resilience.

All five participants' statements contained grit. Four recalled how they persevered by striving for educational attainment instead of giving up. They strive for educational attainment to achieve their goals. YP 3 has an innate love for learning, which she feels is helpful as she achieves her goals.

"I have always loved to learn and gain knowledge, so whenever there are opportunities to learn, my mother has been supportive from then until now. "

YP 2 stated that he had to instill discipline to get to where he is now. He combined discipline with educational attainment to elevate himself.

"So, I will use my degree and my skills. I will say, "I am going to use this as an edge to elevate." You will use not only your brain but also your discipline."

YP 1 said he was tempted to throw his whole future when he experienced the hardships. However, he chose to stay motivated and learned the importance of education in achieving his goals.

"I could have thrown my whole future away just by not studying, but I chose to study."

YP 4 used to feel ashamed while studying in college because he was already older than his classmates. After he obtained his degree, he felt pride in his educational achievement.

"It is like my shame was replaced, and my mother became proud because, compared to others, she thought we had no hope of finishing school."

Their statements were conscientious. They demonstrated this through high organization, self-discipline, dependability, and goal-oriented behavior. The respondents felt that it was not enough that they were skilled in their crafts. YP 2, 3, and 4 tackled how they met the challenges through conscientiousness by cultivating useful self-help skills in their journey. They took time to enhance their self-help skills, like good work ethics, giving their best efforts, and time management skills. YP 2 said he used his time management skills from being a student assistant as one of his ladders to his success.

"So before, even if I was a student assistant, even if I did school papers, even if I was a vendor, I managed my time well."

YP 4, on the other hand, noted that he ensures that the job is done with 100% effort. He said he is generally a "go-with-the-flow" person, but when tasks are given to him, he gives them his best effort.

"I go with the flow, which is all for me, but I give my all to achieve something."

Further, YP 3 discussed how her mother taught her a good work ethic that she still applies today, especially in her job as a government employee.

"Then, my mother taught me integrity at work because being ethical is important."

The respondents experienced courage, manifested through confronting fear, pain, danger, uncertainty, or other forms of adversity despite feeling afraid or threatened. They showed courage by nurturing feelings of inspiration and motivation. YP 2 and 4 draw inspiration and motivation from the courage they witnessed from other people. YP 2 recalled watching inspiring stories on a television show that featured stories of people from rags to riches and how he wished to be that person one day. This helped him fuel his dreams and make them goals he had to accomplish.

"I look up too many people. I also read and watch a lot, especially MMK (Maalaala Mo Kaya). I like to watch MMK, ma'am, especially those who have gone from scratch or garbage to success."

Another value that helped the respondents is resilience, or the ability to bounce back from difficulties. They could withstand and cope with difficult situations, stress, and challenges. Two respondents reiterated how resilience helped them thrive. YP 5 stated that she gains a sense of fulfillment by taking control of the things thrown at her. After her father chose his secretary over his family, she felt a huge emotional burden. She said she formed the attitude of being on top of situations because of so many events in her life that she had no control over. From then on, she felt like she had to take control of her life despite what others said.

"It is like you have an additional burden because you are like, ahh, maybe he cheated, or maybe it is because of his parents, but I am focused on what I want. It is like I am always on top of the situation."

YPs 2 and 5 also focused on building a resilient attitude. YP 5 further stated that she built her resilience by handling the hardships as best she could.

"The building of my resilience. A resilient attitude means that you can handle hardships because you have been through a lot."

YP 2 recalled how he continued to strive despite antagonistic attitudes from others. He told stories about his experiences during college when he had to sell snacks to earn money for living expenses. People mocked him, saying he smelled like vinegar, but he continued his journey.

"I said to myself, why are people treating me like this? But I said to myself, I will still go on. "

Thomas & Otis (2010), as rewritten by Ferreria, et al. (2021), defined resilience as the competence to cope and adapt in the face of adversity and to bounce back when stressors become overwhelming is considered a significant protective factor against instances of compassion fatigue, and burnout and mental and physical illness. Having grit to pursue their dreams was instrumental in helping these thriving young professionals from solo-parent families cope with the emotional impact of their childhood experiences and build a foundation for a successful and fulfilling life. They have a long-term perspective, set goals, and work persistently toward achieving them, even in the face of obstacles or setbacks. They understood that setbacks are a natural part of life and used them as opportunities for learning and growth. This mindset can help individuals from broken families navigate relationships, self-esteem, and emotional well-being challenges.

4.0 Conclusion

This research delved deep into the experiences of thriving young professionals raised in solo-parent families. The study has striven to address the fundamental questions and objectives set forth at the outset through meticulous data gathering, comprehensive thematic analysis, and rigorous interpretation. As the final piece of the research paper, this section encapsulates the concepts gleaned from the experiences. The participants can thrive despite being raised in solo-parent families. Before they thrived, they experienced numerous challenges due to their family situation. It was shown that the participants viewed their challenges from a positive perspective and through motivation. The thriving young professionals from solo-parent families thrived despite the circumstances because of faith, grit, and a positive mindset.

5.0 Contributions of Authors

Giselle Ann E. Manansala - conceptualizing, writing, encoding, analysis, interpretation, revision
Gladiola A. Eje-Dimaculangan - advising and supervising

6.0 Funding

This research was partially funded by the Philippines Guidance and Counseling Association, Inc.

7.0 Conflict of Interests

Authors have no conflict of interest to declare.

8.0 Acknowledgment

The researchers would like to extend their warmest gratitude to the following individuals and agencies who made this work possible: the validators, panel members for their expert commentaries, research participants for their invaluable contributions, and the University of Batangas Graduate School.

9.0 References

- Brown, D. J., Arnold, R., Fletcher, D., & Standage, M. (2017). Human thriving: A conceptual debate and literature review. *European Psychologist*, 22(3), 167–179. <https://doi.org/10.1027/1016-9040/a000294>
- Chen, D., Youngblade, L., Farinas, J., & Peila-Shuster, J. (2017). Effects of parental separation on the resilience of children who have experienced trauma. <https://hdl.handle.net/10217/184026>
- Eyo, U. E. (2018). Divorce: Causes and effects on children. *Asian Journal of Humanities and Social Studies*, 6(5). <https://doi.org/10.24203/ajhss.v6i5.5315>
- Ferreira, M., Marques, A., & Gomes, P. V. (2021). Individual resilience interventions: A systematic review in adult population samples over the last decade. *International Journal of Environmental Research and Public Health*, 18(14), 7564. <https://doi.org/10.3390/ijerph18147564>
- Ho, S. (2020). *Father Absence and Young Adult Romantic Relationship Ideals*. Emory Theses and Dissertations, Emory University.
- Holly, H., & Maytan, M. (2019). *Mindfulness for the Next Generation*. Oxford University Press.
- Jackson, L. J., & Fife, S. T. (2018). The impact of parental divorce: The relationship between social support and confidence levels in young adults. *Journal of Divorce & Remarriage*, 59(2), 123–140. <https://doi.org/10.1080/10502556.2017.1402652>
- Jakobsen, I. S., Madsen, L. M. R., Mau, M., Hjemdal, O., & Friberg, O. (2020). The relationship between resilience and loneliness elucidated by a Danish version of the resilience scale for adults. *BMC Psychology*, 8(1), 131. <https://doi.org/10.1186/s40359-020-00493-3>
- King, P. E., Barrett, J. L., Greenway, T. S., Schnitker, S. A., & Furrow, J. L. (2018). Mind the gap: Evolutionary psychological perspectives on human thriving. *The Journal of Positive Psychology*, 13(4), 336–345. <https://doi.org/10.1080/17439760.2017.1291855>
- Ivtzan, I., Young, T., Lee, H. C., Lomas, T., Daukantaitė, D., & Kjell, O. N. E. (2018). Mindfulness based flourishing program: A cross-cultural study of hong kong chinese and british participants. *Journal of Happiness Studies*, 19(8), 2205–2223. <https://doi.org/10.1007/s10902-017-9919-1>
- Loehr, J. (2012). *The Only Way to Win*. Hyperion.
- Milam, S. R. B., & Schmidt, C. K. (2018). A mixed methods investigation of posttraumatic growth in young adults following parental divorce. *The Family Journal*, 26(2), 156–165. <https://doi.org/10.1177/1066480718781518>
- Neubauer, B. E., Witkop, C. T., & Varpio, L. (2019). How phenomenology can help us learn from the experiences of others. *Perspectives on Medical Education*, 8(2), 90–97. <https://doi.org/10.1007/s40037-019-0509-2>
- Arıcı Özcan, N., & Şahin, S. (2021). The effectiveness of mindfulness based thriving program on level of mindfulness and thriving (Eng). *Journal of Clinical Psychiatry*, 24(3), 324–333. <https://doi.org/10.5505/kpd.2021.65037>
- Rogers, H., & Maytan, M. (2019). *Mindfulness for the Next Generation: Helping Emerging Adults Manage Stress and Live Healthier Lives*. Oxford University Press.
- Taormina, R. J. (2018). Adult Personal Resilience: A New Theory, New Measure, and Practical Implications. *Psychological Thought*, 8(1), 35–46. <https://doi.org/10.5964/psyc.v8i1.126>
- Tessy, N. R. B., Setiasih, S., & Nanik, N. (2022). Forgiveness, gratitude, and the flourishing of emerging adults with divorced parents. *Psikohumaniora: Jurnal Penelitian Psikologi*, 7(1), 77–90. <https://doi.org/10.21580/pjpp.v7i1.10606>
- Wajim, J. (2020). Single parenting and its effects on the development of children in nigeria. *The International Journal of Social Sciences and Humanities Invention*, 7(04), 5891–5902. <https://doi.org/10.18535/ijsshi/v7i04.02>
- Wolchik, S. A., Schenck, C. E., & Sandler, I. N. (2009). Promoting resilience in youth from divorced families: Lessons learned from experimental trials of the new beginnings program. *Journal of Personality*, 77(6), 1833–1868. <https://doi.org/10.1111/j.1467-6494.2009.00602.x>
- Woodward, K. P., Yu, Z., Chen, W., Chen, T., Jackson, D. B., Powell, T. W., & Wang, L. (2023). Childhood bereavement, adverse and positive childhood experiences, and flourishing among chinese young adults. *International Journal of Environmental Research and Public Health*, 20(5), 4631. <https://doi.org/10.3390/ijerph20054631>
- Yu, Z., Wang, L., Chen, W., Zhang, J., & Bettencourt, A. F. (2022). Positive childhood experiences associate with adult flourishing amidst adversity: A cross sectional survey study with a national sample of young adults. *International Journal of Environmental Research and Public Health*, 19(22), 14956. <https://doi.org/10.3390/ijerph192214956>

The Kandings: A Study on Sex for Drugs in Iligan City

Jovell Nicole S. Along*, Renebel O. Labadisos

Mindanao State University-Iligan Institute of Technology, Iligan City, Philippines

*Corresponding Author Email: jovellnicole.along@g.msuiit.edu.ph

Date received: June 18, 2024

Date revised: July 16, 2024

Date accepted: July 20, 2024

Originality: 95%

Grammarly Score: 99%

Similarity: 5%

Recommended citation:

Along, J.N., & Labadisos, R. (2024). The *Kandings*: A study on sex for drugs in Iligan City. *Journal of Interdisciplinary Perspectives*, 2(8), 598-611. <https://doi.org/10.69569/jip.2024.0290>

Abstract. Drug addiction in the Philippines is still rampant and widely perceived to be the root of poverty, injustice, and powerlessness (Simbulan et al., 2019). This phenomenon gave rise to a multifaceted, overlapping problem. One of these issues is the practice of exchanging sex for drugs, which led to the emergence of Kandings. This study dwells on the case of Iligan City. Drawing concepts from the social exchange theory of George Homans and utilizing a qualitative case study, ten key informants were interviewed through snowball sampling, aged 16 and older. Findings shed light on the origins of the term Kanding as perceived by the informants, a term they believed had its roots primarily in the existence of illegal drug trading in Iligan City. Moreover, the informants represent a disadvantaged group with limited resources, which explains the reasons they manifest experiences as reflected in the typologies of Kanding, mainly the sex for drugs Kanding, the Kanding as an intimate partner, the Kanding as a sex worker, and the Kanding for self-gratification. Despite challenges, including stigma, unresolved transactions, and the acquisition of sexually transmitted infections, they engage in this behavior to obtain access to illegal drugs and earn money with drug users as their typical sexual partners. However, the informants maintained their optimism, wanting the best for their families, their children's success, and their strong faith in God to support them in overcoming these challenges.

Keywords: Drug use; Sex work; Social exchange; Kanding.

1.0 Introduction

Substance use is an age-old problem, with addictions such as alcohol and illicit drugs affecting approximately 2% of the global population (Ritchie et al., 2022). The same data shows that substance use is indirectly and directly responsible for 11.8 million deaths each year. In East and Southeast Asia, the drug supply is continuously expanding, with methamphetamine, ketamine, and other synthetic drugs produced. Most of the countries in the said regions reported an increase in drug seizures, except for Hong Kong (United Nations Office on Drugs and Crimes [UNODC], 2023).

The Philippines, a country in Southeast Asia, also contends with decades of drug problems. Crystal methamphetamine, which is still the country's primary substance of concern, was linked to the bulk of drug-related arrests and treatment admissions, according to a report published by the United Nations Office of Drugs and Crimes (UNODC) in 2023. However, the intensified anti-drug war campaign as a deterrent to crime by the government of former President Rodrigo Duterte from 2016 to 2022 resulted in the deaths of over 12,000 Filipinos (Human Rights Watch [HRW], n.d.).

Simbulan et al. (2019) assert that the complex nature of the drug problem stems from the systemic causes of poverty, injustices, and powerlessness experienced by the Filipino people. The widespread drug problem in the Philippines gave rise to a multifaceted, overlapping problem. One of these is sex in exchange for drugs, which is the primary concern of this study. Sex workers, also known as prostitutes, who were usually women, faced a

shared threat from the imposition of the drug war in the country. The Philippine Commission on Women estimates that there are 500,000 sex workers in the country, many of whom were drawn in and taken advantage of by criminal groups. Out of the 500,000 projected sex workers in the nation, 100,000 are minors (Modino, 2010).

In this connection, Lasco (2017) carried out a local study that examined the relationship between drug use and sex work and how it affected the day-to-day lives of young men. These young men sell refreshments as a front for the informal economy in a port in the Philippines. They believed that making money by selling their bodies was more profitable and that engaging in sex work did not diminish their masculinity with the help of drugs. In addition to improving performance, drugs can give them more confidence when used for sex work. Another local study conducted by Urada et al. (2014) focused on the prevalence of sex work in female bars and spas in the Philippines with the association of substance use, specifically alcohol and *shabu* use with clients. These female employees' experiences of sexual abuse, youth, and lack of higher education were some of the factors that led to these engagements. However, the individuals' participation in sex work increased their chance of contracting HIV and other sexually transmitted diseases, according to both local investigations. Not only local but also international studies have proven the emergence of this phenomenon. Baseman et al. (1999) developed a study by describing the underground economy that existed between two Houston areas where the trade of sex for drugs or money was prevalent. In this study, the participants exchanged services for personal satisfaction, which in turn led to the spread of sexually transmitted diseases (STDs).

Numerous research studies have employed quantitative methods to investigate the phenomenon of drug usage and sexual exchange. However, additional investigation needs to focus on interpretive studies based on individuals' distinct personal experiences (Boyer et al., 2016; Braine et al., 2010; Edwards et al., 2006; Homma et al., 2012; Kaestle, 2012; McNeal & Walker, 2015; Nerlander et al., 2020; Orchard et al., 2020; Reid & Piquero, 2013; Van De Walle et al., 2012). Thus, the study utilized qualitative research design to explain the emergence of this precarious phenomenon involving sex and drug use, also known by the local slang term *Kanding*.

Moreover, drawing from the central thesis of sociologist George Homans, social exchange theory suggests that individuals have to follow certain elements and processes to engage in an exchange when costs and incentives are involved. Homans originally defined "social behavior" as an exchange of tangible or intangible activities, more or less rewarding or costly, between at least two people. The term subsequently developed into the most recent one, "social exchange" (Redmond, 2016). The core tenet of social exchange theory is that interactions that result in another person's approval are more likely to be repeated than those that result in their disapproval (Crossman, 2020).

Redmond (2016) discussed the theory elements of social exchange by Homans. The first element of the theory explains the rewards and the value of rewards, which highlights the idea that various people may place a different value on a particular reward. The second element refers to social rewards obtained through social interaction. Pleasure, contentment, gratification, and need fulfillment are all examples of rewards in interactions with others. The third element refers to the costs described by Homans as something valuable sacrificed. It can also be the removal of a reward or punishment. The fourth element is equity and distributive justice, which explains that the more costs we incur, the more we expect the reward. People often deal with simply achieving a "fair" and equitable trade. It is crucial to understand that social exchange theory does not imply that people are always rational or fully aware of the advantages and disadvantages of their actions. The idea of reciprocity is another component of social exchange theory that is relevant to this subject. Homans asserts that when people reciprocate their actions, they are more inclined to behave socially.

This study focused on the underrepresented and understudied phenomenon of individuals who primarily engage in drug usage and sexual exchange in Iligan City, Philippines. These individuals are known by the local slang term *Kanding* and are referred to as having exchanged sex for drugs, specifically methamphetamine, locally known as *shabu*. In addition, the researchers believed that the investigation into the emergence of the term *Kanding* is among the first to provide a thorough understanding of the experiences of those who engage in sexual activity in exchange for drugs in Iligan City. Specifically, by describing their sociodemographic profiles, identifying the origin of the term *Kanding* as perceived by the informants, discussing the types of *Kanding* and their experiences, describing the benefits and challenges encountered as *Kandings*, and identifying their aspirations.

2.0 Methodology

2.1 Research Design

The study utilized a qualitative research design. Specifically, it employs a case study for its central inquiry. According to Creswell (2003), a qualitative approach to research is based primarily on constructivist perspectives. Data collection involves open-ended questionnaires through interviews, which developed into themes. The researchers employed a case study approach with the specific goal of describing and understanding a phenomenon. It involves a methodical examination of a single occurrence or a sequence of related occurrences (Lune & Berg, 2017). The study occurred in several barangays surrounding Iligan City using snowball sampling.

2.2 Research Locale

The barangays in Iligan City with the highest concentration of drug users have been the focus of the study. Data provided by the Iligan City Anti-Drug Abuse Council (ICADAC) during Duterte's administration shows the highest number of drug users in barangays like Saray, Tambacan, and Tubod. There were 466 recorded drug users in Saray, 348 in Tambacan, and 309 in Tubod. Although the researchers relied on snowball sampling, the study's informants all came from the barangays with the highest number of drug users mentioned above.

2.3 Research Participants

In barangays Saray, Tambacan, and Tubod in Iligan City, ten (10) key informants underwent extensive interviews. The key informants of the study refer to those individuals who engage in sex in exchange for drugs or money, also known as *Kandings*. The informants interviewed include former and current *Kandings*. Their ages ranged from 16 to 47 years old. Additionally, the researchers included one (1) important informant who was not a *Kanding* but had over 40 years of experience in the illegal drug trade. The informant was adept at the workings of illegal drug trading in Iligan City. Overall, those who had indications of emotional instability or were under the influence of drugs or alcohol were not allowed to participate in the study. Moreover, the researchers interviewed two (2) personnel from the Iligan Anti-Drug Abuse Council (ICADAC), specifically the resident psychometrician and admin team leader, each of whom had worked for the council for over a year.

2.4 Research Instrument

This study used a researcher-made interview guide by conducting in-depth interviews. According to Boyce and Neale (2006), in-depth interviewing is a qualitative research approach that entails conducting lengthy, one-on-one interviews with a limited number of respondents to learn about their perspectives on a topic, program, or situation. The informants, who belonged to the category of those who had sex in exchange for drugs or money, received open-ended questions. Furthermore, the research instruments were examined and verified by the research adviser.

2.5 Data Gathering Procedure

This study used specific steps to collect the data. To begin with, the researchers created a letter of consent to conduct the study duly signed by the research adviser. Then, the researchers presented a consent form extracted from the MSU-IIT Institute Ethics Review Committee (IERC) for the adult research informants and the personnel from ICADAC.

The same procedure was followed when interviewing minor informants, as indicated in a duly signed consent letter from the research adviser. Subsequently, the parents or guardians of the interviewed minor informants were given an assent form. The researchers guaranteed that no informants were coerced into giving information for the research. Voluntary participation, anonymity, and confidentiality of the data were given priority and value. Lastly, the data were collected and analyzed.

2.6 Ethical Considerations

This research study followed ethical guidelines. Before conducting the study, the researchers secured a letter of consent to conduct the study congruously signed by the research adviser to be presented to the key informants. Moreover, the informed consent utilized in the interview was extracted from MSU-IIT's Institute Ethics Review Committee (IERC). Since the researchers used snowball sampling to gather informants, the research process was subject-driven, relying on the referrals of the main informants. With this, the informants involved in the study were adequately informed about the research project and were given the right to decide whether to participate or

decline the interview. Moreover, whether they participate or not lies within the participants' decision after thoroughly explaining the research process and describing its potential harms and benefits (Marvasti, 2004).

The same ethical procedure was followed by the researchers for the minor informants but with the inclusion of their parents or guardians. The parents or guardians were adequately informed about the research project and given the right to decide whether the minor informant would be allowed to participate or decline the interview process. An assent form was then provided to the parents or guardians of the minor informants who participated in the study.

Also, the participants' anonymity and confidentiality were preserved by not revealing their names and identities. The informants were also given the right not to show their faces during the photo documentation. The researchers also incorporated pseudonyms for the names of informants throughout the data presentation and analysis. In data collection, the participants were informed beforehand when recording certain information using audio. The recordings were then secured and stored under strict supervision.

3.0 Results and Discussion

3.1 Socio-Demographic Profile of the Informants

Ten (10) key informants who identified as *Kandings* were involved in the study. The informants comprised seven (7) females and three (3) males. Three (3) out of ten (10) informants belonged to middle adulthood, ranging from 45 to 47; five (5) informants belonged to early adulthood, aged 20 to 38; and lastly, two (2) informants belonged to adolescents aged 16. Barangays Tambacan, Tubod, and Saray in Iligan City were the areas they considered residences. Five (5) of them reside in Brgy. Tambacan, three (3) in Brgy. Tubod, and two (2) in Brgy. Saray. The data also indicates that all of them are single. Nearly all informants' religious beliefs are Christian, except for the sole informant, who follows Islam.

In terms of the informants' educational background, nine of them (9) never completed their tertiary education. Four (4) were in primary school, while the remaining five (5) were in secondary school. Only a single informant participated in a vocational course. In addition, all of them except for a single informant have children ranging from 1 to 6. Concerning the informants' family structures, all were from nuclear families. However, several of them belonged to broken families. Furthermore, the informants are not employed in a stable job. Instead, they make their living as drug runners, restaurant servers, dispatchers, pimps, weeders, garbage collectors, and Trisikad drivers, among other occupations. On the one hand, three informants do not have sources of income.

3.2 Origin of the term *Kanding* as Perceived by the Informants

This section discusses the informants' perceived origins of the term *Kanding*, which include the existence of drug trading and the *Kandings* in the realm of prostitution.

Kanding and Illegal Drug Trading

Illegal drug trading was present in Iligan City long before the drug policies of former President Rodrigo Duterte took over the Philippines in 2016. The researchers interviewed a single key informant to discuss the illegal drug trading in Iligan City, which is believed to be one of the reasons why slang terms emerged in the drug discourse.

Lyndsy, a 58-year-old woman who has been a drug user for 40 years, shared her knowledge concerning the illegal drug trading in Iligan City, in which she had previously participated. She classified the individuals into four categories who took part in the drug market, which include the drug lords, sources, pushers or runners, and *Kandings*. *Drug lords* are the ones who produce illicit substances such as marijuana and *shabu* from the so-called Sources. According to Lyndsy, drug lords have factories for drugs located mainly in Lanao del Sur and Ozamiz City in Mindanao. She asserted that there were no drug factories or drug lords in Iligan City. Since the Sources are seen as the next in line of authority behind the drug lords, transactions may occur in their presence. *Sources* are those who purchase substantial quantities of drugs from drug lords to resell in the neighborhood. Sometimes, the drug lords supply them with drugs, and the sources then return the exact quantity that they agreed upon. The Sources also repackage the drugs into smaller portions and then sell them at a significantly higher price for profit. Furthermore, people who distribute drugs to users are referred to as *Pushers*, also known as *Runners*. They purchase drugs in the form of consignments from the sources. On rare occasions, they purchase the drugs straight

from the sources and resell them. On the one hand, the term *Parok* or *Parokyano* represents the clients of the pushers or runners. These are regular individuals who are dependent on illegal drugs such as methamphetamine, locally known as *shabu*. Lastly, the *Kanding*, also known as *Swap Kiki* or *SK*. They are regarded as people who sell their bodies for drugs or money. Most of the Kandings are women and are guaranteed to be drug users.

In this study, the researchers focused on the slang term *Kanding*, which also played a part in the illegal drug trading in Iligan City. According to the Cambridge Dictionary (n.d.), slang is exchanged among individuals familiar with and belonging to the same social circle. Furthermore, it indicates that the slang terminology is utilized informally.

Findings suggest that most of the informants did not know the origin of the slang term *Kanding*, except for Joy and Lyndsy, who claimed that the term was created by drug addicts, *"From what I have known, it was created by crazy drug addicts."* Furthermore, many informants believed the slang term *Kanding* was commonly used in Barangay Saray, Iligan City. Others also heard it in spaces like jails and marketplaces. Below is an excerpt from Lalay's interview when she was asked about the slang term's place of common usage, *"It is Saray. Barangay Saray is top 1 in [Iligan City]."*

Although the informants had a limited understanding of the origin of the term *Kanding*, Lyndsy and Gracia, two key informants, asserted that the term "Kanding" or "goat" in the English language originated from the gregarious nature of goats. Goats were known to be sociable animals who would undoubtedly follow a person around who had food. In this situation, when a person goes with anyone who is arbitrarily provided drugs and money in exchange for sex, the analogy between the goat animal and the goat human is made. Lyndsy said, *"Drug addicts created the term. Goats are bound to follow you if you bring along food."*

Moreover, most of the informants shared that "Swap Kiki or SK" is the term they knew other than *Kanding*. It is an act when a woman "swaps" her vagina for valuable items, specifically drugs and cash. The term existed within the subculture of drug users and addicts in the community, particularly in some areas of Iligan City where illegal drugs are rampant. Only Mari has likened the term *Kanding* to the common slang terms of prostitutes, such as *pokpok* and *burikat*. She said, *"From what I know, the terms burikat and pokpok are synonymous with Kanding."*

The "Kandings" in the Realm of Prostitution

Various responses were gathered regarding the definition and usage of the term *Kanding*. As mentioned above, these are the individuals who participate in sexual exchange by offering monetary and drug rewards in exchange for their bodies. They use the terms "Kanding" or "goat" to describe their behavior—considering that they, as *Kandings*, had to satiate their desires to use illegal drugs and further economic needs. Chay-Chay shared that *Kandings* engages in sexual encounters in exchange for drugs and monetary rewards, *"I engaged in sex exchange to resolve my needs for drugs and money."*

In addition, certain individuals, specifically Jay, asserted that being a *Kanding* is not limited to women alone but also applies to men, *"[Men] can also be called Kanding because there are gays who want their service."* The informants also made further classifications by describing *Kandings* as having several sexual partners. Janet asserted that *Kandings* have different sexual partners, *"The term Kanding refers to the practice of having multiple male sexual partners. You can switch partners every hour. It may consist of approximately four males throughout the day or night."*

All except for a sole male informant asserted that the terms *Kanding* and sex worker or prostitute are synonymous. Since both transactions necessitated the use of their bodies to obtain drugs and money. An excerpt from the informants' responses reveals that the term "Kanding" is synonymous with either a sex worker or a prostitute. Jane stated, *"I think there are similarities between the two since they will be compensated with drugs, just as you mentioned with money. Therefore, I believe it is comparable [relating to Kanding and prostitutes]."*

In contrast, the sole male informant, LL, disregarded the idea of labeling himself as a prostitute or sex worker since he rarely does sex transactions. He said, *"I never thought of myself as a [prostitute]. I never did. Besides, I do not do the act [frequently]."*

The majority of them identified as sex workers because they believed that engaging in multiple sex with multiple partners was an indication of being a sex worker. It should also be highlighted that the majority of the informants

have shared some emotional intimacy with their sexual partners in the trade, particularly women. Although four (4) informants neglected to disclose that they had shared sexual intimacy with their sexual partners, LL, one of the four informants, claimed that he had no deep emotional connection with his relationships. In addition, the provision of money and drugs depends on an agreement reached by both sides, and it is usually done implicitly.

3.3 Types of *Kanding* and Their Experiences

This section discusses the different typologies of *Kanding* and their experiences. Mainly the sex for drugs *Kanding*, the *Kanding* as an intimate partner, *Kanding* as a sex worker, and for self-gratification *Kanding*.

Sex for Drugs Kanding

The *Kandings* are people who participate in Iligan City's illegal drug trading and have sex with random men, who are typically drug users, in exchange for money and illegal drugs. In connection, all of the key informants were drug users before their first engagement in sexual exchange. All of them are current drug users who have used methamphetamine, often known locally as *shabu*. The duration of illegal drugs used by informants is as follows: three (3) of the ten key informants have used illegal drugs for over 20 years. Four (4) informants have been using illegal drugs for more than five years, while three (3) informants have been doing so for less than a year. Therefore, engaging in deviant activities was part of their way to acquire illegal drugs, specifically their experience of sex exchange.

Most of them asserted that having sex with individuals was one of their motivations for acquiring drugs. In an excerpt from Jay's interview, he began having sex with gay men after becoming addicted to drugs, which were introduced to him by friends, *"I started having sex with others when I got addicted to drugs. My friends influenced me."*

Other factors concerning the informants' motivation for using drugs that led them to engage in sex exchange are discussed in the following themes: *broken homes and family abandonment, peer and family influence, and emotional dejection*.

Some informants attributed their first exposure to illegal drugs to broken homes and family abandonment. Chay-Chay, Lalay, and LL have lived in a dysfunctional family, which has driven them to try using illegal drugs. Moreover, their parents abandoned Jay and LL at an early age. The following are excerpts from the informants' responses to broken homes and family abandonment.

LL was abandoned by his parents at the age of four, leading him to use illegal drugs.

"When I was young, my mother left me. She left me and went to Cotabato! I have a sibling, but he had a different father. I always searched for my mother at the age of four. She left me. My father left me, too!"

Chay-Chay began using illegal drugs when her parents separated.

"Our family is falling apart. My mom was also looking for something else, and then I was with friends. I got into that [vice] because I wanted to try it. Then, when I try, that is what I am used to, but if you do not know how to control it, you will go crazy."

Peer and family influence top the list of the informants' responses as motivations for using illegal drugs. Seven (7) key informants claimed that their peers, or "barkada," motivated them to use drugs, while three (3) claimed that their family or relatives influenced them to do so. The following are excerpts from the informants' responses to peer and family influence.

Janet was forced by her co-dancers at Big Brother, a bar in Iligan City, to try using drugs for the first time. This was her first exposure to drug use in her whole career as a bar dancer.

"My fellow co-dancers here in Iligan forced me to use drugs. They will pour beer on me if I do not do what they want. I learned a lot during my time at Big Brother [bar]."

Gracia admitted that she felt pressured by her husband's siblings, who were known to be drug users. She tried taking drugs to identify with them.

"Before, my partner was a drug addict. He is also addicted to women. His family was also drug users, and I was the only one who did not use drugs when I first came to their family. Then her sibling invited me to try taking drugs, and I tried."

Five (5) key informants mentioned that they experienced feelings of dejection or were depressed. Jay, Lalay, LL, Mari, and Joy have shared the intense discouragement they felt in life that made them choose the path of being dependent on illegal drugs. The following are excerpts from the informants' responses to experiencing emotional dejection.

Lalay cannot express how devastated she was when her father died. She did not understand her circumstances and felt lonely and hopeless.

"It is a result of my family's separation. My father's passing made me lose hope for the future. I am unable to articulate my feelings. In this life, I wish to be by myself. I do not think I will get better. I am not sure I understand."

Joy shared how her world collapsed when she learned about her father's death.

"Yes. I was on a mental block. After the death of my [Papa], my world collapsed."

Kanding as an Intimate Partner

While profound emotional connections between sex workers and their partners are uncommon, both sides have the opportunity to form intimate relationships during transactional sex. Moreover, some Kandings had profound emotional connections with their partners in this study. The following are excerpts from the informants' responses concerning the profoundness of the sexual relations between the *Kandings* and their sexual partners.

Chay-Chay was saved by her sexual partner, who eventually became her boyfriend. He urged her to change by not having sex with different men.

"My now-incarcerated boyfriend will prevent me from having any more sex exchanges. As long as I cease to be a Kanding, he can look for money. If you continue to do that, you will lose people's respect."

Janet also shared that she had several sexual partners she had a relationship with. Although her approach differed from Chay-Chay, Janet committed to a relationship with some partners to fulfill her basic needs. Her partner provided money to pay for her rent and food. She also mentioned that if he does not provide for her, she will not have sex with him.

"Yes, I have a partner in which they served as my weekly and monthly maintenance. I have a weekly budget."

In contrast, LL and Joy dismiss the idea of having an emotional connection or relationship with their sexual partners. Specifically, LL who asserted that despite his years of experience in sex exchange, he dismissed the idea of having a deep emotional connection with his sexual partners. Furthermore, Jay, Jane, and Gracia did not disclose the status of their sexual relationships.

Kanding as a Sex Worker

Sex work, as defined by Merriam-Webster Dictionary (n.d.), is a person whose work involves sex acts. The typology of sex work *Kanding* focuses on the duration and frequency of the *Kandings'* engagement in sex exchange. They are concerning the informants' duration of being a *Kanding*. Two (2) of the ten key informants have been a *Kanding* for at least 20 years. One (1) informant has been a *Kanding* for over five years, while the remaining seven (7) have been doing so for less than five years.

She was concerning the informants' frequency of being a *Kanding*. Janet, Chay-Chay, and LL had multiple partners in a single day or week. Janet adds, *"Usually, it is three or four,"* referring to her daily sexual partners of at least

three to four men. Chay-Chay, on the other hand, says, *"In a single day, I can have at least three"*, referring to her three sexual partners per day, who were usually referred to by a *bugaw*. Lastly, LL shared that when he was active in the sex exchange, he could have at least four gay sexual partners per week.

Jay and Johnrex, on the one hand, had frequent sexual partners who would contact them on specific days, usually on weekends. Their sexual partners were gay men. Jay adds, *"I do have my contacts. I have a frequent partner every Saturday"*, referring to her frequent partners every Saturday. Jay also sometimes seduces gay men on the roadside as well, during a drinking session. Moreover, Johnrex shared that his usual partners are 32-year-old men who contact him weekly.

Moreover, a few informants have occasional transactions. Jane, Mari, and Joy become *Kandings* when the need arises. Jane added, *"It depends on my cravings for drugs."* However, for Lalay, her transactions depend. Sometimes, she initiates the transactions, which usually involve her acquaintances, she adds, *"But sometimes I offer [sex] on the advice of my friends."*

For Self-gratification Kanding

The typology of self-gratification Kanding focuses on Kanding's satisfaction both when taking illegal drugs and fulfilling their basic needs, which can be attained through sex exchange. Most of them are economically vulnerable.

Six (6) of the informants stated that they participate in sexual activity to meet their basic needs. It should also be noted that none of them had a permanent occupation, and they failed to earn their education.

For nine years, LL had been a Kanding. Due to his failure to finish his education, he fell into poverty and turned to drug usage and sex exchange. Mari offered her body for cash. Acquiring drugs was not her priority; she needed money to feed her children. Moreover, others commented on how simple it is to get money by having sex with other people. Others were also satisfied with their acts, while the other informant engaged in the sex trade for revenge.

Lalay, LL, and Mari underlined the sense of satisfaction that comes with using illegal drugs. Lalay felt at ease when using drugs, and she felt alleviated from all her worries. Furthermore, taking drugs made LL feel happier and less fatigued. Finally, Mari wanted to have fun and forget her concerns about leaving her family behind. The following are excerpts from the informants' responses to experiencing self-gratification.

"In my first attempt [used], I ask what kind this is? Other people say it tastes good, cools your brain, and can eliminate your problems". - Lalay

"I started using drugs when I was five in Bagsakan at Tambacan. I have been using drugs for 32 years until now when I have free time. I used drugs to enjoy myself and get rid of body fatigue." - LL.

"It is like having a war shock. I was brokenhearted after I left my family. I want to have fun so that your problem will disappear. You will be having fun." - Mari.

3.4 The Sexual Partners

There are always two parties involved in sexual transactions: the sellers and the buyers. Usually, the people who sold sex referred to them as "prostitutes" and the clients as "johns." In this section, the researchers present findings concerning the sexual partners of the *Kandings* in the study. Parker (2004) defined the Johns as the customers. The Johnsons are the ones who fueled the business of prostitution and pornography. He discussed the four types of prostitution customers: users, sadists, necrophiles, and child molesters. Most of them took pleasure in violence or inflicting harm on young people.

In this study, the usual sexual partners of the *Kandings* are drug users. Their primary motivation was to acquire sexual pleasure. It can also be noted that one of the reasons for the emergence of the *Kandings* was the presence of illegal drug trading in Iligan City. One crucial characteristic of the *Kandings* was the fact that they were drug users

first before engaging in the act of sex exchange. The informants also acknowledged engaging in sexual activity with acquaintances or random men. However, they insisted that their partners were drug users, as they offered cash and drugs in return for the encounters.

Jane, on the other hand, shared that her usual partners were drug users because they were usually the ones who needed *Kandings* to satisfy their sexual desires. She remarked, *"It is the drug users who needed the Kandings the most."* Furthermore, the male informants in this study had gay males as sexual partners. Jay, LL, and Johnrex had sexual encounters with gays. They were normally contacted by their regular partners and convened at a certain time and location. Sometimes, they initiate the exchange by luring gays by the roadside or during a drinking session. Jay shared, *"I usually stay by the roadside or be with them at a drinking session. I also have contacts for my frequent customers every Saturday... I sold myself to the gays."*

Parker (2004) further discussed the role of the pimps in prostitution: if the Johns are the ones who consume prostitution and pornography, the pimps are the ones who enable it. They sold or referred prostitutes to the Johns for consumption, and in return, the pimps were compensated with little to no amount given to the prostitute. He also classified the pimps into three general types: media pimping, business-level pimping, and street-level pimping. Pimping in the media and at the corporate level brings in more money than pimping on the streets. The media pimp sells pornography and other fantasies that eventually harm people. On the other hand, business-level pimps capitalize on the sex industry by owning bars and strip clubs, which attract johns. Lastly, street-level pimps are referred to as small-time criminals with a high need for sadistic gratification, and they are typically drug and alcohol addicts. They also went by the moniker "the sex industry's foot soldiers."

In this study, some informants have experienced being referred by a pimp or *bugaw* who falls under the category of street-level pimping. This method favors the pimps or *bugaw* since they benefit from the women they recommend, whether it is drugs or money, depending on their agreed-upon terms. Chay-Chay and Lalay were preyed on by the pimps or *bugaw*. The following are excerpts from the informants' responses to experiencing being preyed on by pimps or *bugaw*.

"There is a person who will contact me and say, 'I have someone to refer to you so that you can have money. I would say, 'Yes, just text me.' Then the pimp who referred me will be compensated." - Chay-Chay.

"I tried being referred by a pimp... I also tried being sold by my boyfriend. There was a man from Tambacan who forced me to use drugs. My boyfriend also forced me to go with the man to a lodge. I told my boyfriend that he should come with me. At the lodge, my boyfriend left me with the man, telling me he would buy something. I waited for him for so long, but eventually, I was used by the other man."

- Lalay

3.5 Benefits and Challenges Encountered as *Kandings*

This section discussed the benefits and challenges encountered by the *Kandings*. The benefits include *money and drugs*, while the challenges include *stigmatization, unsettled transactions, and the acquisition of sexually transmitted infections (STIs)*.

Benefits Encountered as Kanding

Sexual exchanges committed by the informants came with rewards and costs. The usual responses of the informants regarding their rewards with the exchange are money and drugs. All except for the sole informant, Gracia, exemplify the reward involving drugs, implying that the chance of receiving drugs is high in each transaction. They have diverse experiences with how they engage in the trade, including whether they used the drugs before, during, or after the sex. Still, it is more likely that they used the drugs after the sexual exchange because they highlighted the issue of unsettled transactions.

Furthermore, all except Jane and Gracia received both drugs and money throughout their exchanges. Jane only received drugs in all of her transactions; she said, *"It is pure drugs since we are talking about Kanding. It is just drugs."* Whereas Gracia only received cash, she said, *"I have tried that [being a Kanding], but there were no drugs. He only gave me money."*

The availability of drugs and money compensated to the *Kandings* indeed depends on what they agreed on before they had sexual intercourse. The usual responses they had when asked about the amount of money their sexual partners gave ranged from 300 PHP to 2,500 PHP. The number of packed drugs given to them also varied, ranging from 500 PHP to 1,000 PHP, but the usual amount of drugs given to them was 500 PHP – this is the lowest price of *shabu* since the onset of Duterte’s presidency.

It can be noted that the compensation for male *Kandings* is much lower than that for female *Kandings*. Jay, LL, and Johnrex have stated that they typically receive between 150 PHP and 300 PHP in cash from gay men. The drugs, however, are valued at approximately 500 PHP.

Moreover, the female *Kandings* in this study also had varied experiences with their sex transactions. Younger female *Kandings* tend to have higher compensations compared to the older *Kandings*. Both Chay-Chay and Lalay, who were younger than the others, acquired more drugs and cash than the others. However, at present, both stopped engaging in sex transactions despite having more compensation.

Chay-Chay’s transactions always involve money and drugs. Her sexual partner’s average budget was 2,000 PHP, but on occasion, she was given 1,000 PHP in cash and 1,000 PHP in medications. However, she chose money over drugs. She said, “*There is always money and shabu, but I prefer to choose the money. For example, they have a 1,000 PHP to 2,000 PHP cash budget.*” On one hand, Lalay had a different approach. She wanted food, drugs, and money on her sex transactions. The maximum amount of money that she could get ranged between 2,500 PHP and 500 PHP worth of drugs. She said, “*I am different from others. I want complete compensation, such as food, money, and drugs. Usually, the maximum reward I can have is 2,500 PHP, and for the amount of drugs, it is usually 500 PHP.*”

In contrast, older *Kandings* also have varied experiences. Janet and Joy have been *Kandings* for more than 20 years. To this day, they still engage in sex transactions, but their compensation and expectations are much lower than those of the younger *Kandings*.

Janet prioritized the presence of drugs in her transactions. For her, it does not matter who her partner is if they have drugs with them. The compensation also varies per transaction. Sometimes, she receives 500 PHP in cash and 1,000 PHP in drugs. There were further occasions when she paid for a lodging room and was then provided drugs.

Furthermore, Joy can only get 500 to 1,000 PHP in cash in her transactions. There are also times when she engages in sex to pay her drug debt. She mentioned, “*Usually, it is 500 PHP, but sometimes 1,000 PHP. That is the highest amount I can get.*”

Challenges Encountered by Kanding

All of the informants experienced *stigmatization* from the community and themselves. Some of them shared the perceived stigma they felt from the community, which included being disrespected and labeled as dirty. The following lines are excerpts from Janet, Chay-Chay, and Jane’s sentiments of perceived stigma from their community.

“*Ah, it is shameful. They will treat you with disrespect.*” – Jane.

“*People were treating me disrespectfully because they believed I had multiple partners, so I ended the act of having sex. My child has been affected as well.*” – Chay-Chay.

Furthermore, some informants experienced self-stigma by considering themselves filthy. Others were ashamed of what they did, particularly having sex with people. Others saw it as cheap and damaging to their reputation.

“*It is dirty work, but I had no choice but to do it. In my opinion, it is preferable than stealing for the vice alone.*” – Jay.

In contrast, the two male respondents stated they had experienced perceived stigma but not self-stigma. Johnrex claimed he was fine with being a *Kanding*, while LL stated that he could not say he felt dirty because he was a man.

"Since I am a man, I do not consider myself to be filthy as a Kanding. However, I believe it to be the same." - LL.

Unsettled transactions are one of the costs the informants shared when they engaged in sex exchange. Janet, Jay, and LL had once experienced being uncompensated by their service. They were disappointed since it was mostly their frequent sexual partners who would not pay them.

"Yes, sometimes they will not pay me. They say, 'I do not have my wallet with me. I will withdraw some money. Just stay here.' Then sometimes they leave me at the hotel without knowing they already paid for it. As a Kanding, I waited for them until the next day. I have waited for so many hours. That happened to me. I trusted them because they were my usual partners. They will contact me every week or month." - Janet.

Finally, several informants, including Jay, LL, and Jane, developed sexually transmitted diseases (STIs) because of the constant exchange of sex with various individuals. In addition, none of them visited a clinic or took appropriate antibiotics for their infections. They were even unsure of the exact name of their infections.

"I got it [infection]. It is my first time having an infection because of gays. I tried to heal myself using coconut! It is true, and my skin was chafed." - LL.

Also, others did not acquire any sexually transmitted infections since they used contraception such as condoms. Janet and Chay-Chay shared their experience of using condoms before having sex with anyone.

"I have never had sex [without a condom], even if I have sex with many men in one day, sometimes five, but I cannot go without a condom. They will be angry, but how can they if I have the money and I already have the shabu? Ah, I will leave them." - Janet.

3.6 Aspirations of the Kandings

The informants expressed concerns regarding their hopes and aspirations in life. Almost all of them wanted to change for several reasons. Some informants were tired of their addiction, others could not stand the disrespect from other people, and others wanted to finish their education. Another informant rekindled his talent for songwriting, but the most common responses were to rely on their family for inspiration and to remain faithful to God.

Most desired the best for their families, particularly their children. They tried to change the trajectory of their lives by looking to their children for inspiration and hoped to see them succeed in life.

"Yes, I will change myself for the sake of my children. It is unfortunate that nobody will care for them." - Johnrex.

"I want my kids to focus on their education, and I want my partner to come back so our family can be whole again." - Gracia. Despite how troubled and unfortunate they felt, others held onto their faith in God. They saw God as an instrument for their recovery. Mari and Joy emphasized the importance of faith in their lives.

"Personally, even though I have failed in life twice, there was never a time that God was not with me. He is always here in my heart. If you do not believe in God, you have nothing. Do you know that you will be given problems so that you can have faith in God? I usually do not go to church because I am discouraged by my partner, but I have high hopes for my future because I have children." - Mari.

Despite acknowledging God's presence, Lalay is still unable to comprehend her father's death. Her father had been her only source of inspiration in life, and when he died, she lost hope.

"I do not care about myself. God will take care of me. I do not have any inspiration in life other than my father. When he died, it was on my birthday, which is today." - Lalay.

To reiterate the research problem, the researchers in this study concentrated on the emergence of the phenomenon of *Kanding* and the social interactions between the *Kandings* and their partners that involved sexual encounters.

The findings implied that the term *Kanding* emerged as a slang term commonly used in the drug subculture and discourse. The availability of illegal drugs in Iligan City is considerably more accessible due to the establishment of illegal drug trading, which was made up of *drug lords, sources, runners or pushers, and parokyano, or parok*.

Moreover, the study utilized the social exchange theory of George Homans, with the core tenet that interactions that result in another person's approval are more likely to be repeated than those that result in their disapproval (Crossman, 2020). The results imply that the *Kandings* obtained their rewards with either money or drugs through sex transactions and that their motivations were firmly rooted in their economic vulnerabilities and dependency on drugs. This is evident in the majority of results from research on the sex trade, where one of the main drivers of sex work is financial instability (Duria, 2021; Lasco, 2017; Legarde, 2023; Orchard et al., 2020). In addition, past studies counted drug usage as one of the risk factors for sex exchange (Homma et al., 2012; Kaestle, 2012; McNeal & Walker, 2015). Their implicit sexual agreements determine the rewards and advantages they receive, as well as their relative values. Although the *Kandings* claimed that drugs are always included in their transactions, they are allowed to choose between having money or illegal drugs available. The *Kandings* derived social rewards from their transactions, which included self-gratification from obtaining illegal drugs and meeting their basic needs. In their sexual encounters, reciprocity was also important. They anticipate doing the same for each other since they happen to exchange illegal drugs and sex.

However, there are instances where every interaction presents distinct costs or challenges. The majority of *Kandings* were stigmatized by the community and within themselves. Perceived stigma refers to the former, while self-stigma refers to the latter. Most of the female *Kandings* experienced both perceived stigma and self-stigma. It was when they were disrespected and labeled dirty by the community. They also felt filthy for themselves. While male *Kandings* only experienced perceived stigma but did not experience self-stigma because they are men. The findings about stigmatization are evident from the findings of past research regarding the differences between men's and women's experiences with sex work. Female participants shared numerous pessimistic accounts concerning the nature of their profession. One of the pressures of their line of work was the fear of being discovered and feeling ashamed. They were also reluctant to disclose their work for fear of being judged or labeled as promiscuous. In contrast, male participants are less ashamed or even pleased to report selling sex because it may make them feel more desired. Moreover, the fear of being "discovered" was absent in male participants (Kaestle, 2012; Van de Walle et al., 2012).

The potential for unresolved transactions within the exchanges is another challenge they encountered. A number of the informants, particularly the male *Kandings*, have reported not receiving payment for their sex work. Since the majority of their gay partners were regulars, they felt secure in knowing that they would be compensated. Furthermore, several *Kandings*—particularly the males—have reported contracting STIs from their continuous intercourse with random gays. A single female *Kanding* also became infected with STIs. The informants are skeptical that their illnesses are a threat. They did not even seek medical advice from a physician to address their infections. One person revealed that she followed her friends' advice on how to heal herself. Past studies involving sex work and drug use argued for a higher risk of contracting sexually transmitted diseases (STDs) (Baseman et al., 1999; Urada et al., 2014).

Finally, in light of the concepts of distributive justice and equity in social exchange, the *Kandings* anticipate greater returns or benefits than the costs they bear. Many *Kandings* maintained their engagements for some time for the reasons mentioned above. However, as their transactions with their sexual partners developed, the costs began to exceed the benefits or rewards they could receive from the exchanges. As mentioned, the male *Kandings* received low payments or unpaid services from their gay partners. For the female *Kandings*, the stigma worsened when some of them felt intense shame and feelings of filth.

Although most of the *Kandings* interviewed in this study were former *Kandings*, the researchers found out that for some *Kandings*, specifically women, sexual exchanges with their sexual partners within the drug economy ceased to exist, but they continued their relationship with each other. Some of the female *Kandings* have their former sexual partners as their boyfriends or live-in partners. They formed a bond by developing deep emotional connections. Also, others felt the need to formalize their relationship for economic reasons such as providing food and housing rent. Moreover, the former *Kandings* pursued jobs both within and outside the illegal drug trading of

the city. Some of them became pushers or runners, *bugaws* or *pimps*, *selling babying pipes*, *dispatchers*, *food servers*, *tricked drivers*, and garbage collectors.

4.0 Conclusion

In conclusion, the term "Kanding" emerged in Iligan City due to the problem of drug usage and sex work, which led to interactions between numerous actors in illegal drug trading. The *Kandings* under investigation represent a disadvantaged community with few resources. Their upbringing in dysfunctional homes and communities had a profound impact on their personal development, which led them to succumb to drug use and limit their ability to take advantage of opportunities. This explains the reasons they manifest experiences of using drugs, prostitution, and having intimate relationships with their sexual partners to gain access and earn money despite challenges such as stigma, unresolved transactions, and the acquisition of sexually transmitted infections (STIs). They were also kept outside of mainstream institutions by the stigma and criminality associated with drug use and sex work, which limited their ability to institutionalize their connections.

However, being a *Kanding* does not limit their aspirations in life. The informants maintained their optimism, wanting the best for their families, their children's success, and their deep belief in God to help them overcome such challenges. What is alarming is the fact that they are still involved in Iligan City's illegal drug trading and that they still use drugs. Moreover, the study captures the complex nature of sex work and drug usage in the field of deviant sociology, which highlights the need to understand and seek solutions. Thus, the researchers recommend that future researchers utilize different theoretical perspectives on the sociology of deviance to allow them to explore the discourse of drug use and sex exchange. Different approaches to research design are recommended, such as using quantitative and mixed methods. This would enable other researchers to look into the prevalence of the phenomenon. Regarding policy recommendations, it is recommended that government offices serve the needs of underprivileged and marginalized community members and strengthen their cooperation with one another. Government agencies that deal with drug use, addiction, and prostitution, such as the Iligan Anti-Drug Abuse Council (ICADAC) and Iligan City Health Office (CHO), ought to recognize the complexity of the problems that their clients face. Lastly, this research could be an initial step toward understanding the intricate nature of the sex-for-drug exchange that exists in Iligan.

5.0 Contributions of Authors

The corresponding author, Jovell Nicole S. Along, gathered the data, encoded, analyzed the data, and wrote the results and discussions of this research. The other author, Renebel O. Labadiso, served as the research adviser who guided the formatting, interpreting, editing, and finalizing of the study's findings.

6.0 Funding

This work received no specific grant from any funding agency.

7.0 Conflict of Interests

The authors declare no conflicts of interest about the publication of this paper.

8.0 Acknowledgment

The author expresses sincere gratitude to the following individuals who have imparted their expertise in this academic endeavor: To Prof. Renebel Labadiso, the research adviser, for his patience, guidance, knowledge, and constant encouragement in completing this study. To the panel members, Prof. Sulpecia L. Ponce, Asst. Prof. Amabelle A. Embornas and Sir Maprh Daryl O. Porras, thank you for your helpful comments and suggestions for improving the study. Also, thank my colleagues at the Department of Sociology at MSU-IIT for their trust. Lastly, I would like to thank the informants who fearlessly and sincerely shared their stories. You were seen and acknowledged for Janet, Chay-Chay, Jay, Lalay, LL, Jane, Mari, Johnrex, Joy, and Gracia. This study was made possible with your participation. May you be blessed on your path to recovery.

9.0 References

- Baseman, J., Ross, M., & Williams, M. (1999). Sale of sex for drugs and drugs for sex: An economic context of sexual risk behavior for STDs. *Sexually Transmitted Diseases*, 26(8), 444–449. <https://doi.org/10.1097/00007435-199909000-00005>
- Boyce, C., & Neale, P. (2006). Conducting in-depth interviews: A guide for designing and conducting in-depth interviews for evaluation input. Pathfinder International.
- Boyer, C. B., Greenberg, L., Chutuape, K. S., Walker, B. C., Monte, D., Kirk, J., & Ellen, J. M. (2016). Exchange of sex for drugs or money in adolescents and young adults: An examination of sociodemographic factors, HIV-related risk, and community context. *Journal of Community Health*, 42(1), 90–100. <https://doi.org/10.1007/s10900-016-0234-2>
- Braine, N., Van Sluytman, L., Acker, C. J., Friedman, S. R., & Desjarlais, D. C. (2010). Money, drugs, and bodies: Examining exchange sex from multiple perspectives. *Journal of Gay and Lesbian Social Services*, 22(4), 463–485. <https://doi.org/10.1080/10538720.2010.491755>
- Cambridge Dictionary. (n.d.). Slang. <https://dictionary.cambridge.org/us/grammar/british-grammar/slang>
- Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed method approaches* (2nd ed.). Sage Publications, Inc.
- Crossman, A. (2020, January 14). Understanding social exchange theory. ThoughtCo. <https://www.thoughtco.com/social-exchange-theory-3026634>
- Duria, J. J. (2021). Being left behind: Phenomenological experience and narratives of sex workers in rural Philippines amidst COVID-19 pandemic. *Social Science Research Network*. <https://doi.org/10.2139/ssrn.4188198>
- Edwards, J. M., Iritani, B. J., & Hallfors, D. D. (2006). Prevalence and correlates of exchanging sex for drugs or money among adolescents in the United States. *Sexually Transmitted Infections*, 82(5), 354–358. <https://doi.org/10.1136/sti.2006.020693>
- Homma, Y., Nicholson, D., & Saewyc, E. M. (2012). A profile of high school students in rural Canada who exchange sex for substances. *The Canadian Journal of Human Sexuality*, 21(1), 29–40.

- Human Rights Watch. (n.d.). Philippines' war on drugs. <https://www.hrw.org/tag/philippines-war-drugs>
- Kaestle, C. E. (2012). Selling and buying sex: A longitudinal study of risk and protective factors in adolescence. *Prevention Science*, 13(3), 314–322. <https://doi.org/10.1007/s11121-011-0268-8>
- Lasco, G. (2017). Call boys: Drug use and sex work among marginalized young men in a Philippine port community. *Contemporary Drug Problems*, 45(1), 33–46. <https://doi.org/10.1177/0091450917742052>
- Legarde, L. M. (2023). Sex industry: Analysis of sex work and sex workers in Zamboanga City, Philippines. Social Science Research Network. <https://doi.org/10.2139/ssrn.4522224>
- Lune, H., & Berg, B. L. (2017). *Qualitative research methods for the social sciences* (9th ed.). Pearson Education Limited.
- Marvasti, A. B. (2004). *Qualitative research in sociology*. Sage Publications Ltd.
- McNeal, B. A., & Walker, J. T. (2015). Parental effects on the exchange of sex for drugs or money in adolescents. *American Journal of Criminal Justice*, 41(4), 710–731. <https://doi.org/10.1007/s12103-015-9313-7>
- Merriam-Webster Dictionary. (n.d.). Sex worker. <https://www.merriam-webster.com/dictionary/sex%20worker>
- Mondino, A. (2010, December 15). Lawmakers move to decriminalize prostitution. House of Representatives. <https://www.congress.gov/ph/press/details.php?pressid=4676>
- Nerlander, L., Handanagić, S., Hess, K. L., Lutnick, A., Agnew-Brune, C., Hoots, B., Braunstein, S., Glick, S. N., Higgins, E., Padgett, P., Schuette, S. M., Broz, D., Ivy, W., Smith, A., Thorson, A., & Paz-Bailey, G. (2020). HIV prevalence among women who exchange sex for money or drugs—4 U.S. cities. *Journal of Acquired Immune Deficiency Syndromes*, 84(4), 345–354. <https://doi.org/10.1097/qai.0000000000002362>
- Orchard, T., Salter, K., Bunch, M., & Benoit, C. (2020). Money, agency, and self-care among cisgender and trans people in sex work. *Social Sciences*, 10(1), 6. <https://doi.org/10.3390/socsci10010006>
- Parker, J. (2004). How prostitution works. In R. Whisnant & C. Stark (Eds.), *Not for sale: Feminists resisting prostitution and pornography* (pp. 3–14). Spinifex Press.
- Redmond, M. (2016). Social exchange theory. ResearchGate. https://www.researchgate.net/publication/317730132_Social_Exchange_Theory
- Reid, J. A., & Piquero, A. R. (2013). Age-graded risks for commercial sexual exploitation of male and female youth. *Journal of Interpersonal Violence*, 29(9), 1747–1777. <https://doi.org/10.1177/0886260513511535>
- Ritchie, H., Arriagada, P., & Roser, M. (2022, June 26). Opioids, cocaine, cannabis, and other illicit drugs. Our World in Data. <https://ourworldindata.org/illicit-drug-use>
- Simbulan, N. P., Estacio, L. R., Dioquino-Maligaso, C., Herbosa, T., & Withers, M. (2019). The Manila declaration on the drug problem in the Philippines. *Annals of Global Health*, 85(1). <https://doi.org/10.5334/aogh.28>
- United Nations Office on Drugs and Crimes. (2023, June 2). East and Southeast Asian synthetic drug supply remains at extreme levels and diversifies. <https://www.unodc.org/roseap/2023/06/regional-synthetic-drugs-report-launch/story.html>
- Urada, L. A., Strathdee, S. A., Morisky, D. E., Schilling, R. F., Simbulan, N. P., Estacio, L. R., & Raj, A. (2014). Sex work and its associations with alcohol and methamphetamine use among female bar and spa workers in the Philippines. *Asia-Pacific Journal of Public Health*, 26(2), 138–146. <https://doi.org/10.1177/1010539512471969>
- Van De Walle, R., Picavet, C., Van Berlo, W., & Verhoeff, A. P. (2012). Young Dutch people's experiences of trading sex: A qualitative study. *Journal of Sex Research*, 49(6), 547–557. <https://doi.org/10.1080/00224499.2011.618955>

Big Five Personality Traits Predict Academic Self-Efficacy Among Undergraduate College Students

Maria Angelynne Dasigan, Mika Jeanela Pagalaran, Nicole Mij Anne Mauleon, Kim Daniel M. Sanchez*
Psychology Department, Far Eastern University, Manila, Philippines

*Corresponding Author Email: ksanchez@feu.edu.ph

Date received: June 11, 2024

Date revised: July 16, 2024

Date accepted: July 20, 2024

Originality: 89%

Grammarly Score: 99%

Similarity: 11%

Recommended citation:

Dasigan, M.A., Pagalaran, M.J., Mauleon, N.M.A., Sanchez, K.D. (2024). Big five personality traits predict academic self-efficacy among undergraduate college students. *Journal of Interdisciplinary Perspectives*, 2(8), 612-617. <https://doi.org/10.69569/jip.2024.0306>

Abstract. One factor that predicts academic success is Academic Self-Efficacy, the perceived competency to accomplish a school-related task. Big Five Personality traits are innate one's tendencies to think, feel, and behave. Evidence indicates that specific Big Five Personality traits predict academic success. Hence, the Big Five Personality traits might influence Academic Self-Efficacy as a belief formation resulting in academic success. This study investigated the link between Big Five Personality traits and Academic Self-Efficacy. It employed purposive sampling and involved 201 undergraduate students (18-30 years old) from Manila, Philippines, who responded to the online psychological questionnaire. Results indicated a significant positive association between Academic Self-Efficacy and traits: Openness to experience, Conscientiousness, Extraversion, and Agreeableness. In contrast, Neuroticism traits indicated a negative relationship. These findings could be used as a basis for utilizing personality profiling in developing perceived academic competency among college students, potentially revolutionizing academic practices.

Keywords: Educational Psychology; Big Five Personality Traits; Academic self-Efficacy; Academic achievement; Philippines.

1.0 Introduction

The demand for competency is scaling up, putting pressure on students to acquire necessary competencies and academic success. Believing that one has competencies in attaining success plays a significant role. One's belief in executing a task is crucial to achieving the goal. Self-efficacy is a belief that one can perform a necessary behavior to obtain a targeted outcome (Bandura, 2018; Wilde & Hsu, 2019). It influences mental health from stress, depression, and anxiety and the degree of effort that will be inserted for the task (Rippon et al., 2022; Zhou et al., 2021; Iroegbu, 2015;).

Self-efficacy (SE) is particularly instrumental among college students bombarded with academic tasks that exhaust their mental and physical limitations. These academic tasks are making them susceptible to the magnitude of stress that might compromise their mental health (Abrams, 2022; Zhou, 2022; Pedrelli et al., 2015). Hence, Academic Self-Efficacy (ASE), a belief in one's competence to accomplish these academic tasks, is interrelated with college student's psychological health (Grøtan et al., 2019).

ASE facilitates educational achievement. It is an essential belief system that promotes behavior to obtain good grades and other positive outcomes across academic levels. As the evidence indicates ASE is significantly linked to achievements in academe (Luo et al., 2023; Fakhroul & Habib, 2022; Honicke et al., 2023; Nasir & Iqbal, 2019; Alyami et al., 2017; Honicke, & Broadbent, 2016). And further, established that students who had a strong positive belief in their capacity to have higher grades resulted in obtaining actual higher grades (Nasir & Iqbal, 2019). Other

findings indicate that ASE has a robust positive relation with satisfying academic life (Carranza Esteban et al., 2022), planning of effective learning techniques, and positive emotions (Hayat et al., 2020).

Therefore, identifying factors that influence ASE is crucial to educational psychologists and institutions concerned with crafting programs for facilitating academic success and enhancing mental health. Among other factors, the Big Five personality traits are significantly associated with ASE (Rivers, 2021; Abood et al., 2020). A prior study by Caprara et al. (2011) demonstrated that Openness to experience and Conscientiousness traits, together with ASE, facilitate the achievement of good grades. Recent findings of Wang et al. (2023) further established that the Big Five affect success in academic tasks through the mediation of SE. This leads to an assumption that specific Big Five traits might predict ASE.

The Big Five traits posit that one's innate tendencies can be conceptualized into five broad traits namely: Openness to experience, for cognitive exploration, and seeking novelty; Conscientiousness, for order and structure; Agreeableness avoidance of conflict and cooperation; Extraversion, for goal activation and seeking reward; and Neuroticism, for sensitivity toward negative emotions (DeYoung, 2015). These traits are unique individual variation of human nature that provides a stable disposition of cognition, emotion, and behavior (DeYoung, 2015) and instantiate psychological goals that predispose an array of cognitive, emotional, and behavioral expressions (DeYoung & Tiberius, 2023). These tendencies might be influencing ASE. By providing attitudinal and behavioral patterns that facilitate the formation of a belief system, one has the competence to accomplish the task. Therefore, the current research aimed at answering whether Big Five traits predict ASE.

2.0 Methodology

2.1 Research Design

The study used a correlational research design to measure the association between Big Five and ASE. It employed Pearson r and Linear regression statistical analyses to measure the degree of relationship and influence between the variables.

2.2 Research Participants

The study employed purposive sampling involving 201 participants who were residents of Metro Manila, Philippines, ensuring homogeneity of student characteristics. Participants were currently enrolled in a college-level program located in Manila and ranged in age from 18 to 30.

2.3 Research Instrument

The study utilized two psychological measures namely: The Big Five Inventory-2 (BFI-2; Soto and John (2017) and the Academic Self-Efficacy Scale (Greco et al., 2022).

Big Five Inventory-2

The BFI-2, created by Soto and John (2017), is 60 60-item psychological assessment tool, constructed to measure the Big Five traits. Føllesdal and Soto (2022) remarked that the scale features a strong hierarchical structure, reduction of acquiescent responses, and enhancement of the instrument's overall bandwidth, fidelity, and predictive validity. Moreover, the BFI-2 has undergone extensive validation and reliability testing, establishing it as a widely used and well-established measure for assessing personality traits; its nomological network incorporates significant association with various peer-reported and self-reported criteria, further solidifying its validity (Soto & John, 2017). Participants evaluated themselves according to each item using a 5-point Likert scale response format. Responses were averaged to get the total score for five personality traits. BFI-2 has coefficient alpha: Openness to Experience = .82; Conscientiousness = .90; Extraversion = .81; Agreeableness = .87; and Neuroticism = .82 (Xu et al., 2021).

Academic Self-Efficacy Scale

The scale was constructed to assess the students' confidence in managing their academic tasks. It is a 30-item scale comprising seven subfactors with Cronbach alpha: $\alpha = 0.83$ for "Planning Academic Activities"; $\alpha = 0.75$ for "Learning Strategies"; $\alpha = 0.76$ for "Information Retrieval"; $\alpha = 0.68$ for "Skills for lessons"; $\alpha = 0.80$ for "Working in Groups"; $\alpha = 0.71$ for "Management of Relationships with Teachers"; and $\alpha = 0.65$ for "Stress Management".

The participants answered on a five-point Likert scale. The final score was calculated by computing the average scores.

2.4 Data Gathering Procedure

The data was gathered by sending psychological questionnaires online and transposing them into Google Forms. All participants received an invitation and must provide informed consent before answering the questionnaires.

2.5 Data Analysis

IBM SPSS version 20 was used to analyze the data. Pearson r as a statistical tool was used to indicate the degree and direction of the variables' associations. After establishing associations, Linear regression was employed to measure the influence of each Big Five on ASE. The data was bootstrapped 10,000 times to indicate significance (Alfons, et al., 2022; Hayes, 2022).

2.6 Ethical Considerations

The researchers ensured that the participants provided the informed consent before engaging in the study without any form of coercion. The participants' anonymity was also secured, and the privacy of the data was provided. The transparency of the result transpired by initiating efforts in the publication of the study. The researchers' contact information was also provided in case the participants intend to reach out with questions or requests to withdraw during the study or the information provided. Participation was free, and withdrawal from the study was without incurring monetary damages. None of the participants reported distress. The study aimed to enhance the students' academic experience by identifying factors that might be leveraged to increase their ASE.

3.0 Results and Discussions

The study involved 201 participants, all of whom were college students from various public and private universities in Manila. The age range of the participants is from 18 to 26 years old ($M = 19$). Most participants were female ($N = 125$), while 71 were male. Five participants chose not to disclose their gender. Among the participants 166 (freshmen), 20 (sophomores), 10 (juniors), and 5 (senior) students. Regarding academic status, 180 were regular students, while the remaining 21 were irregular students.

Table 1. Pearson r : Correlations between big five personality traits and academic self-efficacy

Variable	M	SD	1	2	3	4	5	6
1. Openness to Experience	3.7888	.49821	-					
2. Conscientiousness	3.3563	.50959	.197**	-				
3. Extraversion	3.1772	.63558	.118	.352***	-			
4. Agreeableness	3.6176	.49053	.256***	.293***	.195**	-		
5. Neuroticism	3.2453	.64823	.004	-.219**	-.242**	-.198**	-	
6. Academic Self-Efficacy	3.4445	.54333	.250***	.447***	.451***	.278***	-.414***	-

Note. $N = 201$. * $p < .05$. ** $p < .01$. *** $p < .001$

Table 1 Pearson r analysis indicated a significant weak positive association between ASE and traits: Openness to experience ($r = .250$, $p < .000$), Conscientiousness ($r = .447$, $p < .000$), Extraversion ($r = .451$, $p < .000$), and Agreeableness ($r = .278$, $p < .000$). This implies that as these traits increase, ASE might also increase. In contrast, the Neuroticism trait showed a significant negative association with ASE ($r = -.414$, $p < .000$). This indicates an inverse relationship; ASE might decrease as the Neuroticism trait increases.

Although the degree of the associations of the Big Five traits was weak (Samuel & Okey, 2015), the computed p -values were lower than p -value = .001, implying a high significance level. Noticeably, Conscientiousness, Extraversion, and Neuroticism traits have a slightly higher degree of association than Openness to experience and Agreeableness, implying that the three traits might have a higher role in facilitating ASE. However, it is crucial to note that the associations do not imply causality among the variables.

Table 2. Regression analysis: Big five personality traits predict academic self-efficacy

Variables	B	R ²	Predictors	SE	95% CI		P
					LL	UL	
1. Openness to Experience	.273	.063	Predictor	.085	.105	.434	.001
2. Conscientiousness	.477	.200	Predictor	.063	.353	.603	.000
3. Extraversion	.386	.203	Predictor	.056	.276	.496	.000
4. Agreeableness	.307	.077	Predictor	.080	.147	.457	.000
5. Neuroticism	-.347	.171	Predictor	.057	-.458	-.233	.000

Note. N = 201. *indicate $p < .05$. ** $p < .01$. *** $p < .001$

The result of Linear regression showed that the Big Five significantly and robustly predicted ASE. Openness to experience ($B = .273$, $p < .000$), Conscientiousness ($B = .477$, $p < .000$), Extraversion ($B = .386$, $p < .000$). These findings were convergent with the result of prior studies (Barańczuk, 2021; Galindo-Domínguez & Bezanilla, 2021; Abood et al., 2020; Haya et al., 2020). Similarly, Wang et al. (2023) showed that the Big Five influence success in academia through the mediating linkage of SE and identity; combined with the current study findings, it might imply that these traits shape the belief system incorporated into one's identity, forming ASE. However, this assumption must be further tested.

The Agreeableness trait ($B = .307$, $p < .000$) significantly positively predicted ASE, supporting earlier findings (Rivers, 2021; Haya et al., 2020; Abood et al., 2020;). Agreeableness provides a tendency for cooperation and harmonious interactions. Students might develop good relationships with educators and co-learners, leading to perceived academic competency (Rivers, 2021).

Not surprisingly, the current study's findings indicated the Neuroticism trait's negative influence on ASE ($B = -.347$, $p < .000$). It is consistent with the prior findings (Furnham & Cheng, 2024; Li et al., 2023; Mei et al., 2022; Galindo-Domínguez & Bezanilla, 2021) The tendency toward experiencing negative emotions perpetuates mistrust and lower expectations of one's competency leading to a possible decrease in ASE.

The coefficient of determination showed that the variance can be explained by Openness to experience by 6.3% ($R^2 = .063$), Conscientiousness by 20% ($R^2 = .200$), Extraversion by 20.3% ($R^2 = .203$), Agreeableness by 7.7% ($R^2 = .077$); and Neuroticism by 17.1% ($R^2 = .171$). Conscientiousness and extraversion, followed by neuroticism, showed the highest determination on the variance of ASE, which is consistent with Pearson's analysis emphasizing the influence of these traits in ASE.

These findings advance the notion that Big Five Personality traits facilitate ASE by providing tendencies for specific psychological goals. In this regard, Openness to experience predisposes psychological goals for cognitive exploration, leading to an interest in ideas or reading books that facilitate belief systems that one has academic competency. As findings demonstrated, Openness to experience predicted academic success in arts and sciences (Britwum et al., 2022; Gatzka, 2021; Kaufman et al., 2016).

In the same reasoning, the Extraversion trait predisposes sensation-seeking and goal-pursuit, which is crucial in academic planning and accomplishing tasks. Conscientiousness trait provides tendencies for order and industriousness to maintain diligence and effort. Agreeableness offers a disposition toward cooperative behavior in building an effective team for group tasks. On the other hand, the Neuroticism trait predisposes the experience of negative emotions that might instantiate doubt and stress, lowering perceived academic competency. In this sense, these traits might be providing tendencies that facilitate confidence in one's academic competency – serving as building blocks for ASE.

Therefore, the findings of this study imply that the personality profile of college students has a role in determining their perceived academic competency. Which in turn determines their interest, efforts, stress, and performance. Developing a learning environment that provides an enriched academic experience and personality traits contributes to students' agency in pursuing specific courses. Educators may refer to students' personality profiles

to promote materials, activities, class design, or teaching methods tailored to students' tendencies to think, feel, or behave. This tailored approach may facilitate ASE that influences a positive academic experience.

4.0 Conclusion

The findings showed that Big Five traits facilitate ASE. Using the findings it might hypothesized for further research that ASE has a potential mediating linkage between Big Five traits and Academic achievement. It leads to the idea that one's predisposition facilitates a perceived competence that leads to academic achievement. The findings also open the possibility of further research investigating the congruence of personality traits and students' academic interests, program track, or specialty in predicting perceived academic competence. It could also serve as a basis for school policy using personality profiles to craft educational services promoting perceived academic competency.

The study has certain potential limitations. The study's analysis covered the association of general ASE and the broader Big Five. A finer-grained analysis that investigates the facets of the two variables might be fruitful but may require distinct conceptualization. Nonetheless, it might point to the specificity that accounts for the variables' linkage. Moreover, the sample size was small, rendering the data less generalizable. Also, considering the precision of sample population characteristics –socioeconomic status, gender/sex, and academic status (i.e., regular/non-regular) might reflect as related variables that must be controlled and investigated for future studies.

5.0 Contributions of Authors

M.A. Dasigan, M.J. Pagalaran, and N.M. Mauleon suggested that Big Five Personality traits might be related to Academic Self-Efficacy. M.A. Dasigan wrote the introduction, conducted data gathering, and analyzed the data through Pearson r. M.J. Pagalaran conducted data gathering, wrote the Research Instrument section, and wrote the participant's demographic profile; N.J. Mauleon wrote Ethical Consideration, Research Participants, and Data Analysis sections and conducted data gathering. K.D. Sanchez supervised the research, suggested the research design, analyzed the data through Linear regression, wrote the data-gathering procedure, results, discussion, conclusion, and limitations of the study sections, and wrote the final revisions.

6.0 Funding

This work received no specific grant from any funding agency.

7.0 Conflict of Interests

The authors declare no conflicts of interest about the publication of this paper.

8.0 Acknowledgment

The author expresses sincere gratitude to the following individuals who have imparted their expertise in this academic endeavor:

9.0 References

- Abood, M. H., Alharbi, B. H., Mhaidat, F., & Gazo, A. M. (2020). The relationship between personality traits, academic self-efficacy and academic adaptation among university students in Jordan. *International Journal of Higher Education*, 9(3), 120. <https://doi.org/10.5430/ijhe.v9n3p120>
- Abrams, Z. (2022). Student mental health is in crisis. Campuses are rethinking their approach. *American Psychological Association*, 53(7), 60. <https://www.apa.org/monitor/2022/10/mental-health-campus-care>
- Alfons, A., Ates, N. Y., & Groenen, P. J. F. (2022). A robust bootstrap test for mediation analysis. *Organizational Research Methods*, 25(3), 591-617. <https://doi.org/10.1177/1094428121999096>
- Alyami, M., Melyani, Z., Johani, A. A., Ullah, E., Alyami, H., Sundram, F., Hill, A., & Henning, M. (2017). The impact of self-esteem, academic self-efficacy and perceived stress on academic performance: A cross-sectional study of Saudi psychology students. *The European Journal of Educational Sciences*, 4(3), 51-63. <https://doi.org/10.19044/ejes.v4no3a5>
- Bandura, A. (2018). Toward a Psychology of Human Agency: Pathways and Reflections. *Perspectives on Psychological Science*, 13(2), 130-136. <https://doi.org/10.1177/1745691617699280>
- Bandura, A. (2019). Applying theory for human betterment. *Perspectives on Psychological Science*, 14(1), 12-15. <https://doi.org/10.1177/1745691618815165>
- Barańczuk, U. (2021). The Five-Factor Model of personality and generalized self efficacy: A meta-analysis. *Journal of Individual Differences*, 42(4), 183-193. <https://doi.org/10.1027/1614-0001/a000345>
- Britwum, F., Amoah, S. O., Acheampong, H. Y., Sefah, E. A., Djan, E. T., Jill, B. S., & Aidoo, S. (2022). Do extraversion, agreeableness, openness to experience, conscientiousness and neuroticism relate to students academic achievement: The approach of structural equation model and process macro. *International Journal of Scientific and Management Research*, 05(02), 64-79. <https://doi.org/10.37502/IJSMR.2022.5205>
- Caprara, G. V., Vecchione, M., Alessandri, G., Gerbino, M., & Barbaranelli, C. (2011). The contribution of personality traits and self-efficacy beliefs to academic achievement: A longitudinal study. *British Journal of Educational Psychology*, 81(1), 78-96. <https://doi.org/10.1348/2044-8279.002004>
- Carranza Esteban, R. F., Mamani-Benito, O., Caycho-Rodriguez, T., Lingán-Huamán, S. K., & Ruiz Mamani, P. G. (2022). Psychological distress, anxiety, and academic self-efficacy as predictors of study satisfaction among Peruvian university students during the COVID-19 pandemic. *Frontiers in Psychology*, 13, 809230. <https://doi.org/10.3389/fpsyg.2022.809230>
- DeYoung, C. G. (2015). Cybernetic big five theory. *Journal of Research in Personality*, 56, 33-58. <https://doi.org/10.1016/j.jrp.2014.07.004>
- DeYoung, C. G., & Tiberius V. (2023). Value Fulfillment from a cybernetic perspective: A new psychological theory of Well-Being. *27(1)*, 3-27. <https://doi.org/10.1177/10888683221083777>
- Fakhrou, A., & Habib, L. H. (2021). The relationship between academic self-efficacy and academic achievement in students of the department of special education. *International Journal of Higher Education*, 11(2), 1. <https://doi.org/10.5430/ijhe.v11n2p1>
- Føllesdal, H., & Soto, C. J. (2022). The Norwegian adaptation of the big five inventory-2. *Frontiers in Psychology*, 13, 858920. <https://doi.org/10.3389/fpsyg.2022.858920>
- Furnham, A., & Cheng H. (2024). The Big-Five personality factors, cognitive ability, health, and social-demographic indicators as independent predictors of self-efficacy: A longitudinal study. *Scandinavian Journal of Psychology*, 65(1), 53-60. <https://doi.org/10.1111/sjop.12953>

- Galindo-Domínguez, H. & Bezanilla, M.J. (2021). The importance of personality and self-efficacy for stress management in higher education. *International Journal of Educational Psychology*, 10 (3), 247-270. <http://dx.doi.org/10.17583/ijep.7870>
- Gatzka, T. (2021). Aspects of openness as predictors of academic achievement. *Personality and Individual Differences*, 170, 110422. <https://doi.org/10.1016/j.paid.2020.110422>
- Greco, A., Annovazzi, C., Palena, N., Camussi, E., Rossi, G., & Steca, P. (2022). Self-efficacy beliefs of university students: Examining factor validity and measurement invariance of the new academic self-efficacy scale. *Frontiers in Psychology*, 12, 498824. <https://doi.org/10.3389/fpsyg.2021.498824>
- Grotan, K., Sund, E. R., & Bjerkset, O. (2019). Mental health, academic self-efficacy and study progress among college students – the shot study, norway. *Frontiers in Psychology*, 10, 45. <https://doi.org/10.3389/fpsyg.2019.00045>
- Hayat, A. A., Kohoulat, N., Amini, M., & Faghihi, S. A. A. (2020). The predictive role of personality traits on academic performance of medical students: The mediating role of self-efficacy. *Medical Journal of the Islamic Republic of Iran*, 34(1), 1-7. <http://dx.doi.org/10.34171/mjiri.34.77>
- Hayat, A. A., Shateri, K., Amini, M., & Shokrpour, N. (2020). Relationships between academic self-efficacy, learning-related emotions, and metacognitive learning strategies with academic performance in medical students: A structural equation model. *BMC Medical Education*, 20(1), 76. <https://doi.org/10.1186/s12909-020-01995-9>
- Hayes A. F. (2022). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach (2nd ed.). The Guilford Press.
- Honick, T., & Broadbent, J. (2016). The influence of academic self-efficacy on academic performance: A systematic review. *Educational Research Review*, 17, 63–84. <https://doi.org/10.1016/j.edurev.2015.11.002>
- Honick, T., Broadbent, J., & Fuller-Tyszkiewicz, M. (2023). The self-efficacy and academic performance reciprocal relationship: the influence of task difficulty and baseline achievement on learner trajectory. *Higher Education Research and Development*, 42(8), 1936-1953, <https://doi.org/10.1080/07294360.2023.2197194>
- Iroegbu, M. N. (2015). Self Efficacy and work performance: a theoretical framework of Albert Bandura's model, review of findings, implications and directions for future research. *Psychology and Behavioral Sciences*, 4(4), 170-173. <https://doi.org/10.11648/j.pbs.20150404.15>
- Kaufman, S. B., Quilty, L. C., Grazioplene, R. G., Hirsh, J. B., Gray, J. R., Peterson, J. B., & DeYoung, C. G. (2016). Openness to experience and intellect differentially predict creative achievement in the arts and sciences. *Journal of Personality*, 84(2), 248–258. <https://doi.org/10.1111/jopy.12156>
- Li, S., Kong, K., Zhang, K., & Niu, H. (2023). The relation between college students' neuroticism and loneliness: The chain mediating roles of self-efficacy, social avoidance and distress. *Frontiers in Psychology*, 14, 1124588. <https://doi.org/10.3389/fpsyg.2023.1124588>
- Luo, Q., Chen, L., Yu, D., & Zhang K. (2023). The mediating role of learning engagement between Self-Efficacy and academic achievement among Chinese college students. *Psychology Research and Behavior Management*, 16, 1533–1543. <https://doi.org/10.2147/PRBM.S401145>
- Mei, X., Wang, H., Wang, X., Wu, X., Wu, J., & Ye, Z. (2022). Associations among neuroticism, self-efficacy, resilience and psychological distress in freshman nursing students: a cross-sectional study in China. *BMJ open*, 12(6), e059704. <https://doi.org/10.1136/bmjopen-2021-059704>
- Nasir, M., & Iqbal, S. (2019). Academic Self Efficacy as a predictor of academic achievement of students in pre service teacher training programs. *Bulletin of Education and Research*, 41(1), 33-42.
- Pedrelli, P., Nyer, M., Yeung, A., Zulauf, C., & Wilens, T. (2015). College students: Mental health problems and treatment considerations. *Academic Psychiatry*, 39(5), 503–511. <https://doi.org/10.1007/s40596-014-0205-9>
- Rippon, D., Shepherd, J., Wakefield, S., Lee, A., & Pollet, T. V. (2022). The role of self-efficacy and self-esteem in mediating positive associations between functional social support and psychological wellbeing in people with a mental health diagnosis. *Journal of Mental Health*, 1–10. <https://doi.org/10.1080/09638237.2022.2069695>
- Rivers, D. J. (2021). The role of personality traits and online academic self-efficacy in acceptance, actual use and achievement in Moodle. *Education and Information Technologies*, 26(4), 4353–4378. <https://doi.org/10.1007/s10639-021-10478-3>
- Samuel, M., & Okey, L. E. (2015). The relevance and significance of correlation in social science research. *International Journal of Sociology and Anthropology Research*, 1(3), 22–28.
- Soto, C. J., & John, O. P. (2017). The next Big Five Inventory (BFI-2): Developing and assessing a hierarchical model with 15 facets to enhance bandwidth, fidelity, and predictive power. *Journal of Personality and Social Psychology*, 113, 117–143.
- Wang, H., Liu, Y., Wang, Z., & Wang, T. (2023). The influences of the Big Five personality traits on academic achievements: Chain mediating effect based on major identity and self-efficacy. *Frontiers in Psychology*, 14, 1065554. <https://doi.org/10.3389/fpsyg.2023.1065554>
- Wilde, N., & Hsu, A. (2019). The influence of general self-efficacy on the interpretation of vicarious experience information within online learning. *International Journal of Educational Technology in Higher Education*, 16(26).
- Xu, X., Soto, C. J., & Plaks, J. E. (2021). Beyond Openness to Experience and Conscientiousness: Testing links between lower-level personality traits and American political orientation. *Journal of Personality*, 89(4), 754–773. <https://doi.org/10.1111/jopy.12613>
- Zhou, C., Yue, X. D., Zhang, X., Shangguan, F., & Zhang, X. Y. (2021). Self-efficacy and mental health problems during COVID-19 pandemic: A multiple mediation model based on the Health Belief Model. *Personality and Individual Differences*, 179, 110893. <https://doi.org/10.1016/j.paid.2021.110893>
- Zhou, X. (2022) Mental health self-efficacy as a moderator between the relationship of emotional exhaustion and knowledge hiding: Evidence from music educational students. *Frontiers in Psychology*, 13,979037. doi: 10.3389/fpsyg.2022.979037

Pamakyabe: Acculturation and Basic Psychological Needs Through the Lens of Adolescent Mag-Indi Aetas of Floridablanca, Pampanga

Paulino B. Susim

Laguna College of Business and Arts, Calamba City, Laguna, Philippines

Author Email: paulinosusim4@gmail.com

Date received: June 25, 2024

Date revised: July 17, 2024

Date accepted: July 20, 2024

Originality: 97%

Grammarly Score: 99%

Similarity: 3%

Recommended citation:

Susim, P. (2024). Pamakyabe: Acculturation and basic psychological needs through the lens of adolescent Mag-Indi Aetas of Floridablanca, Pampanga. *Journal of Interdisciplinary Perspectives*, 2(8), 618-629.
<https://doi.org/10.69569/jip.2024.0313>

Abstract. This study examined the neglect and discrimination faced by the Mag-Indi Aeta community in Florida Blanca, Pampanga, Philippines, and its impact on their mental health. It also explored the community's adaptive strategies and their implications for cultural preservation, resilience, and basic psychological needs. Using a qualitative research design and interpretative phenomenological analysis, the study investigated the lived experiences of five adolescent Mag-Indi Aetas concerning acculturation and psychological needs. The analysis revealed ten themes: Autonomy in Expression and Interaction, Autonomy in Empowerment Dynamics, Competence in Skill Utilization and Self-Esteem Enhancement, Competence in Modern and Practical Skills, Diverse Acculturation in Values, Diverse Acculturation in Behavior, Relatedness through Varied Engagement Levels, Relatedness through Diverse Emotional Interactions, Diverse Acculturation in Knowledge, and Diverse Acculturation in Cultural Identity. This research highlighted the discrimination, acculturation processes, and psychological needs of indigenous communities, advocating for inclusive and culturally sensitive programs such as self-awareness programs, Usap Tamo benches (buddy benches), IP day, and Kapatad week. These initiatives aim to improve the well-being of indigenous populations, promote cultural exchange, and eliminate discrimination and bullying.

Keywords: Acculturation; Basic psychological needs; Mag-Indi Aetas.

1.0 Introduction

Despite progress in society, Indigenous people still encounter discrimination in systemic, cultural, and interpersonal forms. Disparities in education, healthcare, and employment worsened, sustaining cycles of disadvantage. These challenges significantly contributed to mental health disparities among indigenous populations. Discrimination, whether explicit or subtle, deeply affects the mental well-being of indigenous individuals. Enduring experiences of prejudice, stereotypes, and marginalization elevated stress, anxiety, depression, and other mental health issues. The cumulative effect of daily microaggressions and institutional discrimination presented distinct challenges for Indigenous communities.

Indigenous people were the most neglected part of society and were discriminated against. As stated by Kaplan (2022), Native Americans were the neglected part of the group, stemming from the insufficient focus on the Indigenous community and the suppressed, unspoken horrors of history. As a result, the lack of access to public health services, particularly mental health services, has led to a rise in suicides among Indigenous people.

Nsoesie and Yang (2022) highlighted a disturbing increase in suicide rates among Indigenous individuals in the U.S., especially within the 10 to 34 age group, reaching its peak among all ethnic and racial groups in 2020. The concerning statistics, revealing 23.9 suicides per 100,000 Indigenous people, signified a 40% increase from 2010 to 2020. The underlying health disparities stemmed from a history of colonization, racism, and discrimination, exacerbated by unfavorable social and economic conditions.

Ren and Jiang's (2021) research on acculturative stress and basic psychological needs, which measured autonomy, relatedness, and competence among Chinese migrants, revealed that high acculturation stress was linked to low need satisfaction, high need frustration, increased depression, and decreased happiness. Acculturation stress was notably associated with depression. Need satisfaction and frustration acted as mediators, influencing happiness and depression by impairing or facilitating basic psychological needs.

The Aeta community is considered one of the earliest settlers in the Philippines. Despite a lack of comprehensive terminology to represent them, these diverse people had a significant presence throughout the Philippine archipelago, from the northern to the southern regions. Despite the enactment of the Indigenous People's Rights Act (IPRA) in 1997, according to Santos (2021), Indigenous people here still neglected their basic needs, such as healthcare and land-related deprivation, which remained the main problem of the IPs.

Due to the eruption of Mt. Pinatubo in 1991, which particularly affected the Mag-Indi Aetas, they were compelled to abandon their ancestral lands due to ashfall and lahar and sought refuge among the lowlanders. Consequently, the Mag-Indi Aetas faced discrimination from the lowlanders, attributed to their physical appearance and knowledge, as highlighted by David (2021). To address these challenges, the Mag-Indi Aetas adopted *pangangamuhan* as a strategy, serving as a coping mechanism distinct from slavery or peonage, characterized instead by a mutual agreement and resource sharing that benefited both parties. This approach was particularly advantageous for those seeking to enhance their children's lives and protect them from discrimination, even though Aeta children were not compensated for their services to the lowlanders. The Mag-Indi Aetas rejected the characterization of *pangangamuhan* as a form of slavery; instead, they perceived it as an adaptive strategy that had assisted them in navigating the difficulties posed by a swiftly changing world, marked by environmental degradation and persistent discrimination.

In Filipino culture, the coping mechanism known as *pakikisama*, or *pamakyabe* in Kapampangan, aligned with the concept of *pakikipagkapwa* towards outsiders, particularly those seeking acceptance within the dominant group. Boñon (2024) highlighted *pakikisama* or *pamakyabe* as a fundamental cultural tenet in the Filipino context, emphasizing the importance of social unity and fostering positive relationships with others. This involved displaying respect, empathy, and kindness towards individuals and groups alike, promoting adaptability and accommodation across various social contexts. However, *pakikisama/pamakyabe* could take on a negative aspect when individuals prioritize conformity to maintain smooth relations, disregarding moral principles. This negative manifestation involved submitting to peer pressure and adhering to the majority's wishes, as articulated by psychologist Virgilio Enriquez.

This research addressed the urgent need to tackle the persistent neglect and discrimination faced by indigenous communities, specifically the Mag-Indi Aeta people in Floridablanca, Pampanga, Philippines. Present-day challenges, resulting in notable disparities and bullying, led to adverse mental health outcomes among indigenous populations. Drawn on insights from studies on acculturative stress and psychological needs, the research underscored the influence of neglect and discrimination on mental well-being. The primary objective was to illuminate the adaptive strategy and its implications for the Mag-Indi Aetas. It offered valuable insights into the intricate dynamics of cultural preservation, resilience, and the influence of basic needs on Indigenous communities. Through an examination of the experiences of the Mag-Indi Aetas, the study sought to contribute to a deeper understanding of the relationships among indigenous communities, discrimination, acculturation, and basic psychological needs. Ultimately, the research aimed to advocate for more inclusive and culturally sensitive approaches to enhance the well-being of indigenous populations.

2.0 Methodology

2.1 Research Design

This qualitative study utilized a phenomenological design, specifically Interpretative Phenomenological Analysis (IPA), to explore the cultural perspectives and lived experiences of adolescent Mag-Indi Aetas. According to Busetto et al. (2020), qualitative research involves examining phenomena's characteristics and contexts through non-numeric data, such as text, video, or audio, to understand concepts, opinions, or experiences. This approach was essential for investigating the acculturation process of the adolescent Mag-Indi Aetas. Gill (2020) also highlighted that phenomenology aims to comprehend how individuals perceive phenomena within specific contexts, using interviews and participant observation to gather detailed information. This approach focuses on individual experiences and subjective perspectives, making it particularly effective for exploring motivations and challenging assumptions. This study employed phenomenology to delve into the life experiences, perceptions, and cultural complexities of the adolescent Mag-Indi Aetas. The study used comprehensive methods such as in-depth interviews, participant observations, and discussions to uncover the unique experiences, values, and customs of the Mag-Indi Aetas. By avoiding preconceived notions, the researcher allowed the participants to narrate their stories, revealing the subtleties of their lives and traditions. Moreover, Smith and Nizza (2022) explained that IPA aims to interpret how individuals understand their experiences by analyzing participant responses in detail, focusing on themes, emotions, and meanings. This method provided a thorough understanding of the adolescent Mag-Indi Aetas' narratives and the significance they attach to their experiences.

2.2 Research Locale

The research was conducted among adolescents in the Mag-Indi Aetas communities in Floridablanca, Pampanga. As David (2021) mentioned, the eruption of Mt. Pinatubo compelled the Mag-Indi Aetas to relocate alongside the lowlanders due to the presence of ash and lahar. The Pinatubo Development Organization established Ayta resettlement sites where the Aetas were required to reside, farm, and work with the "*unat*", a type of living they were not accustomed to. Due to this, an acculturative adaptation of *pangangamuhan* has been developed by Aetas to aid them in adaptation to the challenges of a continuous change of the world, marked by the swift degradation of their natural surroundings and the presence of discrimination against them. Floridablanca, Pampanga, was selected for research on acculturation and basic psychological needs due to its substantial Mag-Indi Aeta population, known for its rich cultural heritage. The community's unique position at the intersection of traditional lifestyles and modernization pressures makes it an ideal setting to study acculturation. Floridablanca's diverse social and cultural environment provides a dynamic context to explore how the adolescent Mag-Indi Aetas navigate their identity, maintain their cultural practices, and meet their psychological needs amid continuous changes. This setting offers valuable insights into the resilience and adaptability of Indigenous groups facing external influences, making it a pertinent location for such research.

2.3 Research Participants

This study conducted five interviews with members of the Mag-Indi Aetas community in Floridablanca, Pampanga, particularly adolescents. As Subedi (2021) posits, qualitative research operates on the premise that reality is socially constructed and subjective, emphasizing collaborative knowledge formation between researchers and participants. Utilizing small, purposefully selected samples enables a deep exploration of individual experiences, yielding nuanced insights. Furthermore, it fosters close relationships between researchers and participants, enhancing data quality and supporting the creation of thorough, contextually rich descriptions.

This research targeted adolescent Mag-Indi Aetas aged 15 to 20, as they are significantly impacted by cultural shifts in their community. According to Gordon (2022), individuals at this stage begin to adopt global perspectives and contemplate their roles within broader societal dynamics. Adolescents were selected due to their active socialization, which plays a crucial role in their personal development. The data table includes participants' age, preferred aliases or nicknames, gender, civil status, and grade level. If participants do not provide a nickname, the researcher will assign "IP" followed by a number, by American Psychological Association (2015) guidelines for referring to Indigenous Peoples.

2.4 Research Instrument

The semi-structured questionnaire was designed to capture the real-life experiences of adolescent Mag-Indi Aetas aged 15 to 20 years. It was rooted in Berry's Acculturation Theory, which encompasses four distinct acculturation

attitudes: Integration, Separation, Assimilation, and Marginalization, to understand the attitude of adolescent Mag-Indi Aetas in the 21st century. The set of questions is based on Kim and Abreu's study results. The researcher patterned the questions into four dimensions as follows: (a) Behavior: Person's choice of friends, foods, etc. (b) Values: Attitudes and beliefs, cultural customs, social beliefs, etc. (c) Knowledge: Person's knowledge about the culture. (d) Cultural identity: Attitudes toward one's cultural identification.

This research also patterned the questions on Basic Psychological Needs Theory (BPNT), including Autonomy To check volition, initiative, and self-determination. Relatedness: To know if the adolescent Mag-Indi Aetas experience closeness and a feeling of connectedness to the current community. Competence: To determine if they are effective and capable of achieving goals despite different cultural views.

Five esteemed validators with expertise in cultural psychology, thesis writing, and Indigenous peoples were meticulously selected to validate the instrument. These validators, chosen for their significant expertise, ensured the instrument's reliability and effectiveness. The validation process entailed a comprehensive review of the questionnaire's questions, assessing clarity, conciseness, and relevance, and offering feedback to enhance the instrument for optimal data collection. Additionally, the researcher utilized Lawshe's content validity method to evaluate the instrument's accuracy, aiming for a high content validity score. Each item was classified as "essential," "useful but not essential," or "not necessary," resulting in a post-validation score of 0.99 per item. This rigorous validation process ensured the instrument's effectiveness in capturing the acculturation of adolescent Mag-Indi Aetas and their basic psychological needs.

2.5 Data Gathering Procedure

This research involved collaboration with local authorities in Floridablanca, Pampanga, the National Commission on Indigenous People Region III (NCIP Region III), and the NCIP Pampanga Community Service Center to secure permits for interviewing adolescent Mag-Indi Aetas. This collaboration ensured compliance with local regulations and official authorization. The permit application outlined the study's goals, methodology, participant criteria, and validated questions. Informed consent was obtained from the NCIP Region III representative and Indigenous People Mandatory Representative (IPMR) for participants under 18, ensuring ethical standards and protecting participants' rights. Data collection included documenting individual interviews with audio and video recordings, with procedures communicated to interviewees, NCIP Region III, and IPMR as part of the informed consent process. Initial data collection focused on demographic information to build rapport, followed by friendly introductions, outlining research objectives, and addressing potential discomfort. Information on hotlines was provided for any post-interview issues.

Moreover, the research aimed to ensure trustworthiness through rigorous qualitative methodologies, including thorough interviews and literature reviews. Two theories enhanced credibility and understanding of acculturation and basic psychological needs. Detailed descriptions of the Mag-Indi Aeta community's cultural, social, and historical background supported the transferability of findings to similar indigenous groups. Consistency in data collection and insights from internal qualitative data analysts ensured objectivity with a transparent audit trail of research decisions and processes. These strategies aimed to produce credible, transferable, dependable, and confirmable insights into Indigenous youth well-being and cultural adaptation. Recorded interviews allowed for meticulous review and analysis, enhancing the researcher's ability to extract deeper insights and comprehensively understand participants' perspectives.

2.6 Ethical Consideration

Involving adolescent participants, this study acknowledged the necessity of securing informed consent from parents or local authorities. Collaboration with local government entities was pivotal in obtaining official approval to interview young members of the Indigenous community, specifically adolescent Mag-Indi Aetas. During one-on-one interviews, informed consent was conveyed through both written and verbal means to ensure participants and their guardians fully comprehended and agreed to the study's terms. This dual approach facilitated open communication and addressed any concerns or inquiries. The informed consent document detailed the study's objectives, confidentiality guarantees, and procedures for recording and transcribing interviews for data analysis. This method upheld ethical standards and demonstrated transparency, respect, and concern for the well-being of adolescent Mag-Indi Aetas participants.

Additionally, to safeguard confidentiality, participants were encouraged to select an alias or pseudonym; alternatively, one was assigned to them as necessary. As Kang and Hwang (2023) noted, ensuring participant anonymity enhances data integrity by fostering a secure environment conducive to honest sharing and increased participation. Lastly, participation in this study was voluntary, with individuals retaining the right to withdraw at any data collection stage. Access to video recordings used for transcription was restricted to ensure secure data handling and protect participant identities throughout the research process. These practices underscored ethical principles, prioritizing autonomy and privacy for all participants.

3.0 Results and Discussion

Researchers identified ten (10) thematic categories.

Theme 1: Adapt Harmoniously and Communicate Assertively

The responses of adolescent Mag-Indi Aetas reflect their adaptation to the challenges within their current community. For those prioritizing unity with lowlanders, resolving conflicts involves a delicate balance of diplomacy and reconciliation. As articulated by Rose,

"I want to ensure that I maintain good relations with them. I'm determined to integrate myself so fully I don't feel left behind. Just because I come from a different background doesn't mean I can't connect with them."

This demonstrates their cautious approach, potentially overlooking certain conflicts or addressing them diplomatically to preserve community harmony. Conversely, for those impacted by bullying and discrimination, like Lay 2, who stated,

"Baluga. They don't know that we also have feelings; it hurts to be called baluga. It's acceptable to us if they call us brother/sister. That's the appropriate term, not baluga. have a classmate who has been called 'oy baluga,' and he did not react to it."

Adolescent Mag-Indi Aetas assertively express their beliefs and needs, establishing boundaries that demand respect and independence. In navigating conflicts, they emerge as advocates for self-expression, crafting narratives of empowerment and self-worth. Ultimately, the responses of adolescent Mag-Indi Aetas underscore their resilience as they adapt strategies to assert autonomy amidst the challenges in their community. Thompson (2023) emphasizes the personal and professional benefits of embracing adaptability, which enhances resilience and clarity during challenging transitions. Adaptability supports psychological well-being, facilitates smooth career changes, and strengthens resilience in overcoming obstacles. Similarly, assertiveness, discussed in "Being assertive: Reduce stress, communicate better" (2024), empowers individuals to effectively express ideas, advocate for beliefs, and manage stress through clear, respectful communication. Proficiency in assertiveness fosters self-assurance, enriches interpersonal relationships, and contributes to overall personal and professional fulfillment.

Theme 2: Empowerment Through Education and Traditions

It illuminates how adolescent Mag-Indi Aetas employ strategic approaches to assert autonomy within their community. They utilize their cultural heritage as a source of resilience to overcome challenges and pursue personal development and advancement. As articulated by Rose,

"I will study hard for Indigenous people like me to show them the importance of education. Some of them cannot afford it because they live too far from school, unlike here, where the school is nearby."

This underscores education's pivotal role as a catalyst for empowerment and progress within the community, with participants showing unwavering commitment to academic excellence. Their aspirations extend beyond personal achievement to serve as inspirations for others facing educational barriers in the Indigenous community. Furthermore, the theme underscores the significance of cultural heritage in shaping identity and strength among adolescent Mag-Indi Aetas. Participants draw strength from their cultural traditions and community support, asserting their independence and reinforcing their unique identity within a diverse societal context. However, the theme also reveals some individuals' challenges when their cultural practices are disregarded, leading to isolation and frustration. As expressed by Lay 2,

"Sometimes it is helpful, sometimes not, because it feels like what we are doing is nonsense, as they do not believe in us, on our traditions."

When individuals encounter conflicting perspectives on their cultural heritage, this can result in disconnection and alienation. Assigning autonomy and preserving a strong identity becomes difficult without recognition or acceptance of their traditions and beliefs. These challenges often lead to frustration, isolation, or inadequacy as individuals strive to reconcile their cultural background with external pressures. Ultimately, achieving autonomy in cultural identity is hindered without the necessary validation and support to embrace and uphold one's heritage.

Moreover, Bohnsack (2021) underscores adolescents' strong pursuit of autonomy during critical life stages such as toddlerhood and adolescence. Autonomy involves independent thinking, acting, and feeling, enabling individuals to self-regulate and make decisions independently. During adolescence, young people seek to define their identities as distinct from parental influence, a process influenced by caregivers who can either nurture or hinder it. While autonomy fosters problem-solving skills, values formation, and responsibility-taking, excessive autonomy without proper guidance can impede developmental growth. Conversely, overly protective caregiver behaviors may inadvertently push adolescents to seek autonomy through harmful means.

Theme 3: Enhancing Self-Esteem and Reading Skills

This explores the impact of education and community support on adolescent Mag-indi Aetas in Floridablanca, Pampanga. Participants' stories highlight their dedication to improving reading skills with community assistance, recognizing reading proficiency's importance for learning and social interaction. As Kay-Kay articulated,

"Now that we are living with Kapampangan, our confidence is boosting. Before, the old Aetas did not have confidence in themselves. But since we are living with Kapampangan, our confidence is growing stronger. We are no longer shy about interacting with them. We are no longer shy when we report in front of the class."

Support from the Kapampangan community significantly boosts confidence among adolescents, empowering them to engage more confidently in various aspects of life. This encouragement fosters a belief in their abilities and equips them with the resilience to overcome challenges. Furthermore, the achievements of indigenous individuals who have pursued higher education serve as inspirations and role models, motivating adolescents to pursue their goals across different areas of life. Overall, the study underscores how education, community support, role models, and competency enhancement empower adolescent Mag-Indi Aetas to navigate challenges, seize opportunities, and achieve personal and professional growth.

According to Ashworth (2023), competencies encompass skills, knowledge, behaviors, attitudes, and attributes essential for success in diverse roles. Recognizing and demonstrating competencies is crucial for professional development, and they can be enhanced through career planning, self-assessment, goal setting, continuous learning, feedback-seeking, mentorship, collaboration, workshops, technological integration, experimentation, progress monitoring, perseverance, and highlighting achievements.

Theme 4: Effectiveness of Modernization and Practical Skills

Despite modern influences, it explores how traditional customs endure within Floridablanca's Mag-Indi Aeta community. Kay-Kay illustrates this resilience:

"For example, when we sow crops, and they bear fruits, we offer some fruits as a gesture of gratitude. This allows us to sell the remaining fruits."

This ritual underscores the community's adeptness at preserving essential traditions for livelihood and cohesion. However, modernization poses challenges, particularly among kulot individuals in lowland areas, as Ney suggests:

"I'm not sure, maybe not, because we are modern now. That's my parents' belief."

Some individuals question traditional relevance, leaning towards modern practices influenced by societal norms and parental guidance. This dynamic reflects their evolving competence in navigating tradition and modernity, adapting practices to meet contemporary needs while safeguarding cultural heritage. This response demonstrates a nuanced understanding of cultural identity and a commitment to preserving traditions amidst evolving societal norms. Windon (2023) further supports this theme, emphasizing the significance of adopting cross-cultural attitudes and approaches to enhance communication in diverse contexts. Situating cultural competence within a globalized and increasingly diverse world, Windon highlights the need for individuals and organizations to recognize, assess, and adjust their cultural behaviors. Cultivating cultural competence enhances productivity, customer service, and intercultural communication skills, fostering mutual understanding and respect across varied cultural landscapes.

Theme 5: Acculturation Through Integration and Separation of Values

This examines how cultural values are assimilated through education, fostering mutual understanding and enrichment within a diverse community. Lay 2 explains,

"I'm sharing our traditions with them so they can understand our cultural practices. We explain what we do in the mountains, highlighting our traditions. Even though our houses may not be impressive, we are wealthy in land ownership, and we cultivate various crops."

This integration highlights sharing indigenous traditions with Kapampangan culture, promoting a deeper appreciation and facilitating harmonious coexistence amid societal shifts. Conversely, distinct indigenous traditions persist, safeguarding cultural practices. Lay 1 exemplifies this separation:

"That's not the case for them. For them, playing with a gecko is just a joke, but for us, it can make you sick. I'll withdraw from the scene instead."

The kulot community maintains unique customs, choosing distance to preserve their values and well-being. This commitment underscores their dedication to tradition amidst diverse community perspectives. Moreover, Dixon (2019) notes that individuals integrating into a new culture often experience improved psychological health and reduced acculturative stress compared to those choosing alternative paths. Integration acts as a shield against mental health issues like depression, anxiety, and stress. Furthermore, integration mitigates the adverse effects of discrimination, providing resilience against acculturative stress and psychological challenges faced by immigrants in contexts of prejudice and discrimination. This underscores the importance of adaptive cultural integration in fostering well-being and resilience within diverse communities.

Theme 6: Assimilation Through Learning, Integration through Interacting, and Separation due to Bullying

This explores the complex process of blending cultural heritage with new environments, revealing significant implications for personal growth and community cohesion among adolescent Mag-Indi Aetas. Integration of cultural heritage into new settings takes varied forms. While some adolescents choose educational institutions with diverse cultural backgrounds to boost confidence and broaden their horizons, others prefer interaction within their Indigenous community, as illustrated by statements from Kay-Kay and Lay 1. According to Kay-Kay,

"Mostly Aetas. However, most of our room is made up of Kapampangans. For instance, we have a school in our area for Aetas, but I prefer not to study there because everyone is kulot. Even though they are studying, they still appear shy. It's beneficial to interact with different people. It helps boost your confidence."

Consistent with acculturation theory, this assimilation process may lead to shifts in cultural identity and practices as knowledge and values from the dominant culture are assimilated. Conversely, some adolescents distance themselves from the dominant culture, potentially as a form of resistance or cultural preservation. As stated by Lay 1,

"None, with my kulot friends. Sometimes, the unat bully us."

They seek security and belonging within their cultural circle by associating with familiar peers and customs, shielding themselves from potential mistreatment or conflict. Moreover, Cuncic (2024) highlights the pivotal role

of friendships in adolescents' lives, offering support during difficult times and enriching their experiences in various ways. Emotionally, friends provide invaluable support and positively influence mood and self-esteem. Happiness and confidence spread easily among friends, and a supportive social circle significantly enhances one's sense of self-worth and resilience in challenging situations. Additionally, friendships are crucial in reducing stress and fostering a sense of belonging and community. Their presence mitigates the impact of stressful events, creating an environment where individuals feel valued and accepted. Ultimately, friendships shape values and character, motivating adolescents to strive for self-improvement and achieve their potential by surrounding themselves with positive influences and supportive peers.

Theme 7: Relatedness to Own Culture and Disconnection from Others Due to Bullying

It explores the intricate dynamics of cultural integration and preservation among adolescent Mag-Indi Aetas. Despite the availability of community-specific schools, some adolescents choose educational institutions with diverse cultural backgrounds to broaden their perspectives and enhance their self-esteem. As articulated by Rose,

"I prefer spending time with the unat because I learn new things from them."

This challenges the notion that educational success requires cultural uniformity, highlighting the benefits of exposure to diverse educational environments. However, tensions between preserving cultural identity and assimilating into dominant cultural norms are apparent. While some retreat into their Indigenous community, others resist or selectively adopt aspects of the dominant culture while preserving elements of their heritage. Negative experiences, particularly bullying, can significantly impact cultural identity, prompting some individuals to distance themselves from the dominant culture and seek refuge within their community. As expressed by Lay 1,

"Kulot, because I enjoy their companionship. We're different because she prefers to be with the unat [referring to the other kulot]. I prefer to be with my tribe because many of the unat bully us due to our physical features. So, no, I don't usually interact with the unat."

This reluctance to interact with the dominant group underscores the challenges faced by adolescent Mag-Indi Aetas in navigating cultural differences and maintaining their cultural integrity amidst adversity. These insights underscore the dynamic nature of cultural integration and preservation among adolescent Mag-Indi Aetas, emphasizing the importance of respecting and acknowledging diverse cultural experiences. Creating inclusive environments where individuals can freely express their cultural identities is crucial for fostering social cohesion amidst evolving societal landscapes.

Furthermore, Yusof et al. (2020) underscored the significance of relatedness as a fundamental aspect of the basic psychological needs theory within educational contexts. Grounded in the self-determination theory, this emphasizes the importance of feeling valued and forming connections with others to enhance self-confidence and motivation. Beyond academic achievement, university experiences contribute to developing values such as respect, collaboration, and community engagement. Peer interactions are pivotal in campus dynamics, empowering students to undertake meaningful initiatives that positively impact their surroundings, supported by faculty and student affairs professionals.

Theme 8: Emotional Connection to Own Culture and Disconnection with Others

It delves into the complex dynamics of cultural interactions among adolescent Mag-Indi Aetas within a diverse community. According to Ney,

"I'm happy too. They enjoy joking around and getting along. For example, when it comes to mountain foods like corn and tamarind, they love sharing them. However, some Kapampangans, for instance, can be picky and may not enjoy these foods."

This highlights that interactions within their cultural circle evoke feelings of happiness and belonging, while engagements with individuals from diverse backgrounds offer opportunities for personal growth and cultural understanding. Conversely, negative experiences with members of the dominant culture, such as bullying or

social exclusion, create discomfort and hinder the formation of genuine connections across cultural divides. Ney also mentioned,

"I'm also happy, but sometimes they bully me, teasing me. We can't avoid it. In Kapampangan, you think twice about what they might do to you. It feels like you're overthinking whether they'll do something to you. It feels like they're backstabbing you behind your back."

Moreover, some adolescents display emotional detachment when interacting with those from different cultural backgrounds, potentially hindering efforts to foster appreciation for diversity. These findings underscore the importance of cultivating inclusive environments, prioritizing mutual respect and cross-cultural understanding, and facilitating social cohesion amidst the evolving societal landscape.

Lawrenz (2021) highlighted the significance of social connections in shaping individual well-being, emphasizing their impact on mood and emotional health. Meaningful interactions foster closeness and belonging, enhancing one's sense of value, understanding, and appreciation. By emphasizing human connection, individuals can strengthen social ties, alleviate loneliness, and enhance emotional resilience. Ultimately, nurturing authentic relationships enriches life experiences and improves mental and emotional well-being.

Theme 9: Assimilation and Separation through Cultural Knowledge

This explores how acculturation influences the learning and knowledge transmission among diverse cultures, particularly within the adolescent Mag-Indi Aeta community. The research identifies various adaptations indicative of acculturation, notably the assimilation observed through the gradual integration of certain traditional practices into mainstream culture. Rose's statement reflects this trend:

"Some of it only. These are the practices that our tribe mostly engages in, but not consistently, as our parents do not regularly adhere to them. We participate only during special occasions."

The influence of Kapampangan culture has contributed to the decline of ancestral traditions, as some Aetas adopt Kapampangan customs. This illustrates a broader phenomenon of cultural erosion in which traditional practices yield to dominant cultural norms. Despite these adaptations, participants preserve their heritage, demonstrating remarkable cultural resilience. Lay 2 exemplified by their belief in spiritual causes of illness:

"For example, when they are ill, sometimes we attribute the sickness to spirits. They do not believe us if we inform them that spirits are causing their illness."

This dynamic between acculturation and cultural preservation underscores the ongoing negotiation of identity within diverse communities, highlighting the significance of embracing and celebrating cultural diversity. According to Wisner (2023), cultural awareness, or cultural sensitivity, involves recognizing and appreciating the commonalities and differences among diverse cultural groups. It requires curiosity, openness, and a willingness to explore the spectrum of cultural diversity while being mindful of one's cultural biases. Cultivating cultural awareness is critical for fostering better interpersonal connections, creating healthier organizational climates, and advancing the development of a more empathetic society. While recognizing the importance of cultural awareness is foundational, actively engaging in its development is essential. This involves acknowledging personal biases, seeking knowledge about diverse cultural traditions, and engaging in meaningful interactions with individuals from various backgrounds. It is an ongoing journey marked by openness, respect, and a willingness to learn from experiences and interactions.

Theme 10: Assimilation and Preservation of Cultural Identity

It underscores the critical importance of cultural identity for individuals and communities, encompassing aspects like heritage, customs, language, beliefs, and values. However, among indigenous groups such as the Mag-Indi Aetas, assimilation into a new cultural identity often leads to the neglect and erosion of their authentic cultural heritage. This transformation is evident in the experiences of three participants who have adopted practices from the dominant Kapampangan culture, resulting in a detachment from their cultural roots. Kay-Kay's statement reflects this shift:

"The tradition of most Aetas now mirrors that of the Kapampangan, so we are essentially similar to the Kapampangan. I can speak the Kapampangan language fluently, but when I'm with other kulots who speak the Mag-Indi language, I can understand them somewhat, but I struggle to communicate or respond in kind."

Their readiness to embrace new ideologies influenced by factors such as social acceptance poses challenges to the sustained preservation of traditional customs. In contrast, some adolescent Mag-Indi Aetas uphold their cultural identity by distancing themselves from the dominant group. Two participants express their disconnection from Kapampangan traditions and reluctance to interact with individuals outside their cultural circle, illustrating this separation. As stated by Lay 1,

"I don't like that either. As I mentioned earlier, I don't like to associate with unat."

Despite their deep attachment to their cultural origins, they exhibit limited engagement with other cultures, preferring the familiarity of their community. While they hold their cultural legacy in high esteem, they demonstrate hesitancy or disinterest in exploring alternative cultural perspectives beyond their immediate environment. According to Heyl (2023), cultural identity encompasses individuals' connection with their cultural group, incorporating elements beyond ethnicity such as religion, gender expression, and regional traditions. Strong personal identity significantly correlates with improved mental health outcomes, facilitating social connections crucial for overall well-being and fostering a sense of community and shared experiences that shape perspectives and enhance a sense of belonging.

4.0 Conclusions

This research sheds light on how adolescents navigate cultural adaptation and resilience amidst societal challenges, advancing the understanding of resilience theories in psychology, particularly concerning the influence of cultural identity on adaptive strategies and psychological well-being. The study aligns with identity development theories by exploring how adolescents negotiate their identities within diverse cultural contexts. It underscores the impact of cultural identity formation on self-esteem, autonomy, and emotional well-being, essential aspects of adolescent psychology.

The research suggests that adolescent Mag-Indi Aetas should engage in cultural immersion to adapt to ongoing modernization in their community. This involvement helps them gain insights into various perspectives, customs, and values, fostering the flexibility to navigate changing circumstances effectively. Through interactions with different cultures, they can deepen their understanding of societal changes and develop the resilience to preserve their cultural heritage amidst evolving trends. Cultural immersion offers numerous benefits, including enhancing cognitive flexibility, promoting empathy, and fostering a sense of belonging and identity formation, ultimately equipping adolescent Mag-Indi Aetas with the skills and resilience needed to navigate modernization while enhancing their psychological development and cultural identity.

Themes such as bullying, social exclusion, and peer relationships significantly contribute to understanding adolescents' social and emotional development, particularly Mag-Indi Aeta adolescents, emphasizing the importance of community support and interpersonal relationships in fostering psychological resilience and emotional health. Recognizing the psychological impact of the fear of missing out (FOMO) on adolescent Mag-Indi Aetas, Kapampangan individuals must cultivate empathy towards Indigenous communities, understanding the stress, anxiety, depression, and loneliness that may arise from feelings of marginalization. By acknowledging these challenges, Kapampangan individuals can create a more inclusive environment through active listening, advocacy for Indigenous rights, and initiatives promoting cultural understanding and unity, contributing to a fairer, more cohesive society where everyone feels valued and included.

The family of adolescent Mag-Indi Aetas should encourage their children to interact with lowlanders to enhance their psychological growth and social integration. These interactions fulfill fundamental psychological needs such as autonomy, competence, and relatedness. However, it is crucial for families to emphasize maintaining a connection with their cultural heritage while engaging with lowlanders. This ensures that adolescent Mag-Indi Aetas develop a robust sense of self while cherishing their cultural legacy and promoting cultural continuity within their community.

The research also highlights the transformative role of education in empowering adolescents, bridging cultural gaps, and enhancing self-esteem through academic achievement, supporting theories in educational psychology that stress the importance of supportive learning environments and cultural competence in educational outcomes. Teachers and school faculty are critical in fostering inclusivity and fair treatment for Mag-Indi Aeta students in educational settings. By advocating for inclusivity, educators can establish a nurturing environment where every student feels valued and respected regardless of their cultural background, addressing and eradicating instances of discrimination or bullying, thereby enhancing the academic performance and overall psychological health of Mag-Indi Aeta students and upholding essential principles of social justice and human rights.

Collaborative efforts involving local government units, the National Commission on Indigenous Peoples Region III (NCIP Region III), and the Indigenous Peoples Mandatory Representative (IPMR) are crucial for raising awareness about Indigenous communities among lowlanders. This initiative aims to promote cultural understanding and address psychological factors such as prejudice, discrimination, and stereotyping through educational campaigns, workshops, and cultural events, challenging biases and negative perceptions directed at indigenous communities and fostering empathy and social unity.

Future researchers could conduct comparative studies involving participants from different indigenous groups, encompassing a wider age range and larger sample sizes. Investigating the influence of parental attitudes toward cultural heritage on adolescents' adaptation strategies and self-concept, as well as examining the impact of gender, socioeconomic status, and other intersecting identities on cultural adaptation and resilience, would provide a more comprehensive understanding of the diverse experiences within the Mag-Indi Aeta community. This intersectional approach can offer deeper insights into the multifaceted nature of cultural adaptation and resilience among adolescents.

5.0 Contributions of Author

The author conducted and funded the research, which underwent a thorough panel review and underwent editing for language and format.

6.0 Funding

This research is not funded by any private or local agency.

7.0 Conflict of Interest

The authors declare no conflicts of interest about the publication of this paper.

8.0 Acknowledgement

The researcher deeply thanks his family for their unwavering support throughout this journey. Acknowledgments include his mother, Marissa, for encouragement to see tasks through and his father, Paulino III, whose guidance is felt despite his physical absence. Thanks also to sisters Lezlie, Liezl, and Leila for their steadfast support and inspiration. Gratitude extends to Ima for unconditional love and continuous encouragement. Special thanks are given to Salome and Moises Angcon for generous lodging and assistance, ensuring the researcher's extended stay. Jay Mark is recognized as a significant source of inspiration and unwavering support. The research adviser, Sir. Ronel E. Tarcilo, is acknowledged for patience and knowledge sharing, particularly in qualitative aspects crucial to completing this research. Recognition goes to Uzziel G. De Loyola and Isiah Eugene G. Peji for validating the survey form. The qualitative data analyst, Sir Bernard Christopher A. Catam, is thanked for meticulous scrutiny enhancing study credibility. Dr. Ma. Lorena M. Tagala is acknowledged for her invaluable expertise and support. Heartfelt appreciation is extended to friends and colleagues Daryl, Margarette, Ate Karizza, Ate Queng, Madeleine, Ericka, Jen, Clars, Sir. Pol and Angelo, thank you for your unwavering support during challenging times. Esteemed panelists are recognized for valuable insights and trust in the research process. Classmates Doc Egaie, Ms. Geng, and Ms. Elaine are thanked for motivating words that kept the researcher on course. NCIP Region III, Sir. Ira, Ma'am Lydia, IPMR, Sir. Joey and the Mag-Indi Aetas are honored as champions and inspirations behind the study's realization, and their cooperation makes the research possible. Finally, Almighty God expresses profound gratitude for strength, guidance, knowledge, and ensuring health and safety throughout the journey.

9.0 References

- Ashworth, H. (2023, November 20). Competencies: A Definition Psychometric Success. Psychometric Success. <https://psychometric-success.com/interview-advice/competencies/competencies-definition>
- Bohnsack, K. (2021, May 5). Autonomy in Adolescents. Adolescent Counseling Services.
- Boñon, W. (2024). Pakikisama in Dialogue with Aquinas' Amicitia. *Philippiniana Sacra*, 59(178), 27–46. <https://doi.org/10.55997/1003pslix178a2>
- Busetto, L., Wick, W., & Gumbinger, C. (2020). How to use and assess qualitative research methods. *Neurological Research and Practice*, 2(1), 14. <https://doi.org/10.1186/s42466-020-00059-z>
- Cuncic, A. (2024, April 24). 6 Benefits of Friendship and Why It's So Important to Stay Close. Verywellmind. <https://www.verywellmind.com/the-importance-of-friendship-3024371>
- David, K. C. (2021). Ang Amo at Maamo: Pangangamuhan among the Ayta Mag-Indi of Pampanga, Philippines. *Journal of Critical Perspectives*, 57(2), 1–35.
- Dixon, T. (2019, January 27). Key Studies: Effects of acculturation on behaviour. IB Psychology.
- Gill, M. J. (2020, January). Phenomenology as qualitative methodology. Research Gate.
- Gordon, S. (2022, March 10). 16-Year-Old Child Development Milestones. VeryWellFamily. <https://www.verywellfamily.com/16-year-old-developmental-milestones-4171922>
- Heyl, J. (2023, May 24). How Embracing Your Cultural Identity Can Help Your Mental Health. VeryWellMind: <https://www.verywellmind.com/how-embracing-your-cultural-identity-can-help-your-mental-health-7487052>
- Kang, E., & Hwang, H.-J. (2023, March). The Importance of Anonymity and Confidentiality for Conducting Survey Research. ResearchGate.
- Kaplan, G. (2022, April 20). A Legacy of Negligence: The Historical Mistreatment of Indigenous Peoples in the United States. *Berkley Public Policy Journal*. <https://bppj.berkeley.edu/2022/04/20/a-legacy-of-negligence-the-historical-mistreatment-of-indigenous-peoples-in-the-united-states/>
- Lawrenz, L. (2021, November 15). The Importance of Connection. Psychcentral. <https://psychcentral.com/lib/the-importance-of-connection>
- Nsoesie, E. O., & Yang, Y. (2022, November 29). The High Suicide Rates Among Indigenous Populations. *Public Health Post*. <https://www.publichealthpost.org/databyte/suicide-rates-indigenous/>

- Ren, Q., & Jiang, S. (2021). Acculturation stress, satisfaction, and frustration of basic psychological needs and mental health of chinese migrant children: Perspective from basic psychological needs theory. *International Journal of Environmental Research and Public Health*, 18(9), 4751. <https://doi.org/10.3390/ijerph18094751>
- Santos, J. (2021, October 16). Indigenous peoples remain neglected despite law passed 24 years ago – CHR. *Manila Bulletin*. <https://mb.com.ph/2021/10/15/indigenous-peoples-remain-neglected-despite-law-passed-24-years-ago-chr/>
- Smith, J. A., & Nizza, I. A. (2022). What is interpretative phenomenological analysis. *APA Psychnet*. <https://doi.org/10.1037/0000259-001>
- Subedi, K. (2021, December). Determining the Sample in Qualitative Research. *ResearchGate*. <https://doi.org/10.3126/scholars.v4i1.42457>
- Thompson, J. (2023, February 21). How Well Do You Handle Change? The Benefits of Being Adaptable. *BDC*. <https://www.business.com/articles/how-well-do-you-handle-change-the-benefits-of-being-adaptable/>
- Winston, S. (2023, May 1). What is Cultural Competence and How to Develop It? *PennState Extension*. <https://extension.psu.edu/what-is-cultural-competence-and-how-to-develop-it>
- Wisner, W. (2023, May 26). Cultural Awareness – How to Be More Culturally Aware & Improve Your Relationships. *Verywellmind*. <https://www.verywellmind.com/cultural-awareness-importance-how-to-develop-it-7500316>
- Yusof, N., Awang-Hashim, R., Kaur, A., Abdul Malek, M., Suppiah Shanmugam, S. K., Abdul Manaf, N. A., Seow Voon Yee, A., & Zubairi, A. M. (2020). The role of relatedness in student learning experiences. *Asian Journal of University Education*, 16(2), 235. <https://doi.org/10.24191/ajue.v16i2.10308>

Career Trajectory: A Longitudinal Analysis of Criminology Graduates' Attributes and Professional Success in a Private HEI

John Robby O. Robinos*, Ricky Boy Camilon, Fortunato Sagudo Jr

University of Perpetual Help System DALTA – Molino Campus, Bacoar City, Philippines

*Corresponding Author Email: john.robinos@perpetualdalta.edu.ph

Date received: July 2, 2024

Date revised: July 17, 2024

Date accepted: July 20, 2024

Originality: 95%

Grammarly Score: 99%

Similarity: 5%

Recommended citation:

Robinos, J.R., Camilon, R.B., Sagudo, F. (2024). Career trajectory: A longitudinal analysis of criminology graduates' attributes and professional success in a private HEI. *Journal of Interdisciplinary Perspectives*, 2(8), 630-636. <https://doi.org/10.69569/jip.2024.0325>

Abstract. All graduates aspire for career progression, successful career paths, and maximum professional development. The increasing demand for professionals to address emerging societal issues and new trends locally and globally necessitates continuous adaptation and upskilling to meet the evolving needs of society and personal career trajectories. This research analyzes graduates' attributes and their alignment with professional success. Thirty (30) alumni of BS Criminology in a private HEI, chosen through convenience sampling, are examined using a validated researchers-made questionnaire, pilot tested for reliability (Cronbach Alpha = 0.91 and 0.88) composed of a Likert scale checklist for quantitative and open-ended questions for qualitative. Data gathering utilized semi-structured interviews and computer-assisted techniques using Google Forms, with the observance of ethical research standards. Using frequency, percentage, and mean substantiated with the themes merged through narrative analysis, gathered data revealed that most graduates now work as law enforcers, police officers, probation, and correctional officers (about 80%). This professional success rate, a testament to our graduates' dedication and hard work, is rooted in their dreams and desire to make a difference. In addition, results showed that, as perceived, academic preparedness ($x=3.52$), self-efficacy (3.68) on performing criminology skills and outcome expectations to all actions made ($x=3.80$) are highly influential and contribute to professional success, which showcased a high perceived percentage of alignment (about 93%) implied from both quantitative and the theme discovered. With these, a contextualized career trajectory model is recommended to offer a comprehensive visual framework for understanding the stages, transitions, and skill development necessary to support students toward professional success.

Keywords: Criminology graduate attributes; Career trajectory; Professional success; Private HEI.

1.0 Introduction

Career trajectories are heavily influenced by academic preparedness, which plays a pivotal role in shaping professional success within the field. Graduates' careers are influenced by academic preparedness and professional experiences (Jones & Smith, 2022). Undergraduate's intended career trajectory is an intention for work progress, career pathway, and professional development the moment they have graduated and started working for their whole professional life (Iskhakove & Kosheleva, 2023). Career trajectories of graduates with a global landscape have yet to be studied in career development literature.

Longitudinal studies tracking the career trajectories of graduates demonstrate a correlation between academic excellence and advancement opportunities. However, challenges such as job market saturation and evolving demands within the field underscore the importance of continuous professional development for sustaining

success over time. An overview of careers in criminal justice and criminology by Burns (2023) revealed an association between academic excellence and career advancement among criminology graduates. Academic preparedness encompasses theoretical knowledge and practical skills gained through internships, research projects, and hands-on training, equipping graduates with the tools necessary to excel in diverse roles within the criminal justice system (Burns, 2023). Through rigorous coursework and experiential learning opportunities, criminology programs aim to instill critical thinking, analytical skills, and ethical decision-making, essential for navigating complex challenges in the field.

Furthermore, academic preparedness is a foundation for lifelong learning and professional development, enabling graduates to adapt to evolving local and international trends and emerging issues within the criminal justice landscape. Research by Habiatan (2022) underscores the importance of continuous education including skill enhancement in sustaining and attaining long-term success. Graduates who invest in further education, specialized training, and certifications often find themselves at a competitive advantage, opening doors to advanced positions, leadership roles, and opportunities for specialization in niche areas such as cybercrime, forensic psychology, or criminal profiling (Tanaka et al., 2023) – which operationally used definition of professional success in this study. Academic preparedness fosters a sense of confidence and credibility among criminology professionals, enhancing their ability to communicate effectively, collaborate with multidisciplinary teams, and engage with diverse stakeholders in the pursuit of justice. Study by Lee et al. (2021) emphasizes the role of communication and interpersonal skills in building trust and rapport with clients, colleagues, and community members. Graduates who excel in conflict resolution, cultural competence, and empathy are better equipped to address the complex needs of individuals affected by crime and advocate for systemic reforms that promote equity and fairness within the criminal justice system.

The study is anchored to Social Cognitive Career Theory (SCCT) and explains graduates' attributes associated with career outcomes. The SCCT proposed by Lent, Brown, and Hackett (1994) posited that individual attributes shape professional success. Within the context of this study, this framework elucidates how criminology graduates' attributes such as academic preparedness, self-efficacy beliefs, and outcome expectations shape professional success including career choices (alignment) and trajectories (career pathing). The SCCT emphasizes the importance of self-efficacy belief as a central mechanism driving career-related behaviors and outcomes. Individuals with high self-efficacy beliefs in their abilities are more likely to pursue challenging career paths that are aligned with their long-term career goals, and actively seek out opportunities for growth and professional success (Kula, 2022; Aygil & Hasan, 2024; Ciampa et al., 2024; and Tecedor, 2024).

Moreover, SCCT underscores the role of outcome expectations of their actions' consequences in shaping career decision-making and goal-setting processes. Positive outcome expectations, such as the anticipation of career satisfaction, rewards, and societal impact, serve as motivational forces driving individuals toward specific career paths that demonstrate professional success (Seker & Capri, 2022; Fallah, 2022; Pachu et al., 2022; and Xie & He, 2023). In the context of the research, the theoretical framework provides a nuanced understanding of how personal attributes shape career success. This framework offers valuable insights into the mechanisms underlying professional success by examining the role of academic preparedness, self-efficacy belief (Taresh et al., 2024), and outcome expectations.

The increasing demand for criminology professionals in response to emerging societal issues such as cybercrime and increasing juvenile delinquency and illegal drug reports (Caliwan, 2024), and a certain percentage of career mismatch among criminology graduates (Aydinan, 2019), makes and add certainty to the need to study this topic. In a correlational analysis and a tracer study for batch 2018 and 2019 for BS Criminology, data reveals that graduates of a private HEI often find employment opportunities and professional success in law enforcement, government agencies, and private security firms (Robinos et al., 2023). However, some factors and bureaucratic structures need to be revised for career advancement, necessitating adaptability, and networking skills among graduates to thrive in their chosen fields. In the Philippines, the career trajectories of criminology graduates are shaped by a dynamic landscape of socio-economic factors and institutional frameworks (Camal, 2023). BS Criminology plays a crucial role in preparing individuals for careers in the fields of crime prevention, law enforcement, and criminal justice. By providing a solid foundation of knowledge, skills, and values, college programs may empower graduates to navigate diverse career paths and achieve professional success. As the field

continues to evolve, the importance of academic preparedness as a catalyst for lifelong learning and innovation cannot be overstated, underscoring the need for ongoing investments in education, training, and professional development within the criminology profession.

This research investigates career success among criminology graduates' attributes. It aims to answer these questions:

1. What diverse career paths are pursued by graduates demonstrating professional success?
2. What attributes influence and contribute to the graduates' professional success?
3. How do criminology graduates perceive alignment between their attributes and professional success?

2.0 Methodology

2.1 Research Design

The researchers utilized the embedded-mixed method to investigate whether individual attributes such as academic preparedness, self-efficacy, and outcome expectation for every action influence a graduate's professional success. The embedded-mixed method requires a simultaneous collection of quantitative and qualitative data, with the qualitative supporting the quantitative (Sharma et al., 2023).

2.2 Research Participants

The research was conducted in one of the private universities in Bacoor City, Cavite, Philippines. The study participants are 30 graduates of the Bachelor of Science in Criminology, any batch starting 2015, who were nominated during the first search for the most outstanding alumni of the year last April 2024. Alumni respondents were selected through a convenience sampling technique that considered availability and proximity. Their valuable insights, experiences, and factors influencing their career decisions helped answer the study's questions. All participants were given pseudonyms to observe data privacy.

2.3 Research Instrument

A researchers-made survey questionnaire with a 4-point Likert-type scale (for quantitative) and open-ended questions (for qualitative) was developed and administered using Google Forms. It is composed of three major parts: i.) varied jobs they have worked with indicating professional success; ii.) graduates attributes contributing to professional success, and iii.) the perceived alignment of these attributes to professional success. Study directions and objectives, rights of the participants, and consent were incorporated in the first part of the instrument. The research instrument was subjected to face and content validity by three experts in research affiliated with the criminology department and with experience in criminology-industry-related settings. After the revisions made from the validation, a pilot test of the survey checklist was conducted on 30 graduates who were not part of the study, indicating high consistency for graduates' attributes (Cronbach alpha = 0.91) and perceived alignment (Cronbach alpha = 0.88).

2.4 Data Gathering Procedure and Ethical Considerations

A researchers-made instrument was administered to BS Criminology alumni nominated in the first search for the most outstanding alumni of the year last April 2024 via Google Forms. Meanwhile, open-ended questions were given in advance so the participants would have sufficient time to reflect and provide substantial answers. Observing high standards of research ethics, the researchers ensure that participants are well informed of their rights, the study purposes, the anonymity approach to be implemented, the right to refuse participation and withdraw anytime, and the time frame for disposing of their responses.

3.0 Results and Discussion

3.1 Career Paths of Graduates Demonstrating Professional Success

Table 1 highlights the diverse career paths of criminology graduates. Participants mostly have been committed to working with being police officers (66.7%) and law enforcement officers (76.7%). Whether pursuing careers in law enforcement, correctional office, forensic science, or academia, these graduates exemplify the resilience, adaptability, and determination necessary to succeed in today's ever-evolving job market, indicating professional success. Most of the graduates joined the uniform force (e.g., law enforcement-related work, police officer, and correctional officer), which is under the umbrella of the DILG due to its civilian character concept consisting of

lesser military training. Joining the uniform services among criminology graduates may be linked to professional attainment as it demonstrates alignment and matches career paths (Ayeo-Eo, 2020).

Table 1. Frequency and percentage distribution of respondents' work experiences

Careers	Frequency	Percentage (%)
Police Officer	20	66.7
Correctional Officer	5	16.7
Forensic Scientist	2	6.7
Criminology Teacher	4	13.3
Probation Officer	6	20
Law Enforcement	23	76.7
Criminal Justice Instructor	1	3.3
Criminal Justice Administrator	1	3.3
Private Investigator	1	3.3

Note: Participants were asked to share all the work they have experienced. N=30

Achieving Personal Desire

Based on the participants' narratives, professional success is about choosing what they want to become, and most of them chose criminology-related careers because of their desire. Here is their corresponding answers:

"This is my childhood dream nurtured with my fascination with justice and desire to serve my community. Graduating with academic distinction pushed me to be more determined to translate my academic achievements into a meaningful career in law enforcement. I know I am little by little, succeeding in my chosen profession." Alumni 2

"My journey into the world of corrections began in 2018 after graduation. Growing up in my field [as a criminology graduate] from a community affected by crime, I witnessed firsthand the impact of incarceration and reintegration of offenders. I saw a career in corrections as an opportunity to make a positive impact and a difference – this is what I truly wanted." Alumni 5

"My fascination with forensic science, which was ignited as well back when I was taking BS Criminology, pushed me to pursue this career. Graduating as a top student among Criminology graduates, I set sights on this career driven by my passion for unraveling mysteries and seeking justice through scientific inquiry." Alumni 9

"I discovered my passion for teaching and research during my undergraduate study. After graduation, while working as a police officer, I took up my master's degree in criminology. My professional success is intrinsically motivated to inspire the next generation of criminal justice professionals." Alumni 18

"As a seasoned probation officer A, which I believe indicates my professional success, with a wealth of experience in working with offenders and promoting rehabilitation and reintegration – I embarked on community corrections because personally when I was young and while taking my bachelor's degree – I've seen myself helping others to become productive members of the society. I believe in second chances and the importance of support system." Alumni 23

"During my college years (2015), I handled leadership roles in the council already – this helps me to hold roles in law enforcement agencies, correctional facilities, and criminal justice organizations – guided me to become who I'm now (Newly Appointed Criminal Justice Administrator). I'm grounded with cultivating leadership competencies, love for growth and continuous improvement, and innovation in work." Alumni 29

Responses substantiate the idea that career trajectory equated to professional success is innate (desires and life purpose) and likewise based on their acquired formal education. Professional success in criminology are heavily influenced by understanding how to create safer society, importance of learning, employment positions, and the fact that it is part of our everyday life. Personal reasons play pivotal roles in shaping career trajectory within the criminal justice and criminology fields (Burns, 2023).

3.2 Individual Attributes Influencing and Contributing to Professional Success

Table 2. Extent of Influencing and contributing attributes to professional success

Factors	Overall Mean	Description
Academic Preparedness	3.52	Highly Influential and Contributing
Self-Efficacy Beliefs	3.68	Highly Influential and Contributing
Outcome Expectations	3.80	Highly Influential and Contributing

The data above reveals that academic preparedness, self-efficacy beliefs and outcome expectations as graduates' individual attributes highly influence and contribute to professional success with mean scores of 3.52, 3.68, and 3.80, respectively. These attributes and competence align with Camal (2023) study on the importance of academic preparedness and employability, and with Bandura's 1977 social cognitive theory, which posits that individuals' beliefs and expectations profoundly influence the achievement of high outcomes. Self-efficacy beliefs help determine how much effort individuals will exert effort, will persevere, and how resilient they can prove in the face of adverse situation (Mani & Mahendra, 2019).

Acquired Knowledge, Skills and Attitudes Matter

As expounded from the open-ended responses, participants strongly consider their formal education significant to their careers. The desire to become successful in one's profession can be attributed to several factors, profoundly the content knowledge, skills and attitudes honed in school. Having familiar narratives, participants mentioned:

"The concepts and theories I grasped and with all academic training I received from the school helped me to be work ready and competitively. Attributes like believing in one's skills and working in advance to ensure the effectiveness of the result have helped me to thrive in my work at the moment. These attributes are truly beneficial to me as law enforcer for about 6 years now." Alumni 4

"Becoming a new private investigator [6 months already], the knowledge, skills and attitudes I have gained in the University, Criminology department, helped me a lot. Everything I've known and my expertise started with all the competencies the Institution have provided us. The KSA I've gained truly guided me to become successful on the career of my choice related to criminology." Alumni 11

"I am thankful to my alma matter. What they have taught us [Academics, believing in abilities, and having high expectations I all our actions] definitely guided me to become who am I [Probation Officer] right now." Alumni 15

"I'm a police officer III. The basics that were taught to us makes us competitive in our chosen job. More than the academics, we are trained to have strong sense of work-efficacy and disciplined. It was highlighted, during my college years, that for every action I do there are consequences – hence expect for every outcome." Alumni 55

3.3 Perceived Alignment between Attributes and Professional Success

Table 3. Extent of perceived alignment between

Extent of Perceived Alignment	Frequency	Percentage
Highly Aligned	28	93.3
Generally Aligned	2	6.7

The high confidence was evident in respondents' answers that academic preparedness, self-efficacy, and outcome expectations contribute greatly to professional success (about 93%). Theoretical concepts, academic content, self-efficacy beliefs and outcome expectations play a vital role in the transitions happening in their chosen careers more so, attaining career success. This result underscores the importance of comprehensive curriculum development and pedagogical approaches that foster practical application, critical thinking, decision-making, and 21st-century soft and hard skills. Individual choices, relationships, aligned and appropriate experiential learning opportunities, external pressures, internships, and practical exercises bridge the educational gap and enhance graduates' work readiness, self-efficacy, and other abilities to thrive in real-world challenges (Anderson et al., 2019). This should be an academic leader's priority.

Learning vis-a-vis Professional Success

The high level of alignment to professional success, as perceived by the alumni of BS Criminology, indicates that acquisition of learning works with success in career. What we learn from our formal schooling influences our career trajectory because it gives us the necessary knowledge, skills, and attitudes that we can apply in our chosen field. This claim was supported by the respondents' answers to the open-ended questions. Answers such as:

"I believe there's a strong alignment between the academic preparedness, Self-efficacy and outcome expectations to my success as a law enforcement officer for almost 6 years. My education equipped me with a solid understanding of criminal justice principles and theories, which I apply daily in my role. Not to mention the characteristics and attributes I was honed for. As a board passer, my academic achievements have further bolstered my confidence and competence in upholding the law and serving my community." Alumni 1

"As a correctional officer for more than five years already, I have found that my academic background in criminology and other attributes (values and attitudes) has been instrumental in my professional success. The knowledge, skills, and values I acquired during my studies have prepared me to handle the challenges of working in a correctional facility effectively. Despite the initial hurdles in securing employment, my commitment to excellence and dedication to the field has propelled me forward. I am proud of the difference I make in the lives of inmates and staff." Alumni 8

"In my career as a forensic scientist, I have seen a clear association between my academic preparedness, self-efficacy, outcome expectations mindset, and my achievements to where I am right now relative to my work. The rigorous training and education in criminology, enriched with seminars and workshops, gave me the foundation to excel in forensic analysis and contribute meaningfully to criminal investigations. As a proud board passer, my academic credentials and the characteristics I have built because of Perpetual have instilled confidence in my abilities and affirmed my commitment to delivering justice through science." Alumni 14

"As a criminology teacher, I believe my acquired academics and realized potential, which includes the ability to do things more confidently and always considering possible outcomes, guided me in shaping my career trajectory and advancement. My dedication to continuous learning and pursuing advanced degrees has allowed me to excel in academia. Through teaching, I can impart knowledge and inspire future criminal justice professionals, fulfilling my passion for education and research." Alumni 20

"My journey as a criminal justice instructor II for almost four years has been guided by my academic undertaking from college and my passion for advocating justice and peace. After I passed the board exam, which I believe would not have happened without guidance from Perpetual, I became more confident. I practiced what my instructors before taught us – that for every action we do, there are results or consequences. My commitment to excellence in teaching and dedication to criminal justice reform are grounded in those I realized during my college days and a personal commitment. As a successful instructor now, I am grateful for the opportunity to empower students to critically engage with issues in the field and become agents of positive change in society." Alumni 27

4.0 Conclusion

Law enforcement officers, policemen, probation officers, correctional officers, and criminology teachers are the common criminology career-related avenues the graduates are currently affiliated with, showcasing professional success. This manifestation of attainment and achievement is driven by their dedication to excellence, as well as their intimate motives and desires to effect positive change in criminal justice. The findings underscore the pivotal role of academic preparedness, self-efficacy beliefs, and outcome expectations as a significant contributor toward professional success, highlighting the importance of comprehensive curriculum development, experiential learning opportunities, enrichment initiatives, integration into the real world of work, and teaching emphasis in complexities of the criminal justice field. The diverse career paths pursued by criminology graduates demonstrate the dynamic interplay between individual graduates' attributes and professional success, highlighting the versatility and adaptability of a criminology degree in meeting the evolving needs of the criminal justice field. Creating a Career Trajectory Model contextualized for each HEI and integrating the data gathered is recommended. The model should offer a comprehensive visual framework for understanding the stages, transitions, and skill development necessary for successful career progression, aiding organizations, and supporting professional growth.

5.0 Contributions of Authors

All the authors contributed equally to writing, data gathering, analyzing the study results, and finalizing the article.

6.0 Funding

The article was funded personally by the authors.

7.0 Conflict of Interests

No potential conflict of interest.

8.0 Acknowledgement

The authors wished to acknowledge all our co-researchers (BS Criminology alumni) endorsed in the first search for the most outstanding alumni of the year organized by the HUMSS Cluster.

9.0 References

- Anderson, T., Bidwell, M., & Briscoe, F. (2019). External factors shaping careers. In *The Routledge Companion to Career Studies*. Routledge.
- Ayeo-Eo, S. (2020). Job preferences of BS Criminology graduates' batch 2018-2019 of Nueva Ecija University of Science and Technology. *EPRA International Journal of Multidisciplinary Research*, 6(2), 128-132.
- Aydinan, J.J.B. (2019). Employment array of Bachelor of Science in Criminology graduates in Nueva Ecija University of Science and Technology. *International Journal of English, Literature and Social Sciences*, 4(6), 1733-1737. <https://dx.doi.org/10.22161/ijels.46.16>
- Takır, A., & Özder, H. (2024). Special education preservice teachers' mathematics teaching self-efficacy beliefs. *Educational Studies*, 50(2), 224-242. <https://doi.org/10.1080/03055698.2022.2037405>
- Burns, R. G. (2023). *Careers in criminal justice and criminology* (1st ed.). Routledge. <https://doi.org/10.4324/9781003360162>
- Caliwan, C.L. (2024). New PNP chief eyes 5-year 'smart policing' dev't plan. *Philippine News Agency*. <https://www.pna.gov.ph/articles/1221852>
- Camal, H.J. (2023). Investigating the impact of BS Criminology education on graduates' professional competence and employability: A qualitative analysis in Basilan province. *International Journal of Multidisciplinary Research and Publications*, 5(12), 4-7.
- Ciampa, K., Gallagher, T., Hong, H., McKee, L., Scheffel, T.L. (2024). An Examination of Canadian and American Pre-Service Teachers' Self-Efficacy Beliefs for 21st Century Literacy Instruction. *Reading Psychology*, 45(3), 311-336.
- Fallah, N., Kiany, G.R., Tajeddin, Z. (2022). Exploring the Effect of an Entrepreneurship Awareness-Raising Intervention on ELT Learners' Entrepreneurial Intention, Mindset, Self-Efficacy and Outcome Expectations. *Language Teaching Research Quarterly*, 27, 45-65.
- Habiatan, E.N. (2022). The criminology curriculum: Its relevance to the jobs of the graduates. *International Journal of Innovative Science and Research Technology*, 7(11), 1136 - 1142.
- Iskhakova, M., & Комелева, C. B. (2023). Global vs local career intentions and career trajectories in the student's domain. *International Journal of Employment Studies*, 31(1), 5-37. <https://search.informit.org/doi/abs/10.3316/informit.259154643476487>
- Kula, S.S. (2022). The Predictive Relationship between Pre-Service Teachers' Self-Efficacy Belief, Attitudes towards Teaching Profession and Teaching Motivation. *International Journal of Contemporary Educational Research*, 9(4), 705-717. <https://doi.org/10.33200/ijcer.1068573>
- Mani, M., & Mahendra, P. (2019). Self-efficacy – Concept in learning. *Researchgate*.
- Pachu, N., Strachan, S., McMillan, D., Ripat, J., & Webber, S. (2022). University students' knowledge, self-efficacy, outcome expectations, and barriers related to reducing sedentary behavior: A qualitative study. *Journal of American College Health*, 70(4), 1146-1153. <https://doi.org/10.1080/07448481.2020.1786098>
- Robiños, J. R., Sagudo, F. Jr., Birung, R. J., Camilon, R. B., Legaspi, J., Cacho, R. (2023). A Correlational Analysis of Predictor Test Results and Licensure Examination Board Performance among Education and Criminology Graduates from a Private University. *Journal of Interdisciplinary Perspectives*, 1(2), 37-42. <https://doi.org/10.5281/zenodo.10076416>
- Seker, G., Çapri, B. (2022). The Effect of the Career Psychoeducation Program on the Career Decision Self-Efficacy and Educational Outcome Expectations of Eleventh-Grade Students. *International Journal of Progressive Education*, 18(2), 87-103.
- Sharma, Dr. L. R., Bidari, S., Bidari, D., Neupane, S., & Sapkota, R. (2023). Exploring the mixed methods research design: Types, purposes, strengths, challenges, and criticisms. *Global Academic Journal of Linguistics and Literature*, 5(1), 3-12. <https://doi.org/10.36348/gajll.2023.v05i01.002>
- Tanaka, Y. (2023). Exploring the Career Trajectories of Criminology Graduates in Japan: A Longitudinal Study. *Asian Journal of Criminology*, 8(1), 78-94.
- Taresh, S. M., Morett, L. M., Zaid, S. M., Roslan, S., Taresh Taleb, M., Song, P., Ahmad, N. A., & Noman, S. (2024). Preschool teachers' knowledge, beliefs, and self-efficacy concerning autism: A parallel mixed-methods study of an intervention to improve autism identification. *Autism*, 28(1), 239-253. <https://doi.org/10.1177/13623613231211850>
- Tecedor, M. (2024). Digital Storytelling: Changing Learners' Attitudes and Self-Efficacy Beliefs. *Applied Linguistics*, 45(1), 65-87. <https://doi.org/10.1093/applin/amad002>
- Xie, Y., He, J. (2023). Bring the Outcome Expectations Back In: Chinese Adolescent Perceived Value of Effort and Academic Achievement. *Psychology in the Schools*, 60(9), 3469-3485. <https://doi.org/10.1002/pits.22941>

Navigating Shotgun Marriages: A Study of Baby Boomer Husbands' Well-Being

Meri Genesis I. Badillo

Laguna College of Business and Arts, Calamba City, Laguna, Philippines

Author Email: ilustregenesis@gmail.com

Date received: July 4, 2024

Date revised: July 17, 2024

Date accepted: July 20, 2024

Originality: 96%

Grammarly Score: 99%

Similarity: 4%

Recommended citation:

Badillo, M.G. (2024). Navigating shotgun marriages: A Study of baby boomer husbands' well-being. *Journal of Interdisciplinary Perspectives*, 2(8), 637-647. <https://doi.org/10.69569/jip.2024.0335>

Abstract. Shotgun marriages, a phenomenon influenced by cultural, religious, and personal factors, have left an indelible mark across civilizations. Shotgun unions prevail in the Philippines, where family reputation is deeply ingrained. The research aims to provide valuable insights into the complexities of shotgun marriages, family dynamics, and the impact of impregnation as a driving force behind marriage decisions. This research employed a qualitative study and utilized an interpretative phenomenological analysis to delve into the intricate tapestry of lived experiences among the Baby Boomer husbands who found themselves in shotgun marriages, focusing intently on their psychological well-being. Moreover, the researcher utilized a homogeneous purposeful sampling in selecting (7) seven participants residing in the Province of Laguna. Following a semi-structured interview questionnaire, the components of the PERMA model were integrated: informed consent, data collection, transcription and initial coding, theme exploration, refinement and clustering, interpretation and sense-making, and report writing. This research deepens the understanding of how shotgun marriages impact Baby Boomer husbands' well-being, highlighting that marital commitment, love, resilience, and adaptability contribute to enduring marriages.

Keywords: Shotgun marriage; Psychological well-being; Baby boomer; Husbands; PERMA model; Marital commitment.

1.0 Introduction

Non-attachment in romantic relationships represents a rational, non-clingy perspective. Rather than relying solely on a partner for happiness, individuals recognize their agency in defining well-being. McNelis and Segrin (2019) highlighted how attachment styles shape relationship outcomes, with secure attachment fostering stable partnerships and insecure attachment leading to marital challenges and divorce. Practicing healthy detachment allows emotional balance while remaining present in the relationship.

Marriage serves as the lifeblood of communities, providing stability, love, and a sense of unity. It upholds families, fosters community bonds, and extends a loving embrace to those who share their lives. Furthermore, considering Ludden's (2020) stated that most people's physical and mental health improved after they got married. In addition to supporting one another emotionally when needed, spouses assisted each other in maintaining healthy behaviors.

On the contrary, Ernaati et al. (2023) concluded that pregnancy out-of-wedlock, parental pressure, love, and local customs were all major factors in early marriage decisions. Shotgun marriages, influenced by cultural, religious, and personal factors, have left an indelible mark across civilizations. Shotgun unions prevail in the Philippines, where family reputation is deeply ingrained. Although reliable research on the true origins of shotgun weddings

is lacking, these forced marriages – commonly referred to as “shotgun marriages” (though they typically do not involve a gun) – have a fascinating history.

Interestingly, Rashid and Islam (2023) explored how cultural norms and expectations significantly shaped marital decisions. Societal pressures, family traditions, and community beliefs can influence individuals’ choices. The study may delve into specific cultural contexts, exploring how norms around early marriages impacted couples. Cultural insecurities could relate to financial stability, social acceptance, or gender roles.

However, it is essential to recognize that shotgun marriages are not a perfect representation of modern unions. Contemporary couples often bind themselves through a mutual declaration of love, transcending the coercive origins of the past. Even the most discerning individuals understand this shift in marital dynamics. Furthermore, a study by Hsu and Barret (2020) found that continuously married individuals performed better on negative and positive well-being measures than those who had never married. However, single or remarried individuals also exhibited distinct well-being patterns.

The researcher was motivated to ascertain whether most men in shotgun marriages were willing, committed, and affectionate to their spouses or if they were compelled to do so. It was critical to understand if shotgun marriages lasted for several reasons. In the first place, it aided in comprehending the evolving trends and significance of marriage and family in modern society. Subsequently, it guided initiatives and regulations to assist households with varying needs among their children and spouses. Furthermore, it assists couples dealing with an unexpected pregnancy make well-informed plans.

Regarding their well-being, like women, men were also human, and as such, they could experience a wide range of emotions, including fear, love, grief, despair, and rage. However, men might not always show their feelings in the same manner or as frequently as society wants them to. This could have resulted from many factors, including coping mechanisms, cultural norms, personal views, and societal conventions.

The study's primary goal was to perceive the psychological well-being of Baby Boomer Husbands from shotgun Marriages. It answered the central question “What is the essence of the lived experience among Baby Boomer Husbands from Shotgun marriage as to psychological well-being?” Consequently, it also answered the following corollary questions: How do the Baby Boomers from shotgun marriage describe their psychological well-being? What themes emerge from the testimonies of baby boomer husbands from shotgun marriages? Based on the study's findings, what program may be proposed?

2.0 Methodology

2.1 Research Design

This study utilized a qualitative research design that focused on understanding the nature of phenomena, emphasized perspectives, and often involved collecting data in words rather than numerical measurements (Busetto et al., 2020). The interpretative Phenomenological Analysis (IPA) approach focuses on understanding the meaning-making activities of Baby boomer husbands. It considers their unique perspectives, embodiment, and embeddedness in objects and relationships (Tallodi, 2019).

2.2 Research Participants

This study gathered data from selected Baby boomer husbands living in Laguna Province. The study considered factors such as researchers’ access to participants, outcomes, available resources, data collection methods, and the cultural context. With the utilization of homogeneous purposeful sampling, seven (7) Baby boomer husbands from shotgun marriages residing in the Province of Laguna, Philippines, were selected. Additionally, the study restricted the participation to male individuals born between the years 1946 and 1964 and who were married for the reason of impregnating their partner. Subedi (2021) stated that the small sample size allowed for flexibility in adding or removing participants based on data sufficiency, particularly in a qualitative inquiry with participants below 10.

These participants offer a diverse range of experiences and backgrounds. Their marital statuses vary, including separation, marriage, and widowhood – the years of marriage span from eight to 49 years, reflecting different

stages of commitment. Occupations also differ, from skilled workers to retired personnel. By studying these Baby Boomer husbands, researchers can gain valuable insights into the complexities of shotgun marriages, family dynamics, and the impact of impregnation as a driving force behind marriage decisions. Qualitative methods, such as semi-structured interviews and interpretative phenomenological analysis (IPA), will allow a deeper exploration of their lived experiences.

2.3 Research Instrument

The study utilized a semi-structured interview questionnaire to gather data and observations from Baby boomer husbands, incorporating the elements of the PERMA model theory, which is composed of (P) Positive emotions, (E) Engagement, (R) Relationship, (M) Meaning, and (A) achievement. The knowledge of skilled experts was requested to validate the semi-structured questionnaire. According to Lawshe (1975), as cited in Diaz and Quevedo-Balasco (2023), as a validation method, the Content Validity Ratio (CVR) was calculated to be 1.00. This validation approach assessed the content validity of each item by considering expert or panel assessments.

2.4 Data Gathering Procedure

Primarily, a letter was composed explaining the goals and purpose of the study to the participants. Subsequently, a call for responses was posted on several social media channels. After acceptance, interview sessions were scheduled based on participants' availability. The participants decided on the place or the most convenient phase. Interviews were conducted face-to-face. Informed consent forms were used for participants to acknowledge the risk accepted while participating in the study, and applications were filed with the IRB for approval.

To facilitate a comfortable environment and boost the possibility of accurate responses, rapport was built with participants before conducting research interviews. Awareness of the constraints on the success of data collection included gathering information from various sources. These sources comprised field notes, interviews, documents, audiovisual and digital materials. Field Notes: These involved recording activities at the research site. Interviews: Unstructured, typically open-ended questions were asked during these interviews. The number of questions was intentionally kept low to elicit the participants' perspectives and opinions. Documents: These could be public or private. Audiovisual and Digital Materials: These might include photographs, art objects, videos, emails, text messages, and social media text.

Additionally, visual ethnography included creative data collection procedures, such as living stories, metaphorical narratives, and digital archives. An observational protocol was used to record information during qualitative studies, particularly data recording. This protocol included descriptive notes, reflexive notes, and demographic information. Separating descriptive notes from reflexive notes allowed a more comprehensive understanding of the participants and the physical setting.

An interview protocol was a methodical way to record responses and pose questions when conducting qualitative interviews. It was captured on handwritten notes, audio or video recordings, or both. Moreover, an interview protocol was used, prepared in advance, and consistently utilized throughout the interview process. This protocol consisted of five to ten questions spread across two pages, covering basic information, an introduction, content questions with probes, and closing instructions. In analyzing the data collected from the participants, transcription and tabulation were done by manual coding, which provides depth and adaptability, making it a valuable tool for qualitative analysis. By meticulously examining each piece of information, I gained a richer understanding of the nuances, patterns, and context. This hands-on approach allows a more profound exploration of the data's themes, connections, and underlying meanings.

Conclusively, any video and audio-recorded materials were deleted after transcription in observance of data privacy. A laptop was used for records and file-keeping. Similarly, all paraphernalia used in transcribing field notes and other written or printed materials was handled carefully to ensure privacy.

2.5 Ethical Considerations

Adherence to the guidelines and ethical standards outlined in the school's research manual was maintained. Participants' dignity and well-being were protected and upheld during the process, with all applicable laws and

rights being adhered to. Ethical issues included personal disclosure, authenticity, credibility, cross-cultural context, and privacy concerns.

Participants were informed about the study's goals, methods, and advantages and disadvantages of participating. They were also told they could withdraw from the study at any time and given an opportunity to ask questions. To safeguard participant identity, pseudonyms were employed. This entailed giving participants imaginary identities or codes in place of their names, increasing the likelihood that research findings would not reveal participants' names. Data was encrypted on a secure server and stored in password-protected folders. After the research phase was finished, information was erased or discarded, breaches of confidentiality were addressed, and retention was restricted to the study's term.

3.0 Results and Discussion

This section summarizes the main findings of this study. Ten (10) themes emerged from the phenomenological study of the lived experiences of the Baby boomer husbands from shotgun marriages in Laguna Province.

Theme 1: Resiliency and Adaptability

The Baby boomer husbands highlighted their ideal marriage. It revolved around the concept of a perfect marriage. Baby boomer husbands often idealized a perfect marriage, envisioning it as a harmonious union where love, companionship, and shared values formed the cornerstone of their relationship. BBH3 responded,

"In that situation, you cannot normalize it because problems arise, which can be solved through God's guidance. We can find a way to address them. Of course, problems come up even after marriage. It is not just about happiness; sometimes challenges arise, and that is when you need to be strong. That is the best approach – keep fighting and stay positive."

Lastly, BH7 responded,

"The most beautiful thing is having a family. Building a family means having happiness and having someone to talk to when problems arise. You can ask if everything is okay, and that is when the problems disappear."

Baby boomer husbands defined their ideal marriage based on what they had experienced over the years with their partners. Many individuals found it challenging to define the concept of a perfect marriage. They recognized life's inevitable trials and emphasized the importance of strength and positivity. It encompasses navigating conflicts, accepting imperfections, communicating effectively, and prioritizing commitment. It concluded that Meaning (M), cited among the PERMA model components, is an emotional connection, shared values, and growth opportunities. It represents a life filled with purpose, love, and continuous learning. The understanding was that challenges were inevitable, but a strong marriage thrived when partners remained resilient and adaptable.

Sassler and Lichter (2020) explained that Nonmarital cohabitation (living together without formal marriage) and marriage were now closely intertwined. Researchers recognized that studying traditional marriage required considering the broader context of cohabitation. Changes in relationship dynamics, such as altered timing, duration, and sequencing of co-residential unions, had made the landscape more intricate. Factors influencing these transitions include economic stability, cultural norms, personal values, and relationship dynamics. Added to this is the importance of compromise and understanding in marital relationships.

Theme 2: Commitment to Forced Marriage Despite the Challenges

The Baby boomer husband's struggle was universal: caught between personal desires and external pressures encapsulated the mindset of the baby boomer husband's state of mind following the forced marriage. BBH3 responded,

"It is a significant responsibility because you will have a family. Gradually, your mind starts contemplating what lies ahead – what will happen when you get married or have children. Sometimes, those thoughts do not materialize immediately, but it is essential to be prepared for whatever comes your way. Yes, starting a family can be challenging, but it also brings joy and fulfillment to life. I am glad you are preparing yourself for the journey ahead."

Furthermore, BBH2 responded,

"I have made up my mind; after all, I have already reached thirty. What else can I do? It is okay, no regrets. Initially, I resisted, but now it is there, and there is nothing more to be done. We have built something together."

The Challenges encapsulated the mindset of the baby boomer husband's state of mind following the forced marriage. Also highlighted were the baby boomer husbands who found love blossoming over time despite an initially weak connection. Some reflected on their age, embraced their circumstances, and fully committed to their relationships. They emphasized mutual desire and consent. Within the PERMA model context, it concluded that positive emotions played a crucial role, not about emotional distress but rather a convergence of shared intentions. Although the initial state of mind following an arranged marriage might not have been positive, their ability to cope, seek support, and find hope contributed to overall emotional well-being. To demonstrate, Ernaati et al. (2023) that pregnancy out-of-wedlock, parental pressure, love, and local customs are all major factors in early marriage decisions. These choices put happiness first but can also have unfavorable effects, like regret, sadness, confusion, and discomfort. Emotional immaturity in a couple can cause arguments and domestic violence. Traditions also play a part in daughters' economic status, making them appear to be burdened.

Theme 3: Societal Norms and Conjugal Responsibilities

The factors of external stressors affect their perception of getting married. Admirably, some individuals went to great lengths for love, even converting to another religion to honor and respect their partner's differences. BBH2 responded,

"If, for instance, I were to take the initiative, I would be the only one struggling while you remain at home. That is how it turned out."

Moreover, BBH7 responded,

"In the Catholic faith, for people like us who are Catholics, there is nothing prohibited there. Even in the church, it is acceptable to get married if the woman is pregnant."

Likewise, BBH6 responded,

"It is ideal to get married around 22 or 21 years old after finishing college to be like friends when you have children. Some people consider the cost of weddings too high due to religious practices."

The theme of Societal Norms and Conjugal Responsibilities emphasized that their age and occupation did not affect their building a family as much as if they were at the right point to commit. It concluded that within the PERMA model, engagement went beyond mere participation – it entailed wholehearted immersion in activities that ignited passion, pushed limits, and infused life with purpose. The idea is that couples who marry young may have more energy and enthusiasm to raise children, like how friends support each other. However, there is no one-size-fits-all approach to marriage; people have different life paths and priorities.

Furthermore, the issues faced by couples in Philippine society during a shotgun wedding were pointed out in a blog by Xavier (2023); in the Philippines, premarital sex and childbirth norms had been greatly impacted by the influence of Roman Catholicism. Though the Church had a great influence during the Spanish colonial era, historically, unplanned pregnancies were taboo, which led to the rise of shotgun weddings to preserve family honor and avoid public shame. To conclude, as a reflection of the deeply ingrained cultural norms of marriage, responsibility, honor, and family unity in the Philippines, shotgun weddings were very common. This illustrated how flexible and resilient Filipino customs were.

Theme 4: Emotional Maturity in Relationship

Maturity requires many experiences throughout the years of being together. It is not about being perfect but about being willing to learn and evolve. Couples can grow together by nurturing these qualities. BBH7 cited:

"When you say you love a woman, love her and do not hurt her."

On the other hand, BBH2 quoted,

"As long as you are honest with each other, there will not be any fights. Avoid jealousy and trust each other to make your relationship last."

The theme of Emotional Maturity in Relationships showcased how baby boomer husbands described maintaining balanced relationships. It is essential to recognize that love is not a transaction—it is not about keeping score. Instead, it is about giving freely and authentically. Relative to these responses, a study conducted by An et al. (2022, investigated the relationship between emotional suppression and psychological well-being in marriage by conducting two online survey surveys on a sizable sample of married participants. The findings showed that being emotionally repressive was linked to higher marital happiness for prevention-focused people, but only if those people thought their partners were also emotionally repressive. However, being less emotionally repressive was linked to higher marital happiness for promotion-focused people, but only if such people thought their spouses were likewise less emotionally repressive. Moreover, the study provides insights into how emotional regulation, regulatory focus, and spousal behavior influence psychological well-being in intimate relationships. Moreover, the study's results, with the complexities described in one experience as a parent and partner, likely involved both prevention-focused and promotion-focused aspects. Besides, it highlights moments when a spouse's behavior (such as accusations or jealousy) impacted a relationship. Understanding and managing spousal behavior was essential for maintaining a healthy marriage.

Theme 5: Interpersonal Relationships within Family Relatives

Family relationships are dynamic and evolve. They shape our understanding of love, trust, and connection. They include relationships between parents and children, siblings, grandparents, aunts, uncles, and cousins. Family relationships can be close or distant, supportive or conflicted, requiring understanding, forgiveness, and compromise to endure. BBH2 responded,

"As for me, I have not shown any ill will towards them, especially my brothers-in-law. I no longer have in-laws; they have both passed away. However, my guiding principle is to maintain good relations with them. I get along well with my brothers-in-law and sisters-in-law. We have all ended up here together. I do not show anything negative to our relatives or neighbors, even if they sometimes portray us badly. It is all good. My siblings, sisters-in-law, and brothers-in-law – we are all on good terms. Yes, even with food, I share with everyone if I cook. If they do something for me during lunchtime, I will reciprocate. That is how it goes."

Furthermore, BBH3 responded,

"When facing relatives, the interaction should be respectful. For me, discipline is essential."

Baby boomer husbands demonstrated family relationships among the immediate and extended family members. They suggest a principled approach, where boundaries are maintained while still treating others with respect. Their courteousness to neighbors and ability to treat family members well speaks volumes about their character. On the contrary, some observed tension within the family, particularly between the mother and their siblings. Despite this, they maintained a positive attitude and strived for good relationships with their in-laws (bayaw) and extended family. It was evident that while challenges persisted, self-sufficiency and providing for the family remained top priorities. Individuals took responsibility for their own lives and well-being. Some found it difficult to fit in, yearning for a sense of belonging suddenly. Occasionally, this led to aloofness during family gatherings or feeling like a mere reflection of their spouse. Nevertheless, others took pride in their family roles, ensuring everyone was treated respectfully. Drawing from the PERMA model, Engagement (E) in family relationships concluded active involvement, understanding, and nurturing connections. However, experiences varied significantly.

A relevant study by Gregorio et al. (2023) emphasized that resilience was crucial in maintaining positive relationships despite external negativity and treating relatives and in-laws with kindness and discipline. This approach resonated with familism, as it recognized the importance of familial connections. Understanding cultural norms and practices was essential for maintaining healthy family relationships.

Theme 6: Factors Affecting Marital Commitment

Baby boomer husbands described different perspectives of discernment they have, and being in a situation that led to a decision that will affect one's life somewhat will make them question how they deeply love this person. Many factors, including emotional intimacy, shared values, communication patterns, and external stressors, influence marital commitment. BBH2 responded,

"Isn't it true that sometimes, when a man impregnates a woman, he just leaves? There are cases like that, right? However, for me, it is different. I stood by my actions. It is not about being a 'real man' but doing what is right."

Similarly, BBH7 responded,

"Well, of course, I just thought that I love her... I love her, and there were no issues with her siblings or parents. Everything was fine for me. So, I made it real."

Lastly, BBH3 responded,

"True love is like that – they say you should not give all your love, not to the extreme. You need to reserve some for yourself; you must balance it. Because love is already there – that is why you married your spouse; you love them. However, you should keep some for yourself."

The theme of Factors Affecting Marital Commitment encapsulated that unlike the conventional union fueled by love between two individuals who had not engaged in premarital sex, this context involved marriages outside wedlock. Doubts arose as individuals grappled with unpreparedness for responsibilities, and over time, individuality could diminish—especially when the focus shifted to spouse and children. Some emphasized enduring connections that existed even before conception, underscoring profound depth.

Conclusively, within the context of the PERMA model, Relationships delved into commitment, balance, and genuine love. Genuine love transcended mere emotional expression and required a delicate balance—wholehearted giving while preserving one's identity. These perceptions reflected their personal experiences. Choosing a life partner was no casual decision; it entailed love and responsibility. As a couple, they collaborated to enrich their lives and nurture their children.

Comparable to the experiences stated by the baby boomer husbands, Betterhelp Editorial Team (2023) conducted a survey in 2023 of 192 married couples across diverse demographics. It explored the intricate interplay between love, marriage, and commitment. The findings highlighted the significant influence of relationship satisfaction on lasting commitment. Contrary to the belief that marriage alone solidifies commitment, the study acknowledged that committed relationships can exist without formal marriage. Instead, dedication to one another matters more than legal union. The study's definition of commitment as a personal choice to remain loyal, even in the face of challenges, resonates with the user's reflections. The study and the participant's responses delved into commitment within the complexities of individual experiences and societal norms, emphasizing the dynamic journey of love. In essence, understanding these dynamics enriches our perspectives on love and partnership.

Theme 7: Challenges in Married Relationship

The Baby boomer husbands outburst their emotions as they intensely reminisce about certain phases of their married life, facing the struggles of juggling their family, personal, and financial lives. Married relationships can face various challenges, and understanding these issues is crucial for maintaining a healthy partnership. BBH6 responded,

"It cannot be said that it is smooth sailing either because there are many times when your godmother gets so angry with me, so jealous... she will leave."

As derived from one of the statements BBH2,

"The most challenging part for me back then was when I sent my children to school. It was tough – three of them, and I was the sole provider working alone."

Lastly, BBH3 cited

"Sometimes, especially during financial needs, when there is none, you will see everyone getting hot-headed."

The theme of Challenges in Married Relationships went hand in hand with the crucial phases of their lives as a husband or being married. Likewise, this expresses the complexities of relationships, which can create challenges. For example, infidelity and trust weighed heavily on his mind when he discovered that his wife was secretly conversing with someone late at night. Despite their separation, she still acknowledged the kindness of his spouse. However, for the others, relationships were not always smooth; anger and jealousy strained them. Additionally, financial constraints often led to heated arguments, but he persevered. Moreover, petty issues seemed insignificant compared to these husbands' weightier burdens.

Relative to this, interpersonal dynamics, communication, and seeking support all contributed to the Relationship as cited among the components of the PERMA model. The challenges mentioned are particularly common even in today's generation; they happen in every relationship and destroy the bond if it does not have a strong foundation. While fulfilling responsibilities is important, it is equally crucial to prioritize individual well-being. Successful marriages thrive on open communication and mutual understanding. To support the responses of the baby boomer husband, a study by Chung et al. (2023) mentioned that the research investigated the delicate balance between work responsibilities and family life; it explored how parenting stress arose from the juggling act of work and family roles and how marital conflicts can arise when work pressures collide with family expectations.

Theme 8: Financial Adaptations, Collaborative Employment Strategies, and Coping Mechanism

Baby boomer husbands openly shared the adjustments and coping strategies amidst the challenges. Most of the responses were challenges consistently faced by themselves and not to be a burden for their wives. Since men and husbands were the family's sole breadwinners, they were labeled as the main providers. BBH1 mentioned,

"Trying multiple jobs at a time."

Likewise, BBH4 mentioned

"Work anywhere, even when there are errands – just work as long as I am earning."

Lastly, as well as BBH7 echoed,

"Will look for other sources of income first."

The theme, Financial Adaptations, Collaborative Employment Strategies, and Coping Mechanisms, shed light on the deeply ingrained in many societies throughout history. Traditionally, men were expected to do so. Some then demonstrate assertiveness by empathizing with his wife and emphasizing the importance of adjusting to family demands and financial duties. Moreover, it was essential to recognize that baby boomers often exuded confidence in their financial knowledge. Their timeless advice to younger generations echoed: "Start saving early." Conclusively, within the context of the PERMA model, the component that stood out was Engagement (E). They remained committed to problem-solving and growth. As life unfolded, they adapted by switching jobs, sacrificing personal pursuits, or embracing new responsibilities. Now, with families of their own, they recognized the need to save, especially with impending parenthood. Balancing work, family, and personal aspirations remained a delicate dance, yet their resolve remained unwavering: seek alternatives and never give up.

Relatively, in a study by Dew et al. (2021), Sound financial management behaviors referred to actions that helped individuals and families achieve financial goals and enhanced financial well-being. Unlike many studies on negative financial events, this research directly measured financial management behaviors. Husbands: Marital satisfaction at Time 1 (T1) was positively associated with sound financial management behavior for husbands; however, only actor effects were found. This suggests that marital satisfaction tends to be higher when husbands manage finances well. Understanding the link between financial management and marital quality was crucial for various reasons: Financial education programs can indirectly impact marital quality by promoting sound financial management. Policymakers and the public can benefit from knowing how financial behaviors influence relationships.

Theme 9: Commitment and Dedication to Family

As a Baby boomer husband who has weathered the storms of life, one understands the value of steadfastness and responsibility. They enunciated life's work fulfillment and value. BBH2 responded,

"In all honesty, even at my age, I am still working hard – for our family, my spouse, and our child. Even though my eldest child has a job, I still experience coming home at three in the morning. We sleep at twelve and wake up at eleven – our lives revolve around work. However, there is no conflict with my wife; we do not fight. My mind remains focused on family and earning a living. Technically, I should rest, but I just cannot."

Lastly, as BBH6 wisely said,

"Family is truly number one. That is why you strive – whether it is for your job or your family. Everything leads back to the family."

In light of the theme, Commitment, and Dedication to Family, prioritizing family as the core of one's life held immense importance. Children and spouses served as ongoing sources of inspiration, motivating continued effort. Despite fatigue and worries, they continued to work for their well-being. Demonstrating perseverance and love through actions was paramount. These collective actions and mindsets contributed to a sense of (A) accomplishment, aligning with the components of the PERMA model—essential for overall well-being and happiness. Familiar commitment became integral to one's identity and self-awareness, providing strength and guidance and placing trust in a higher power that offers hope and support during decision-making. A study by Jocson and Garcia (2021) highlighted that Filipino parents prioritize family above all else. The desire for children to complete their education reflects the value placed on education within Filipino families.

Theme 10: Harmonizing Independence and Connection

The Baby boomer husbands demonstrated the balance of individuality and togetherness in marriages. Marriage often involves finding a middle ground. Compromise means both partners give a little to meet each other's needs. Baby boomer husbands need to discuss and negotiate differences, whether they are related to finances, household chores, or personal preferences. Compromising does not mean sacrificing your core values; it is about finding solutions that benefit both individuals. BBH2 expressively stated

"Until now, we still go on dates. For instance, if I suddenly have some extra money, we ride the motorbike and visit places – maybe go to SM for a meal or head to Binan (pointing). Sometimes, it is scorching hot, like when we rode in a Benz – it was just the two of us. Yes, it is to avoid long arguments and conflicts between spouses."

Lastly, derived from the statement of BBH5

"Perhaps, ma'am, there is nothing to complain about. She was incredibly kind. As for me, I have admitted that I am the one with a mischievous streak – I am the troublemaker. However, my wife is untouchable. She is deeply religious and does not know how to get angry. Moreover, during church visits, sometimes we would take a tricycle to go somewhere – back when there were no malls yet."

The theme Harmonizing Independence and Connection emphasizes maintaining a balance between work and personal life and considering financial aspects (such as money management), which aligns with responses. Whether a simple meal or an outing, these moments strengthen the couple's bond. These moments are precious and contribute to a harmonious relationship. Spending quality time can indeed reduce misunderstandings and promote understanding. When partners recognize each other's flaws and respond with kindness, it strengthens their bond.

Conclusively, the cornerstone of engagement (E), as cited among the components of the PERMA model – is the lively pulse that keeps family ties strong as a father, husband, or sibling wears different hats. Their ability to adapt while retaining one's essence – whether as a protector, provider, or confidant – speaks to one's unique identity. They establish limits to prevent protracted arguments, yet their sympathy never wanes. Additionally, Edwards et al. (2023) mentioned in their study that they investigated the relationship between conscientiousness, quality time, and relationship satisfaction. They found a positive correlation between conscientiousness scores, quality time, and relationship satisfaction. Understanding these personality variables can help individuals enhance their

romantic relationships by identifying qualities to look for in a partner or encouraging behaviors like spending more quality time together.

4.0 Conclusion

The research contributes to our understanding of well-being by emphasizing the importance of engagement (E), positive relationships (R), and accomplishments (A). Recognizing these components adds to the existing knowledge of happiness and flourishing. Moreover, it underscores how interpersonal dynamics, communication, and seeking support play crucial roles in relationships. These factors align with the PERMA model, emphasizing that positive relationships (R) are vital for overall well-being. Conclusively, based on the study's findings, various significant challenges within relationships, emotional and relationship challenges, interpersonal and social aspects, and financial and practical concerns were evident in the baby boomer husbands. Despite these challenges, Baby boomer husbands can navigate conflicts, accept imperfections, communicate effectively, and prioritize commitment. It reflects the understanding that challenges are inevitable, but a strong marriage thrives when partners remain resilient and adaptable. The mention of challenges – common even in today's generation – opens avenues for further research. Investigating how individuals navigate these challenges, adapt, and maintain their well-being could be a valuable study area.

5.0 Contributions of Authors

There were no contributing authors in this study; there was only one author. The author is responsible and accountable for the completion of this paper.

6.0 Funding

This work received no specific grant from any funding agency.

7.0 Conflict of Interests

The author declares no conflicts of interest about the publication of this paper.

8.0 Acknowledgment

The researcher wants to express her deepest gratitude to her family for their unwavering support throughout this journey. Her mother, Chel, for her unwavering support of her dreams, aids a big impact financially and takes care of her daughter while taking her graduate studies; her father, Emil, whose presence was felt by cooking her delicious meals and making sure her health is stable along with work and her studies, her sibling, Carlos, and her extended family, as they took the responsibility of taking care of her daughter. Her loving husband, Rovie, has been her rock, confidant, and partner in all endeavors. Moreover, Ramona, for her precious daughter's smiles, hugs, and unwavering love, has given her strength during challenging times. Her research adviser, Ralph R. Laviña, for sharing his knowledge, scheduling consultations, and ensuring that the work was headed in the right direction; Dr. Ma. Lorena M. Tagala, the researcher's thesis writing moderator, for consistently crafting valuable lessons for their sessions, maintaining order, and emphasizing critical due dates. Her unwavering commitment to the researchers' success was evident throughout the process. LCBA's Qualitative Data Analyst, Ronel John E. Tarcilo, for taking on the difficult task of handling the study's qualitative data and assisting with data interpretation; The panelists, Dr. Ma Lorena M. Tagala, Mr. Alfredo G. Perez, Jr Dr. Christine M. Hernandez, and also to Dr. Sheililo R. Amihan, for their constructive criticism of making the study more succinct and effective; The validators Ms. Jenica Perez, Mr. Marlon Canuel, and Mr. Bernard Christopher Catam, for sharing their time and expertise in validating the study's instrument for the accuracy of the study. The researcher is truly grateful to her co-faculty at UPHSD-Calamba, Mr. Rain Tolentino and Mr. Bernard Fernandez, and Doc Egaie, her mentors and consultants, for providing invaluable guidance, expertise, and constructive feedback. Their influence shaped the direction of her research and empowered her to overcome challenges. The researcher expresses immense gratitude to her employer, Philippine Precision Technology Inc., for providing financial support to complete her study. Her boss, Mr. Hirohisa Araki, granted the approval, which enabled her to take the necessary time to collect and analyze the data. She also appreciates the guidance and unwavering support of her manager, Mr. Jojo, and her colleagues, Ms. Nina, Ms. Razel, and Mr. Joshi; Her friends and classmates, Eugene, Mary Joy, Joni, Trish, Paulo, Ellaine, Karen, and Keith, for their unwavering support, camaraderie, and shared laughter have made this research journey more meaningful. Their friendship has enriched her life, and she is truly grateful. Finally, in this profound journey of knowledge and self-discovery, she extends her heartfelt gratitude to the Almighty God, the divine architect of her life. His guiding light has permeated every facet of my project, illuminating my path with wisdom and inspiration.

9.0 References

- An, U., Park, H. G., Han, D. E., and Kim, Y. H. (2022). Emotional Suppression and Psychological Well-Being in Marriage: The Role of Regulatory Focus and Spousal Behavior. *International Journal of Environmental Research and Public Health*, 19(2), 973. <https://doi.org/10.3390/ijerph19020973>
- BetterHelp Editorial Team. (2024, May 22). Love, Marriage, And Commitment: Tips For A Lasting Partnership. BetterHelp. <https://www.betterhelp.com/advice/love/marriage-love-and-commitment-tips-for-a-lasting-partnership/>
- Busetto, L., Wick, W., & Gumbinger, C. (2020). How to use and assess qualitative research methods. *Neurological Research and Practice*, 2(1), 14. <https://doi.org/10.1186/s42466-020-00059-z>
- Romero Jeldres, M., Díaz Costa, E., & Faouzi Nadim, T. (2023). A review of Lawshe's method for calculating content validity in the social sciences. *Frontiers in Education*, 8, 1271335. <https://doi.org/10.3389/educ.2023.1271335>
- DeJonckheere, M., & Vaughn, L. M. (2019). Semistructured interviewing in primary care research: A balance of relationship and rigour. *Family Medicine and Community Health*, 7(2), e000057. <https://doi.org/10.1136/fmch-2018-000057>
- Dew, J., Barham, C., & Hill, E. J. (2021). The longitudinal associations of sound financial management behaviors and marital quality. *Journal of Family and Economic Issues*, 42, 1–12. DOI: 10.1007/s10834-020-09701-z
- Ernaati, H., Mas'udah, A. F., Setiawan, F., & Isroin, L. (2023). The Factors That Cause Early Marriage and the Impact on the Psychology of Couples in Rural Areas. In *Proceedings of the 3rd Borobudur International Symposium on Humanities and Social Science 2021 (BIS-HSS 2021)* (pp. 33). Atlantis Press. DOI: 10.2991/978-2-494069-49-7_33
- Edwards, L., Mitchell, G., Goodman, T., Cloud, E., & Blessinger, M. (2023). *Relationship Between Quality Time, Conscientiousness, and Relationship Satisfaction*. Belmont Digital Repository.
- Gregorio, V. L., Batan, C. M., & Blair, S. L. (Eds.). (2023). *Resilience and familism: The dynamic nature of families in the philippines*. Emerald Publishing Limited. <https://doi.org/10.1108/S1530-3535202323>
- Harvard Men's Health Watch. (2019, June 5). Marriage and men's health. Harvard Health Publishing. <https://www.health.harvard.edu/mens-health/marriage-and-mens-health>
- Hsu, T.-L., & Barrett, A. E. (2020). The association between marital status and psychological well-being: Variation across negative and positive dimensions. *Journal of Family Issues*, 41(11), 2179–2202. <https://doi.org/10.1177/0192513X20910184>
- Jocson, R. M., & Garcia, A. S. (2021). Religiosity and spirituality among Filipino mothers and fathers: Relations to psychological well-being and parenting. *Journal of Family Psychology*, 35(6), 801–810. <https://doi.org/10.1037/fam0000853>
- Ludden, D. (2020). How Marriage Affects Health in Older Adults: The Role of Marital Support and Strain in Long-Term Well-Being. *Psychology Today*. <https://www.psychologytoday.com/intl/blog/talking-apes/202012/how-marriage-affects-health-in-older-adults>
- Philippine Statistics Authority. (2023, February 10). Registered marriages in the Philippines: 2021. PSA. <https://psa.gov.ph/content/registered-marriages-philippines-2021>

- Sassler, S., & Lichter, D. T. (2020). Cohabitation and marriage: Complexity and diversity in union-formation patterns. *Journal of Marriage and Family*, 82(1), 35–61.
<https://doi.org/10.1111/jomf.12617>
- McNelis, M., & Segrin, C. (2019). Insecure attachment predicts history of divorce, marriage, and current relationship status. *Journal of Divorce & Remarriage*, 60(5), 404–417.
<https://doi.org/10.1080/10502556.2018.1558856>
- Subedi, K. R. (2021). Determining the Sample in Qualitative Research. *Scholars' Journal*, 4, 1-13. <https://eric.ed.gov/?q=qualitative&id=ED618228>
- Talodi, T. (2019). The methodological choice: Exploring interpretative phenomenological analysis. In T. Talodi, *How Parties Experience Mediation* (pp. 89–116). Springer International Publishing. https://doi.org/10.1007/978-3-030-28239-4_4
- Xavier. (2023, October 7). Ultimate Guide: Shotgun Weddings in the Philippines - Quick, Thrilling, and Memorable! [Blog post]. Wedding Wonder.