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Supply Chain Performance and Market Dynamics of Native Chicken Production in Davao Oriental: Challenges, Opportunities, and Sustainability Strategies

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Abstract. The native chicken industry in Davao Oriental contributes to local food security and rural livelihoods, yet inefficiencies in the supply chain limit its growth. This study evaluates the performance of the supply chain in native chicken production, focusing on key players, logistics, market flow, and economic viability. A survey was conducted among 60 native chicken raisers, 12 buyers, and four traders in the City of Mati, Davao Oriental. Results indicate that native chicken production remains predominantly backyard-based, with low input and high resilience. Key challenges include inadequate transportation infrastructure, weak market linkages, and price volatility. The average farm-to-market distance is 5.7 kilometers, primarily covered by motorcycles, leading to bird mortality and quality concerns. Market price disparities were evident, with traders earning an average profit margin of 40.43% per kilogram, while institutional buyers, particularly restaurants, achieved a margin of 66.89%. Despite these inefficiencies, profitability analysis confirms the financial viability of native chicken production, with opportunities for market expansion. The study recommends targeted interventions to enhance productivity, improve transportation and storage infrastructure, and establish stronger market linkages, ensuring a more sustainable and competitive native chicken industry.

Keywords: Native chicken; Supply chain performance; Market dynamics; Davao Oriental; Philippines.

1.0 Introduction

Poultry farming is a significant industry in the Philippines, contributing substantially to the country's food security and economy. Chicken production accounts for approximately 40% of the country's total livestock and poultry output, with domestic consumption projected to reach 2 million metric tons by 2023 (Statista, 2023). Despite this growth, the native chicken industry remains underdeveloped, accounting for only a tiny fraction of the poultry sector. However, native chickens have significant economic and nutritional potential, particularly for smallholder farmers. They contribute to rural livelihoods by serving as a key source of income and food security, especially in low-income communities where commercial poultry farming is less viable (Heft-Neal et al., 2008). The increasing consumer preference for organic and free-range poultry products presents a market opportunity that remains largely untapped.

Unlike commercial broilers, native chickens are typically raised in backyard settings with minimal resources. They are well-adapted to local conditions and can survive on low-quality feed and forage while displaying strong disease resistance (PCAARRD, 2023). However, their production remains low due to several persistent challenges,

including limited access to quality breeding stock, poor nutrition, and high mortality rates (Chang, 2007). The inefficiency of the supply chain exacerbates these issues even further. Key bottlenecks include inadequate infrastructure, limited market access, and insufficient research and development investments (Ageconsearch, 2014). As a result, small-scale farmers struggle to scale up production, and supply fails to meet increasing demand.

In Davao Oriental, native chickens are highly sought after due to their perceived health benefits, distinct taste, and organic quality. The province has a growing demand for native chicken meat, particularly among health-conscious consumers and those preferring traditionally raised poultry. Despite this demand, supply remains constrained due to inefficient farming practices, limited government support, and weaknesses in the supply chain (PIA, 2022). While the provincial government has initiated programs to enhance native chicken farming, a well-structured and sustainable supply chain remains absent (PCAARRD, 2023). Current data suggests that the province's native chicken sector is characterized by fragmented production systems and inconsistent market linkages, resulting in supply shortages and price fluctuations.

Understanding the supply chain performance of native chicken in Davao Oriental is crucial to addressing these inefficiencies. This study aims to identify key bottlenecks and potential opportunities for improving the supply chain. By analyzing the production flow from farmers to consumers, this research will provide insights that can enhance productivity, improve market access, and strengthen the economic viability of native chicken farming in the province. The findings will inform policymakers and stakeholders in developing targeted strategies to enhance the efficiency and sustainability of the supply chain, ultimately contributing to rural development, economic stability, and food security in the region.

2.0 Methodology

2.1 Research Design

This study employed a survey research design to analyze the supply chain of native chicken production in selected municipalities of Davao Oriental. The survey method was chosen because it allows for collecting firsthand data from key players in the native chicken industry, including raisers, traders, and buyers. The study utilized primary and secondary data to provide a comprehensive industry overview. Communication letters were sent to municipal and city mayors to seek permission to conduct the study. Due to the lack of official records on native chicken production per study site, the tracer methodology and snowball sampling were employed to identify native chicken raisers and key stakeholders along the supply chain.

2.2 Research Locale

The study was conducted in District II of Davao Oriental, where native chicken production is a recognized source of livelihood. The research sites were selected based on the notable presence of native chicken businesses and their accessibility for data collection. Davao Oriental is renowned for its livestock and poultry industry, with backyard farming being a dominant sector. The province’s favorable land and climatic conditions make it an ideal location for poultry and livestock production. While economic data from the Bureau of Agricultural Statistics (2007) highlights the industry’s significance, more recent industry insights were gathered to provide context for the study.

2.3 Research Respondents

The study involved three groups of respondents: 60 native chicken raisers who supply to traders, four traders who buy and sell native chickens, and 12 buyers, including institutional buyers and walk-in consumers. The respondents were identified through snowball sampling, where an initial set of informants referred other potential participants who met the study’s inclusion criteria. The inclusion criteria required that participants be engaged in native chicken production or trading for at least one year, be between 18 and 85 years old, and be involved in commercial transactions, such as supplying native chickens to food businesses. Additionally, quota sampling was employed to determine the number of respondents per category, ensuring sufficient representation from the three municipalities and one city included in the study. Complete enumeration was conducted for traders, as their total number in the study area was manageable.

2.4 Research Instrument

A structured survey questionnaire served as the primary research instrument for data collection. The questionnaire was adapted and modified from previous supply chain studies (Magallon, 2012; Soliven & Deriada, 2008; Poonon & Soliven, 2014) to align with the specific characteristics of the native chicken industry. Three questionnaire versions were developed: one for native chicken raisers, one for traders, and one for buyers. The questionnaire gathered information on the flow of native chickens from producers to end consumers and factors influencing the supply chain. To ensure validity, the modified questionnaire underwent expert evaluation and pilot testing before its full implementation.

2.5 Data Gathering Procedure and Analysis

The study relied on both primary and secondary data to achieve its objectives. Primary data were collected through structured interviews with identified respondents, while secondary data were sourced from online databases, including the Bureau of Agricultural Statistics and the Philippine Statistics Authority. These secondary sources provided background information on the volume of production and industry trends. For primary data collection, respondents were traced using a supply chain mapping approach, starting from buyers and working backward to traders and raisers. This method ensured that all key players in the native chicken supply chain were identified correctly. Data were analyzed using frequency counts and percentages to determine trends in the supply chain. The study also constructed a supply chain map based on survey responses, illustrating the interactions and flow of native chickens between raisers, traders, and consumers.

2.6 Ethical Considerations

This study adhered to the ethical standards of research to protect participants' rights and confidentiality. Informed consent was obtained from all respondents before participating, ensuring they understood the study's purpose, procedures, and voluntary nature. Respondents' personal information was kept confidential to maintain anonymity, and all collected data were securely stored and used strictly for research purposes. Participants were assured that they could withdraw from the study without any consequences. The study also obtained permission from local government authorities before conducting fieldwork.

3.0 Results and Discussion

3.1 Profile of the Participants

Native Chicken Raisers

Table 1 shows native chicken raisers in Davao Oriental operate under backyard production systems, typically maintaining 25 birds on a free-range system. Raising native chickens is a family activity, with fathers being the primary caretakers—92% of raisers are male. Most respondents (53%) are aged 41-60, while 10% are 61 and above. The majority (80%) are married, and their educational levels vary: 50% have reached elementary education, 30% have finished high school, and 20% have attained tertiary education. Native chicken raisers belong to a marginalized sector, with 69% earning less than Php 5,000 per month. Farming is the primary source of income for 87% of them. Traditionally, rural families raise native chickens, scavenging for food in their surroundings. Most (87%) have been in this practice for less than 20 years. The primary reasons for raising native chickens include household consumption, emergency income, and food for guests. They prefer native chickens due to easy care, low costs, and market demand. Most raisers keep other livestock, but over 50% of their total livestock are native chickens. On average, raisers live 5.7 km from the nearest market and 1 km from the nearest road. They transport chickens using public vehicles, such as tricycles and motorcycles.

Native Chicken Traders

Native chicken traders in Davao Oriental are categorized as compradores, who set prices through unwritten agreements. Trading native chickens has long been a source of income, with all traders having over 11 years of experience. As shown in Table 2, most (75%) are male, all are married, and education levels vary—25% completed secondary education, while 50% attended college. Traders earn PHP 10,000 monthly from native chicken trading and other livestock sales. Starting capital averaged Php 10,000, increasing to Php 20,000. Traders also deal in livestock and goats for additional income. None attended training on native chicken trading, relying on agricultural brochures for information. Compradores, the first-level traders, buy directly from raisers, consolidating supply and negotiating prices. They actively seek chickens in different barangays, especially during

lean months. They also regulate supply to institutional buyers to maintain stable prices. The term "comprador" comes from the local word "compra," meaning to buy in bulk.

Table 1. *Socio-demographic profile of native chicken raisers*

Characteristic	Frequency	Percentage (%)
Age		
21-30	9	15
31-40	13	22
41-50	18	30
51-60	14	23
61-70	5	8
71 & above	1	2
Gender		
Male	55	92
Female	5	8
Civil Status		
Single	8	13
Married	48	80
Widow/Widower	4	7
Educational Attainment		
Elementary	30	50
Secondary	18	30
Tertiary	12	20
Monthly Income		
Below Php 5, 000	36	60
Php 5, 000- 10, 000	16	27
Php 10, 001 and above	8	13
Main Source of Income		
Farming	52	87
Business	5	8
Others	3	5
Estimated Operating Capital		
Below Php 5, 000	55	92
Php 5, 000-10, 000	5	8
Php 10, 001 and above	0	0
Number of years as Raisers		
Less than 10 years	5	8
11 to 20 years	52	87
31 years and above	3	5
Number of Trainings and Seminars Attended related to Native Chicken		
None	57	95
1-3	3	5
4 and above	0	0

Native Chicken Institutional Buyers

In the study, institutional buyers included restaurants, stalls, and public markets, all of which are micro-enterprises with a net worth below Php 3 million. One restaurant, which specializes in grilled native chicken, acted as a price setter, making its prices a reference for compradores when purchasing native chicken from raisers. Some restaurants also provided financial support to trusted compradores with long-term business relationships. End consumers of native chicken included household consumers, walk-in customers, and restaurant diners serving various native chicken dishes.

3.2 Supply Chain Mapping

Overview of the Native Chicken Industry

The Philippine chicken industry significantly contributes to economic growth and food security. Regarding production volume, the chicken industry is second to the hog industry in the animal husbandry sector. Approximately 40% of the combined livestock and poultry production volume is credited to the chicken industry. The total per capita consumption of chicken meat in urban areas was 9.32 kilograms, whereas in rural areas, it was 6.14 kilograms. The scale of operation of chicken production in the country is either commercial or backyard. Backyard raisers have less than 100 birds, while those with more than 100 birds are categorized as commercial.

Native chickens are of a local breed as well as the so-called "improved" breed, which is a cross of local chickens with foreign traits. The native Chicken industry is linked through local markets to low-income networks of small enterprises. Native Chicken production is a viable investment option for small and medium-sized enterprises and an important component of the Philippine economy, particularly for rural families. Generally, the native chicken industry is characterized by backyard production, which utilizes few resources, resulting in low productivity and high mortality rates.

Table 2. *Socio-demographic profile of native chicken traders*

Characteristic	Frequency	Percentage (%)
Age		
21-30	0	0
31-40	3	75
41-50	1	25
Gender		
Male	3	75
Female	1	25
Civil Status		
Single	0	0
Married	4	100
Educational Attainment		
Elementary	1	25
Secondary	1	25
Tertiary	2	50
Monthly Income		
Php 5,000.00 -10, 000.00	0	0
Php 10, 001.00 and above	4	100
Main Source of Income		
Farming	4	100
Estimated Operating Capital		
Below Php 5, 000.00	0	0
Php 5,000.00 -10, 000.00	0	0
Php 10, 001.00 and above	4	100
Number of years as Trader		
Less than 10 years	0	
11 to 20 years	4	100
Number of Trainings and Seminars Attended related to Native Chicken		
None	4	100
1-3		

According to Lizada (2012), in the case of Thailand, local chickens present a typical "niche" market that is not attractive to large businesses, given that demand exceeds supply. However, this provides small farmers with an opportunity to augment their income. As far as production is concerned, the productivity of the scavenging system tends to be low, with high mortality rates and low hatchability rates. The demand for native chicken is increasing due to growing concerns about consumers' food safety and health issues. Filipinos prefer the meat of native chicken because of their taste, leanness, and suitability for Filipino dishes.

The chicken inventory is classified according to data from the Philippine Statistics Authority. As of December 31, 2014, the total chicken population was 176.47 million birds, representing a 5.25 percent increase from the previous year's 167.67 million birds. The inventory of broilers (66.62 million) and layer chickens (31.25 million) also increased by 8.18 percent and 4.16 percent, respectively, compared to the inventory for 2013, which was 61.58 million (broiler) and 30.01 million (layer). The native chicken inventory also grew by 3.31 percent, reaching 78.6 million in 2014.

The chicken production volume by region in Mindanao as of December 31, 2014. The data from the Philippine Statistics Authority, specifically for Mindanao, indicates 302,000 metric tons of live-weight chicken. Also, it was declared that among the regions in Mindanao, the region of Northern Mindanao has the highest chicken

production volume as of 2014, totaling 140,522 metric tons. It was followed by the Davao Region with 68,424 metric tons of live weight of chicken. Then, SOCCSKSARGEN, Zamboanga Peninsula, Caraga Region, and ARMM produce 47,970 metric tons, 26,492 metric tons, 13,164 metric tons, and 5,427 metric tons of chicken, respectively. In totality, chicken production for 2014 has increased compared to 2013, and there was an 8,972 metric tons difference in the total production.

The chicken inventory in the Davao Region, categorized by classification, is presented in Figure 13. The different classifications of chicken were native, layers, and broilers. From a total production of 10,673,859 birds in 2013, production increased significantly by 17.70% in 2014, reaching 12,563,201 birds by 2016. Among the classifications of chicken, consistently native chicken (including the improved breed) garnered the highest production for the years 2013 and 2014 with a total production of 6, 032, 262 and 7, 308, 862 birds, respectively, compared to the production of layers and broilers that only accounts 1, 276, 830 and 3, 977, 514 birds respectively in 2014. The production of native chickens is significantly higher than the combined production of layers and broilers in the Davao Region. Thus, this information highlights the potential of the native chicken industry in the agribusiness sector, as it supplies such products.

Native Chicken Supply Chain in Davao Oriental

The four different supply chains of native chicken in the Province of Davao Oriental are illustrated in Figures 1, 2, 3, and 4. Figure 1 presents Supply Chain 1, which follows the product flow of native chicken from the raisers to the comprador, to institutional buyers, and ultimately to household consumers or walk-in buyers. The routes revealed that native chicken raisers would deliver live native chickens to the comprador, selling them directly to institutional buyers. Comprador will also sell live native chicken to the public market, especially the patient breed (a breed of native chicken with black-colored meat and bones), and then eventually to household consumers or walk-in buyers of the public market. Occasionally, if there is demand, the comprador will sell live native chickens directly to walk-in buyers, specifically to his neighbors. The institutional buyer will inform the trader about the current volume of demand via cellular phone (text messaging and calls). Other information and feedback exchanges are also done through text messaging and calls. Routes traced, consisting of the chains of restaurants serving native chicken, public markets, and household consumers or walk-in buyers, showed the total picture of the native chicken supply chain, as well as its major players and product flow.

The native chicken supply chain 2 is presented in Figure 2. Supply chain 2 presented that native chicken raisers will sell and deliver live native chicken to a comprador from San Isidro. The trader will then deliver the live native chickens to institutional buyers at their agreed-upon time to a barbecue restaurant in the City of Mati. The institutional buyer will inform the trader about the current volume of demand via cellular phone (text messaging and calls). Other information and feedback exchanges are also done through text messaging and calls. A minimum of 50 kilos per delivery was the average volume of demand required by the institutional buyer. Sometimes, the trader will also sell live native chickens to barbecue stalls. This happens occasionally due to a shortage of live native chickens.

The native chicken supply chain 3 is presented in Figure 3. Supply Chain 3 presented that raisers will directly sell live, native chickens to institutional buyers and/or the public market. Individual raisers will handle the sales by personally delivering live native chickens to buyers from various areas in the province. Eventually, household and walk-in buyers will have access to live native chickens through the public market. Institutional Buyers of this chain are not particular about who will deliver the supply of native chicken; the important thing is that every day, different individual raisers provide them with live native chicken of any breed. This supply chain showed no intermediaries between the seller and the buyer.

Figure 4 presents the native chicken supply chain 4, a zero-level chain. The individual raisers will directly sell live native chickens to household consumers or walk-in buyers, who include their neighbors and other local consumers. The primary reason for purchasing is personal consumption. Buyers of this chain will need live native chicken to cook different menus and celebrate various occasions and festivities.

The native chicken supply chain 5 was presented in Figure 5. The chain starts from the raisers to the traders, institutional buyers, and restaurant diners who love to eat different menus of native chicken. The trader will

deliver the live native chickens to institutional buyers on their agreed time, to a barbeque restaurant in the City of Mati. The institutional buyer will inform the trader about the current volume of demand through cellular phone (text messaging and call). Other information and feedback exchanges are also done through text messaging and calls.. The customers of this institutional buyer include all who eat grilled native chicken products. Customers are not limited to the area's residents. Most diners of this restaurant are tourists, travelers, and passengers of PUV who travel to and from Davao City and other nearby cities. Diners of this chain are the ultimate consumers of the cooked native chicken the restaurant serves.

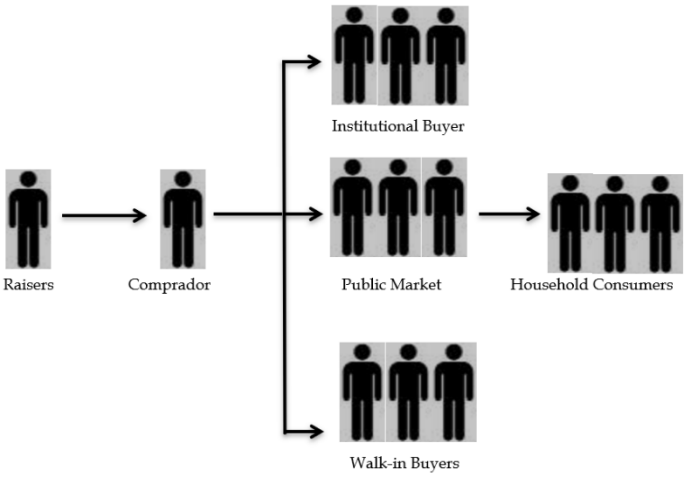

Figure 1. *Supply Chain 1 – Comprador to Household Consumers*

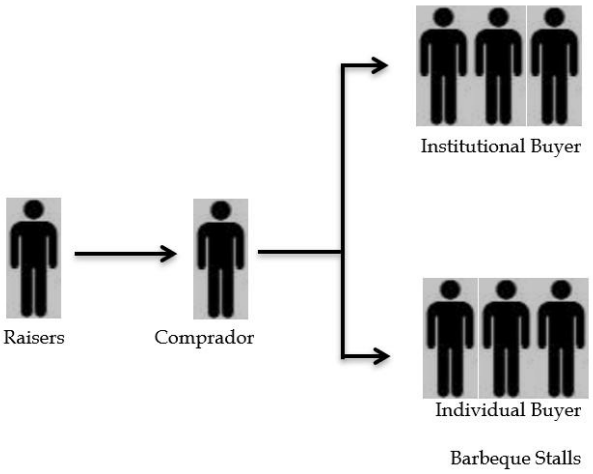

Figure 2. *Supply Chain 2 – Comprador to Institutional Buyers*

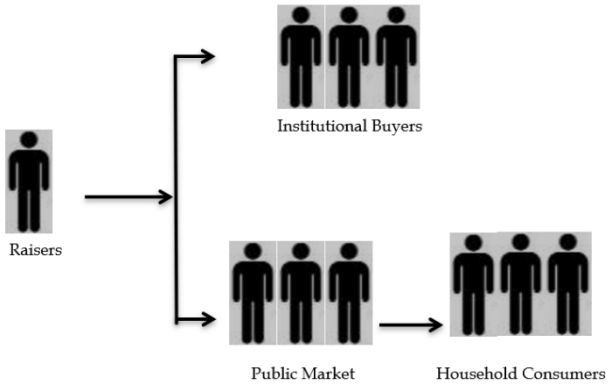

Figure 3. *Supply Chain 3 – Raisers to Institutional Buyers*

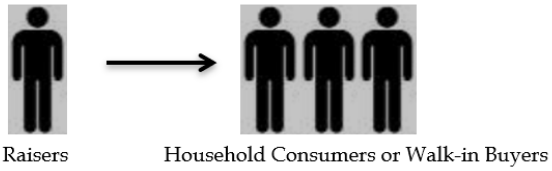

Figure 4. *Supply Chain 4 – Raisers to Walk-in Buyers*

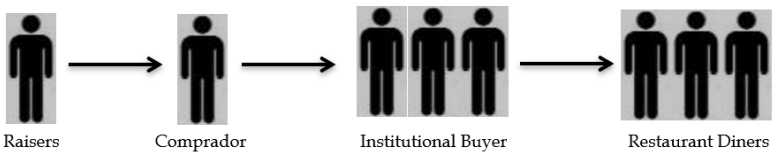

Figure 5. *Supply Chain 5 – Raisers to Restaurant Diners*

3.3 Key Customers and Product Requirements

Native Chicken holds a market position due to its specific features, catering to consumers' preferences. Native chicken is preferred because of its flavor, taste, and texture. Since native chickens are raised in backyard settings, it gives the impression of being healthy because they are organically grown. Local traditions, ceremonials, and other rituals require native chicken. It is essential to understand the typical marketing practices of native chickens in the Province of Davao Oriental to determine the product requirements of each key customer in the supply chain. As a result, the key customers for native chicken were the following: a) traders, b) restaurants serving dishes made from native chicken, c) barbecue stalls selling different grilled parts of native chicken, d) public markets, and e) household consumers.

Most of the key players, customers, and product requirements of the supply chain chose customers because they had already considered them as "suki," and the latter could request cash advances. The frequency of demand from native chicken raisers to traders was daily, and to be delivered by the key player. There are no limitations on the volume of native chickens to be delivered, except for institutional buyers (restaurants), who specify that a minimum of 30 kilograms per delivery must be observed. Any breed or strain will be accepted, except for the patient breed of native chicken, due to its black-colored meat and bones, which the institutional buyer prefers not to purchase. Key players who opted to deliver native chicken used motorcycles with wooden sticks as their mode

of delivery and transportation. Delivery occurs every morning from the trader to the institutional buyer and typically begins at 9 a.m. This time is favorable for transporting the native chicken, especially since the chickens are hung down. Some key players decided to deliver at any time of the day as the customer's needs arose. Household and walk-in buyers have no specified requirements.

For the key players, customers, and product requirements of Supply Chain 2, only institutional buyers specified their requirements for the volume of supply and quality of native chickens to be delivered. Accordingly, the trader must observe a minimum of 50 kilos per delivery to meet the demands of the institutional buyer (Bador Barbeque). The institutional buyer has a higher demand for the volume of native chicken because it only sells native chicken grilled products. All key players and customers specified no time of day for the transaction. Delivery was still through motorcycles.

For Supply Chain 3, key players, customers, and product requirements. Occasionally, individual raisers sell native chickens directly to institutional buyers. Raisers individually transport their native chickens by motorcycle and directly deliver them to target buyers, including those in the public market. Raisers also entertained walk-in buyers and other household consumers who demand native chicken, but the key customers will pick up the chicken. The key customer required no breed. This also applied to the key players, customers, and product requirements of supply chain 4. Individual raisers will sell native chickens to their neighbors and other walk-in buyers in the area as the customers' needs arise.

For supply chain 5, key players, customers, and product requirements. Only institutional buyers specified their requirements regarding the supply volume and quality of native chickens to be delivered. Accordingly, the trader must observe a minimum of 50 kilos per delivery to meet the demands of the institutional buyer (Bador Barbeque). The institutional buyer has a higher demand for the volume of native chicken because it only sells native chicken grilled products. All key players and customers specified no time of day for the transaction. Delivery was still through motorcycles. The ultimate customer for this chain is the restaurant diner who dines in and/or takes out grilled native chicken. Bador serves only grilled native chicken, like whole native chicken barbeque, or parts cut into pecho and paa, and serves native chicken gizzard and liver. Diners want tender, tasty, and delicious grilled chicken.

The purpose or menu of the chicken also determines the product requirements for native chicken. Restaurants serving dishes made from native chicken prefer native chickens with tender meat that weigh about 700 grams to 850 grams. At the same time, a specific restaurant serving special *lechon manok* prefers native chickens weighing 850 grams to 950 grams. Barbecue stalls serve different parts of the native chicken, with the preferred native chickens weighing less than 700 grams. At the same time, public markets sold live native chickens in various sizes and weights to cater to different customers' preferences. Furthermore, household consumers do not have specific preferences, as they will purchase native chickens in various sizes and weights. However, they depend on their willingness to buy and capacity to pay for the native chicken.

Not all the identified key customers were particular about buying native chickens based on their type or strain. However, there were cases of a preferred strain if native chickens were used for the residents' rituals and other ceremonial purposes. These household consumers have specific product requirements in terms of color, age, and size, among other factors. Some key customers have specific requirements regarding the quantity of native chicken to be purchased and delivered, as shown in Tables 3 and 4. Restaurants typically require 30 to 50 kilograms of native chicken per delivery as a raw ingredient for their native chicken menu. Barbecue stalls require approximately 30 kilograms of native chicken per week. Further, public markets and household consumers do not have specific requirements regarding the quantity of native chicken to be purchased and delivered. All key customers stated that they were very particular about the regularity of delivery and the availability of native chicken when needed.

3.4 Chain Performance Analysis

Supply chain performance can be analyzed using three key dimensions: effectiveness, efficiency, and responsiveness. While effectiveness is about "doing the right things," efficiency is "doing the things right." Supply chain effectiveness is concerned with the preference of the end consumer, and the primary indicator is customer

satisfaction (Magallon, 2012). Indicators were used to evaluate the performance of existing supply chains. The key performance indicators under the three-dimensional definitions are efficiency, flexibility, and responsiveness.

Marketing Cost incurred by every key player in the supply chain (see Tables 3, 4, 5, 6). Marketing expenses at the raiser's level include feedstuff, fuel for the motorcycle, family labor, and depreciation expenses for the chicken cage and other equipment. The marketing cost per kilogram was Php 5.01 at the raiser's level. On one hand, the marketing cost at the trader's level reached up to Php 4.56 per kilogram of native chicken. The costs incurred were feedstuff, transportation, tie box, and imputed costs. Furthermore, it was calculated that Php 12.52 would be incurred in selling live native chickens at the buyer's level, particularly in the public market. Moreover, the marketing cost at the institutional buyer's level, particularly for a restaurant, amounted to Php 28.60 per kilogram of grilled native chicken. This implies that expenses are significantly higher than delivering live native chicken only, as the cost incurred while processing native chicken entails additional expenses, particularly for raw ingredients used in marinating the chicken. Thus, based on the projected computation, the marketing cost was higher at the buyer's level, particularly in restaurants, due to the unique needs of other raw ingredients required for processing grilled native chicken.

These computations were used to present marketing costs and margins for a zero-level channel (supply chains 3 and 4), a one-level channel (supply chains 1 and 2), and supply chain 5.

Table 3. *Average Marketing Cost Incurred at Raiser's Level*

Expenses		Cost/Delivery (35 kilos of Native chicken)	Cost per Kilogram
Feed Stuff (Tahup)	1 kilo at Php 15.00/kilo	15.00	0.43
Transportation Expense			
Fuel (Motorcycle)	Php 60.00/delivery	60.00	1.71
Imputed Cost			
Family Labor	Php 100.00	100.00	2.86
Depreciation Cost of	Bamboo Cage with nipa roofing at Php 6.67/mo.	0.22	0.00629
Cage and other Equipment	Feeder and watering trays at Php 1.39/mo.	0.046	0.00131
	Brooding Nest at Php 0.83/mo.	0.028	0.0008
Total		**175.29**	**5.01**

Table 4. *Average Marketing Cost Incurred at Trader's Level*

Expenses		Cost/Delivery (35 kilos of Native chicken)	Cost per Kilogram (Php)
Feed Stuff (Tahup)	4 kilos at Php 15.00/kilo	60.00	1.71
Transportation Expense			
Fuel (Motorcycle)	Php 60.00/delivery	60.00	1.71
Tie Box and Others	Php 20.00/delivery	20.00	0.57
Imputed Cost	Php 20.00/delivery	20.00	0.57
Total		**160.00**	**4.56**

Table 5. *Average Marketing Cost Incurred at Institutional Buyer's Level (Public Market)*

Expenses		Cost/Day (50 kilos of Native chicken)	Cost per Kilogram
Feed Stuff (Tahup)	5 kilos at Php 15.00/kilo	75.00	1.50
Hired Labor (2)	Php 200.00/day	200.00	4.00
Space Rental	Php 250.00/day	250.00	5.00
Meal Expenses	Php 100.00/day	100.00	2.00
Depreciation Cost of	Weighing Scale at Php 8.33/mo.	0.28	0.0056
Equipment and	Cage at Php 16.67/mo.	0.56	0.0112
Other Facilities	Tables and Chairs at Php 10/mo.	0.33	0.00667
Total		**626.17**	**12.52**

Table 6. *Average Marketing Cost Incurred at Institutional Buyer's Level (Restaurant)*

Expenses		Cost/Delivery (100 kilos of Native chicken)	Cost per Kilogram
Marinating Ingredients	raw ingredients, estimated	1, 000.00	10.00
Sauce and spices	Soy sauce, vinegar, chilli	300.00	3.00
Charcoal and Barbeque Sticks	Charcoal at Php 120.00/sack	360.00	3.60
	Barbeque Stick at Php 20/$_{100pcs}$	40.00	0.40
Utilities expense	Light and water bills	200.00	2.00
Overhead Cost	Griller (1) at Php 320.00/day	320.00	3.20
Labor (slaughtering)	Manual slaughtering (2) at Php 320.00/day	640.00	6.40
Total		**2, 860.00**	**28.60**

The marketing costs and margins per kilogram of the key players in the native chicken supply chain (see Tables 7, 8, and 9). It can be gleaned from the table that the marketing cost is higher at the Institutional buyers level, computed at Php 12.52 per kilogram of native chicken., but it is also expected that the marketing margin is higher at Php 37.48 per kilogram, gaining 59.57% of the total profit when native chicken will only pass through from traders. On the one hand, the marketing cost and margin of the native chicken supply chain (zero-level channel), as presented in the table, showed that when institutional buyers directly sell native chickens, the public market will have a profit margin of Php 37.48 per kilogram of native chicken with a total of 60.0 % profit margin. Moreover, in the computation for the marketing cost and margin of native chicken supply chain five, which includes the institutional buyer who cooks and serves grilled native chicken to restaurant diners, has the highest possible profit margin of 66.89% even if it also incurred the highest marketing cost amounting to Php 28.60 per kilogram of native chicken. This implies that Supply Chain 5 has the most efficient and effective chain based on the computed marketing cost and margin.

Table 7. *Marketing Cost and Margin of Native Chicken Supply Chain, Supply Chain 1 and Supply Chain 2 (one level channel)*

Key Players	Average Buying Price (in Php)	Average Selling Price (in Php)	Marketing Margin (in Php)	Marketing Cost (in Php)	Profit Margin (in Php)	% Profit Margin
Native Chicken Raisers		150.00				
Traders	150.00	180.00	30.00	4.56	25.44	40.43
Institutional Buyers	180.00	230.00	50.00	12.52	37.48	59.57
Total			**80.00**	**17.08**	**62.92**	**100**

Table 8. *Marketing Cost and Margin of Native Chicken Supply Chain, Supply Chain 3 and Supply Chain 4 (zero level channel)*

Key Players	Average Buying Price (in Php)	Average Selling Price (in Php)	Marketing Margin (in Php)	Marketing Cost (in Php)	Profit Margin (in Php)	% Profit Margin
Native Chicken Raisers		180.00	30.00	5.01	24.99	40.00
Institutional Buyers	180.00	230.00	50.00	12.52	37.48	60.00
Total			**80.00**	**17.53**	**62.47**	**100**

Table 9. *Marketing Cost and Margin of Native Chicken Supply Chain, Supply Chain 5 (one-level channel)*

Key Players	Average Buying Price (in Php)	Average Selling Price (in Php)	Marketing Margin (in Php)	Marketing Cost (in Php)	Profit Margin (in Php)	% Profit Margin
Trader	150.00	180.00	30.00	4.56	25.44	33.11
Institutional Buyers (barbeque grill)	180.00	260.00	80.00	28.60	51.40	66.89
Total			**80.00**	**33.16**	**76.84**	**100**

The study identified the native chicken supply chain maps as traditional. This section analyzed the profitability and efficiency of the chains in terms of costs, including production, marketing, and transaction costs—the Cost

and Return Analysis of Native Chicken Trading. As shown in Table 10, the total sales of native chicken per delivery is Php 6,300.00, and the total expenses are Php 5,402.50; this includes the cost of native chicken sold, transportation expenses, and other imputed costs. The net income for native chicken trading per delivery of 35 kilograms of native chicken will be approximately Php 897.50. The net profit margin for native chicken trading is Php 14.24, with a return on investment of 16.61% per kilogram. The result of the return on investment means that for every 100 pesos invested by the trader, they will gain 16.61 pesos.

Table 10. *Average Cost and Return Analysis of Native Chicken Trading (per kilogram of native chicken and per delivery basis)*

	Cost per delivery of 35 kilos of Native Chicken (Php)	Cost per kilogram (Php)	
Sales of Native Chicken			
Php 180.00 per kilo	6, 300.00	180.00	
Less: Expenses			
Cost of good sold (Php 150.00)	5, 250.00	150.00	
Feed Stuff (Tahup) at Php 15.00/kilo for every 10 heads	52.50	1.50	
Transportation – Fuel (Php 60.00/delivery)	60.00	1.71	
Tie Box and others (Php 20.00/delivery)	20.00	0.57	
Imputed cost (Php 20.00/delivery)	20.00	0.57	
Total Expenses	5, 402.50	154.35	
Net Income	897.50	25.64	
Return on Investment			16.61
Net Profit Margin			14.24

It was challenging to compute the actual production cost of native chicken because, accordingly, this is a backyard sector in the country. Raising native chickens was already part of the day-to-day living of the household. Moreover, raising native chickens has a minimal cost for maintenance. Table 11 shows the cost and return analysis of native chicken production. In this computation, every minimum of 35 kilograms of native chicken, with an average selling price of Php 150.00 (raiser's level), will yield a net income of Php 2,003.33. The net income was computed from the total sales of Php 5,250.00, less the estimated total expenses of Php 3,246.67. Thus, this computation generates a return on investment of 61.70% and a net profit margin of 38.16. The data below is projected based on 35 kilograms of live, native chicken to be delivered seven times.

Table 11. *Average Cost and Return Analysis of Native Chicken Production (per kilogram of native chicken and per delivery basis)*

		Cost per delivery of 35 kilos of Native Chicken (Php)	Cost per kilogram (Php)	
Sales				
Php 150.00 per kilo		5, 250.00	150.00	
Less: Expenses				
Feed Stuff (Tahup)	1 kilo at Php 15.00/kilo			
	120 kilos for 3 months	1, 800.00	51.43	
Transportation				
Expense	Php 60.00/delivery	420.00	12.00	
Fuel (Motorcycle)	Approx.. 7 deliveries			
Imputed Cost				
Family Labor	Php 1, 000.00	1, 000.00	28.57	
Depreciation Cost of	Bamboo Cage with nipa			
Cage and other	roofing at Php 6.67/mo.	20.01	0.57	
equipment	Feeder and watering trays			
	at Php 1.39/mo.	4.17	0.12	
	Brooding Nest			
	at Php 0.83/mo.	2.49	0.07	
Total Expenses		3, 246.67	92.76	
Net Income		2, 003.33	57.24	
Return on Investment				61.70
Net Profit Margin				38.16

Moreover, the cost and return analysis of the native chicken restaurant business implies that engaging in the native chicken food business, specifically grilled native chicken, will give a return on investment of 83.30% on its direct materials and labor expenses. According to the computation (Table 12), the total expenses for every kilogram of grilled native chicken amount to Php 155.70, which includes raw ingredients, utility expenses, and salaries and

wages. Based on each player's cost and return analysis, it was found that the native chicken restaurant business had the highest net profit margin, at 49.88 pesos.

Table 12. *Average Cost and Return Analysis of Native Chicken Restaurant Business (per kilogram of native chicken basis)*

		Cost per Kilogram	
Sales			
Grilled Native Chicken at Php 260.00/kilo		260.00	
Less: Expenses			
Marinating Ingredients	raw ingredients, estimated	20.00	
Sauce and spices	Soy sauce, vinegar, chilli	6.00	
Charcoal and Barbeque	Charcoal at Php 120.00/sack	6.60	
Sticks	Barbeque Stick at Php 20/$_{100pcs}$	0.80	
Utilities expense	Light and water bills	4.00	
Direct Labor	Griller (1) at Php 320.00/day	6.40	
Labor (slaughtering)	Manual slaughtering (2) at Php 320.00/day	12.80	
Depreciation Expense of the	Building at Php 1, 666.67/mo.	1.12	
Building and other facilities	Equipment Other Facilities at Php 1, 333.33	1.78	
Salaries and Wages	Waitress at Php 320.00/day X 5	32.00	
	Dishwasher at Php 320.00/day X 3	19.2	
	Supervisor at Php 8, 000.00/mo.	8.00	
Other Expenses Meals and others		37.00	
Total Expenses		155.70	
Net Income		129.70	
Return on Investment			83.30
Net Profit Margin			49.88

3.5 Flexibility and Responsiveness of the Raiser-Respondents

Flexibility is assessed through the interaction among product volume, quality, and delivery. Meanwhile, the system is considered effective or responsive if it can deliver the goods as required by the customer or the ultimate market. Using the set of indicators, the native chicken raiser's performance is evaluated on product quality, performance satisfaction, and flexibility. The results are shown in Table 13.

Table 13. *Performance Indicators of Raisers of the Native Chicken Supply Chain, Davao Oriental*

Indicators	Frequency	Scale	Remarks
RESPONSIVENESS			
Product Quality			
1. Always produce and sell quality native chicken	55	4	High
2. Deliver the right volume and quality of native chicken.	44	3	Moderate
3. Satisfied with the volume produced and sold to the buyer.	42	4	High
4. Achieve delivery targets.	40	3	Moderate
5. Fulfill the orders and deliveries of native chicken when needed.	39	5	Very High
6. Share information regarding quality requirements to both buyers, traders, and others	45	4	High
7. Buyers always procure the volume as agreed.	46	5	Very High
Overall Mode		**4**	**High**
Performance Satisfaction			
1. We are happy to produce and deliver high-quality native chicken.	52	5	Very High
2. Income received is adequately rewarding.	49	4	High
3. I am happy with the price received from the buyers.	47	4	High
4. Satisfied with the rate of return on investment.	53	4	High
Overall Mode		**4**	**High**
FLEXIBILITY			
1. Seek alternative buyers when necessary.	38	4	High
2. Willing to negotiate or adjust the price or volume with buyers as needed.	44	4	High
3. Raiser's decision always prevails over that of the buyer.	56	2	Low
4. Adhere to the buyer's decision.	58	5	Very High
5. Trading with buyers is self-fulfilling and gratifying.	49	4	High
Overall Mode		**4**	**High**

Using the set of indicators, it can be gleaned from Table 14 that the native chicken trader's performance is evaluated in terms of product quality, performance satisfaction, and flexibility.

Table 14. *Performance Indicators of Traders of the Native Chicken Supply Chain, Davao Oriental*

Indicators	Frequency	Scale	Remarks
RESPONSIVENESS			
Product Quality			
1. Always produce and sell quality native chicken	4	5	Very High
2. Deliver the right volume and quality of native chicken.	4	5	Very High
3. Satisfied with the volume produced and sold to the buyer.	4	5	Very High
4. Achieve delivery targets.	4	5	Very High
5. Fulfill the orders and deliveries of native chicken when needed.	4	5	Very High
6. Share information regarding quality requirements to both buyers, traders, and others	3	4	High
7. Buyers always procure the volume as agreed.	4	5	Very High
Overall Mode		**5**	**Very High**
Performance Satisfaction			
1. We are happy to produce and deliver high-quality native chicken.	4	5	Very High
2. Income received is adequately rewarding.	4	5	Very High
3. I am happy with the price received from the buyers.	4	5	Very High
4. Satisfied with the rate of return on investment.	4	4	Very High
Overall Mode		5	High
FLEXIBILITY			
1. Seek alternative buyers when necessary.	3	3	Moderate
2. Willing to negotiate or adjust the price or volume with buyers as needed.	4	4	High
3. The trader's decision always prevails over that of the buyer.	4	2	Low
4. Adhere to the buyer's decision.	4	5	Very High
5. Trading with buyers is self-fulfilling and gratifying.	4	4	High
Overall Mode		**4**	**High**

4.0 Conclusion

The study highlights the vital role of the native chicken industry in Davao Oriental in supporting food security, employment, and rural income. Findings indicate that most production remains in the backyard sector, operating with minimal inputs in a sustainable yet low-productivity system. Despite high market demand, inefficiencies such as inadequate market linkages, inconsistent production volumes, and high transportation costs hinder the industry's full potential. A significant constraint is the lack of structured market access, which forces many raisers to rely on informal networks, resulting in price instability and limited income opportunities. The absence of cooperative groups further weakens farmers' bargaining power with traders and institutional buyers. Traders, particularly comprador, play a key role in consolidating native chickens from raisers and distributing them to restaurants and public markets. However, their influence on pricing and supply often results in uneven profit-sharing, with farmers receiving lower returns. Institutional buyers, such as restaurants, achieve higher profit margins due to value-added processing, underscoring the need for production diversification and value-chain integration among raisers.

Logistical challenges, particularly transportation limitations, affect product quality and delivery efficiency. Many farmers rely on motorcycles for transportation, which increases handling stress and potential mortality rates. Performance analysis using key indicators such as responsiveness, flexibility, and efficiency reveals that traders and institutional buyers adapt better to market demands than farmers, highlighting the need for capacity-building initiatives to enhance farmer competitiveness. To ensure the sustainable growth of the native chicken industry, improvements in production strategies, market linkages, and supply chain coordination are essential. Strengthening cooperative organizations, providing structured marketing support, and enhancing transportation systems can help farmers capture more value within the supply chain. Addressing these challenges will contribute to economic development, improve farmer livelihoods, and promote food security in Davao Oriental.

5.0 Contributions of Authors

The author contributed significantly and led the study's conception, design, and conduct, as well as the analysis and interpretation of results.

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7.0 Conflict of Interests

The authors declare no conflicts of interest in the conduct and publication of this study.

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9.0 References

Chang, H. S. (2007). Supply chain coordination in the poultry industry: Issues and trends. Agricultural and Resource Economics Review, 36(2), 230-237.

Heft-Neal, S., Otte, J., Pfeiffer, D., Roland-Holst, D., & Rushton, J. (2008). Market participation by smallholder poultry producers in developing countries: A review. Food and Agriculture Organization of the United Nations.

Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD). (2023). Enhancement of the Philippine native chicken through S&T on display at DATE. Retrieved from https://tinyurl.com/mufjkd5u

Philippine Information Agency (PIA). (2022, August 20). Davao Oriental eyes chicken production. Retrieved from https://tinyurl.com/mvebyb6p

Sarita, V. B., & Bautista, C. L. (2023). Acceptability and participation on the implementation of Irrigation Management Transfer Program (IMTP) in Davao Oriental. International Journal of Science and Research, 12(7), 116–119. https://doi.org/10.21275/SR23309132312

Soliven, M.L., and A. L. Deriada. 2008. Supply Chain Improvement for Fresh Vegetables in Region X (Thesis). Central Mindanao University, Department of Agricultural Economics, Musuan, Bukidnon.

Statista. (2023). Domestic consumption of chicken meat in the Philippines from 2012 to 2023. Retrieved from https://tinyurl.com/ma8vy4re

University of Minnesota, Agricultural Economics Search (Ageconsearch). (2014). Analysis of the native chicken supply chain and production constraints in the Philippines. Retrieved from https://ageconsearch.umn.edu/record/165854