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Perceived Service Quality and Customer Loyalty Among Third-Party Logistics

April Rose E. Opao, Marissa S. Quezon

Author Information:

College of Business & Accountancy, Graduate Studies, University of St. La Salle Bacolod City, Philippines

Corresponding Author:

Marissa S. Quezon
Email: m.quezon@usls.edu.ph

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Abstract. This study examined the service quality of third-party logistics (3PL) providers in Negros Occidental, Philippines, as a predictor of customer loyalty, employing an exploratory descriptive-correlational research design. The participants were 39 logistics managers from 15 companies who, owing to their direct involvement in managing third-party logistics (3PL) operations, were well positioned to assess the service quality of their 3PL providers. Because warehouses within the same company may share contracts, procurement policies, 3PL providers, and management, the responses were treated as clustered rather than independent, and the findings are reported as exploratory. The study used the SERVQUAL framework to assess the perceived service quality of these providers across five dimensions, namely tangibility, reliability, responsiveness, assurance, and empathy, while customer loyalty was measured using Oliver's (1997) four-phase loyalty model encompassing cognitive, affective, conative, and action loyalty. Spearman's rank-order correlation and simple linear regression were used as exploratory inferential tools, and the resulting p-values were interpreted as indicative rather than confirmatory. Results revealed that all five perceived service quality dimensions were rated fair, with empathy obtaining the highest mean *(M=2.05)* and responsiveness the lowest *(M=1.56)*. Across all four loyalty phases, conative loyalty registered the highest *disagreement* (*M = 1.00*), indicating a complete absence of re-patronage intentions. In this exploratory analysis, perceived service quality was not significantly correlated with customer loyalty and did not significantly predict customer loyalty, $F(1,37)=0.25$, $p=.622$, accounting for only 0.7% of the variance in customer loyalty. These exploratory findings detected no evidence of a direct service quality-to-loyalty association in this setting; given the small, clustered sample, they are inconclusive and need confirmation, and customer loyalty among 3PL-utilizing warehouses in Negros Occidental may be shaped by factors beyond service quality perceptions alone. The study suggests that 3PL providers in the province of Negros Occidental may benefit from improving delivery reliability, complaint resolution systems, personnel competence, and empathetic service practices to build sustainable customer relationships.

Keywords: *Customer loyalty; Negros Occidental; Service quality; SERVQUAL; Third-party logistics.*

Third-party logistics (3PL) refers to the outsourcing of logistics and supply chain management functions to external providers who specialize in these services across the supply chain, including transportation, warehousing, inventory management, order fulfillment, and distribution, enabling businesses to focus on their core operations while leveraging the expertise and infrastructure of the 3PL provider (Ho et al., 2012; Lin et al., 2023). Logistics services have long been regarded as one of the fastest-growing businesses worldwide.

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However, the COVID-19 pandemic brought significant changes to individuals, particularly in consumer behavior (Park et al., 2022). In the Philippines, logistics served as a major driver of economic expansion, surpassing other economic domains (Billones et al., 2021). As governments across different countries implemented safety protocols to curb the spread of the virus, people grew increasingly apprehensive about traveling and going out in public. This shift paved the way for the emergence of third-party logistics (3PL). Logistics has become one of the fastest-expanding sectors worldwide and a major driver of the Philippine economy (Billones et al., 2021). However, this growth has outpaced understanding of what keeps customers loyal to a given third-party logistics (3PL) provider. The pandemic pushed many customers toward 3PL services out of necessity and reshaped consumer behavior in ways not yet fully examined (Park et al., 2022; German et al., 2022; Robas et al., 2022), so earlier assumptions about customer expectations can no longer be taken for granted. Practitioners have also been found to be largely unaware of upcoming industry shifts (Sengupta et al., 2025).

SERVQUAL has been extensively validated in other service industries, particularly banking (Ghimire et al., 2025), and logistics-specific studies have since examined service quality, satisfaction, and loyalty in other markets, as discussed below. Evidence from the Philippine setting remains thin, particularly from business customers such as logistics managers who purchase and evaluate 3PL services on behalf of their firms. It is therefore unclear whether tangibility, reliability, responsiveness, assurance, and empathy carry the same weight for this population as they do in the markets and customer groups already studied. Without local evidence, Philippine 3PL providers risk misallocating resources, investing in improvements their business customers do not value while neglecting those that would strengthen retention. Scholars note no agreement on the dimensions of logistics service quality or how they affect satisfaction and loyalty, even as Murfield et al. (2017) describe predictive studies as limited. The parent SERVQUAL model has repeatedly failed to replicate its five-factor structure, and Cronin and Taylor (1994) argued that perceived performance alone is a better measure, producing the competing SERVPERF model.

Culture adds further variation. Expectations differed significantly across cultural groups in a hotel study, and measuring expectations did not improve SERVQUAL's validity outside a Western setting (Ayyıldız, 2024). In cross-border e-commerce, price-sensitive Chinese consumers treated low prices as a baseline rather than a differentiator, and Chotisarn and Phuthong (2025) found that only price fairness significantly predicted satisfaction among Thai consumers. Both findings support Lang's (2020) view that demographic and contextual attributes shape satisfaction.

Methodological limitations further qualify these findings. Critics of SERVQUAL point to its use of gap scores, an ambiguous expectations construct, questionable validity, and unstable dimensionality, and note that the foundational debate drew largely on North American and European settings (Buttle, 1996; Cronin & Taylor, 1994). Some logistics findings also rest on case-study designs, which limit generalizability (Le Minh et al., 2024). Nearly all reviewed studies are cross-sectional, so the relationships they report are statistical associations rather than established causes (Zhang & Managi, 2020). Reverse causality is plausible, since already-loyal customers may rate service more favorably, and omitted variables such as price, brand reputation, and relationship length, which are rarely controlled, can bias estimates of this kind (Antonakis et al., 2010). Consistent with this, an instrumental-variable study found that ordinary survey-based estimates understate the causal effect of satisfaction on loyalty (Huang & Sudhir, 2021). Common method variance is a further concern, because quality, satisfaction, and loyalty are usually measured with one instrument at one time, which can inflate observed relationships through shared measurement artifacts (Podsakoff et al., 2003).

These concerns do not invalidate prior findings, but they mean the SERVQUAL-based satisfaction–loyalty relationship should be read as robust correlational evidence rather than settled causal fact. Because the relationship remains unsettled and has received little attention among business customers of 3PL providers in the Philippines, further empirical investigation in this setting is warranted, with appropriate caution about directionality. The study is anchored in three complementary theories: Expectancy-Disconfirmation Theory (EDT), which explains why the gap between expected and perceived service matters; the SERVQUAL model, which supplies a validated, multidimensional measure of service quality; and the Theory of Reasoned Action (TRA), which explains how favorable evaluations of a provider develop into loyalty through Oliver's (1999) four-stage framework.

EDT (Oliver, 1977, 1980) holds that customers evaluate a service by comparing pre-consumption expectations with

perceived performance. Performance that exceeds expectations produces positive disconfirmation, while performance that falls short produces negative disconfirmation, and these evaluations shape post-consumption attitudes and behavioral outcomes such as repurchase intention, loyalty, and word-of-mouth (Oliver, 1980, 1997). EDT usually places satisfaction between disconfirmation and these outcomes, but satisfaction is not measured in this study, which examines the direct association between service quality and loyalty. SERVQUAL (Parasuraman et al., 1985, 1988) operationalizes the performance-based dimension of service quality across five dimensions, each a standard against which expectations are confirmed or disconfirmed. Tangibility covers facilities, equipment, staff appearance, and materials. Reliability is dependable service and problem resolution, getting it right the first time. Responsiveness is timely, willing service and tailored solutions. Assurance is staff knowledge and courtesy that build confidence and trust, and empathy is caring, individualized attention. The combined confirmation or disconfirmation across all five dimensions forms the customer's overall evaluation of service quality.

TRA (Fishbein & Ajzen, 1975) posits that beliefs shape attitudes, attitudes shape intentions, and intentions lead to behavior. This parallels the cognition–affect–conation structure (Rosenberg & Hovland, 1960) on which Oliver (1999) built his loyalty stages. Cognitive loyalty is a belief-based preference grounded in perceived performance and shaped by the SERVQUAL evaluation, corresponding to the TRA belief. Affective loyalty is a favorable attitude toward the provider built through repeated positive experiences, corresponding to the TRA attitude (Oliver, 1997, 1999). Conative loyalty is a commitment or intention to repurchase, corresponding to the TRA intention, and action loyalty is the conversion of that intention into actual repurchase, corresponding to TRA behavior. Taken together, service quality, measured through the five SERVQUAL dimensions, is used to find out whether expectations are confirmed or disconfirmed. The study posits the following research questions: (1) What is the level of service quality of 3PL providers, as perceived by logistics managers, across the five SERVQUAL dimensions (tangibility, reliability, responsiveness, assurance, empathy)? (2) What is the level of customer loyalty toward 3PL providers (cognitive, affective, conative, and action)? (3) Is service quality related to customer loyalty in this exploratory sample?

Methodology

Research Design

This study used an exploratory and descriptive-correlational research design, with simple linear regression as a preliminary analysis. This design involved describing the profile and level of perceived service quality and customer loyalty and exploring the relationship between the two variables. It allowed the researcher to understand the phenomenon under investigation and identify potential associations between variables (Leedy & Ormrod, 2019). Moreover, this study used the survey method to identify the participants' profiles, their perceived service quality, and their loyalty to the third-party logistics provider. The descriptive design allowed the researcher to describe the level of customer service quality, which comprised five dimensions, namely tangibility, reliability, responsiveness, assurance, and empathy, as well as the extent of loyalty of the customers of the 3PL. The data were collected in their natural settings without intervention or treatment. The correlational aspect of this design enabled the researcher to examine the relationship between the level of logistics service quality and the extent of customer loyalty.

Participants and Sampling Technique

The study used total enumeration because the population was small and comprised 39 logistics managers across 15 third-party logistics (3PL) companies in Negros Occidental. All 39 participated in the survey and submitted the filled-out questionnaires. Logistics managers were chosen because they work directly with 3PL providers and are accountable for rating the providers' service quality. They were therefore well placed to provide informed answers about service quality and customer loyalty, and they were available during data collection. Including all of them provided a more accurate picture of 3PL service quality in Negros Occidental because the warehouses they manage differ in size, customer type, and operations, even within the same company. Because the 39 managers were drawn from 15 companies, and warehouses within the same company may share contracts, procurement policies, 3PL providers, and management, the responses were treated as clustered rather than independent.

Research Instrument

The research instrument used was the Service Quality and Customer Loyalty Survey, a researcher-adapted questionnaire developed from the SERVQUAL model of Parasuraman et al. (1985) and the Customer Loyalty Scale of Oliver (1997). This instrument was designed to capture the level of logistics service quality provided by third-

party logistics (3PL) providers as perceived by logistics managers, as well as the extent of their loyalty to their respective service providers. The questionnaire was divided into two major parts: Part I, which gathered participants' and their warehouses' profiles, and Part II, which adapted the performance-based SERVQUAL to measure service quality and customer loyalty through standardized scales. This structure allowed the researcher to establish the participants' context before proceeding to assess the study's core variables.

Part I of the questionnaire covered the participants' profiles and those of their respective warehouses. This part gathered information on the participants' current position, age, sex, and length of service. It also included a checklist on the type of warehouse being managed, namely public warehouse, private bonded manufacturing warehouse, consolidated warehouse, distribution center, cold storage warehouse, and reverse logistics warehouse, as well as a checklist on the type of customer being served, namely manufacturers, retailers, importers, exporters, wholesalers, and others. This part allowed the researcher to establish the general characteristics of the warehouses and their managers before assessing service quality and customer loyalty. Part II of the questionnaire measured service quality and customer loyalty and comprised two major sections: the Logistic Service Quality Survey, adapted from Parasuraman et al. (1985), and the Customer Loyalty Survey, adapted from Oliver (1997). This part directly captured the study's two major variables by eliciting participants' evaluations of the service quality delivered by their 3PL provider, as well as their corresponding loyalty toward the provider. The Logistic Service Quality Survey was patterned after the SERVQUAL model of Parasuraman et al. (1985), which measured service quality along five dimensions, namely tangibles, reliability, responsiveness, assurance, and empathy. Each dimension was composed of five items rated on the perception of the participants relative to their experience with their logistics service provider, using a four-point Likert scale ranging from 4 (Excellent), which indicated that the service provider demonstrated full efficiency, to 1 (Poor), which indicated that the service provider demonstrated no efficiency at all. This rating followed the SERVQUAL conceptualization of Parasuraman et al. (1985), applied here to capture customers' perceived service quality. Table 1 presents the scoring guide used to interpret the level of logistics service quality based on participants' ratings. The following interpretative scales were used to assess the level of logistics service quality and the extent of customer loyalty.

Given that the questionnaire was adapted from the SERVQUAL model of Parasuraman et al. (1985) and the Customer Loyalty Scale of Oliver (1997), both of which were extensively validated instruments in the service quality and marketing literature, the researcher ensured that the wording of each adapted item remained conceptually faithful to the original constructs while being contextually appropriate for the third-party logistics setting of Negros Occidental. Although Oliver's (1999) four-phase loyalty model originated in consumer contexts, its premise that loyalty progresses from performance beliefs through affect and intention to action applies to any buyer and has been used in business-to-business settings (Harris & Goode, 2004; Rauyruen & Miller, 2007). Because organizations purchase through individuals (Webster & Wind, 1972), logistics managers, who evaluate carriers and influence renewal decisions, serve as appropriate key informants (Kumar et al., 1993). The unit of analysis is therefore the manager, and loyalty is operationalized as the manager's perceived attitudinal and behavioral loyalty, not the firm's contractual retention. Contracts, switching costs, procurement authority, and corporate policy may constrain provider choice independently of managers' attitudes (Dick & Basu, 1994; Jones et al., 2000), and the items do not capture relational constructs such as trust (Morgan & Hunt, 1994). Future studies should measure contract status, switching costs, and decision authority.

A panel of ten content experts with academic and professional backgrounds in logistics, supply chain management, and business research evaluated each item for clarity, relevance, and alignment with the study's five service quality dimensions and four loyalty phases. All the original items in the questionnaire were retained. The item-level Content Validity Ratio (CVR) for service quality was: tangibles-1.0; reliability-1.0; responsiveness—0.96; assurance-0.92; and empathy-1.0, and for customer loyalty, they were as follows: cognitive-1.0; affective-1.0; conative-0.93; and action-0.93. For 10 experts, the critical threshold value (Content Validity Criterion or CVC) established by Yurdugül (2005) is 0.62. Any item with a CVR below 0.62 must be eliminated or revised before creating the final instrument structure (Yurdugül, 2005). The mean content validity ratio (CVR) using the Lawshe Method was 0.97.

To ensure reliability, a pilot test was conducted among 30 participants who were not part of the main study but shared similar characteristics with the target population. The questionnaire's reliability was assessed using Cronbach's alpha, which yielded a score of 0.89. The overall Cronbach's alpha for service quality was 0.82, with

the individual dimensions as follows: tangibles-0.94; reliability-0.84; responsiveness-0.74; assurance-0.83; and empathy-0.76. For customer loyalty, Cronbach's alpha was 0.95, with the following components: cognitive-0.96; affective-0.96; conative-0.96; and action-0.92. As all coefficients exceeded the minimum threshold of 0.70 recommended in social science research (Nunnally, 1978), the instrument was deemed reliable and appropriate for use in the actual data gathering involving the 39 Logistics Managers.

Data Gathering Procedure

The study was conducted in accordance with ethical standards for research involving human participants. Prior to data collection, the researcher obtained review, validation, and approval from the Research Ethics Review Committee (RERC) to ensure that the study's objectives, procedures, instruments, and data privacy measures met accepted ethical requirements. The University of St. La Salle Research Ethics Review Committee approved the study (ethics clearance control no. 2026-001-GS, issued June 28, 2026) before data collection began in July 2026. The data are kept until the results are presented and published. The hard copies of the questionnaires and signed consent forms will be disposed of, and all digital files will be permanently deleted once data verification is concluded.

Following ethical clearance, the researcher secured Agency Consent from the management of each of the 15 companies operating the 39 warehouses in Negros Occidental. A formal letter of request, including a brief overview of the study's purpose, scope, and expected duration, was submitted to the respective company officials. Data collection at each site proceeded only upon explicit approval from the company. After Agency Consent was granted, the researcher personally distributed Informed Consent Forms to the 39 identified Logistics Managers across the warehouse sites. The purpose, nature, and significance of the study, as well as the extent of participants' involvement, were explained to ensure full understanding. Participation was strictly voluntary, and participants were informed of their right to withdraw at any time without penalty. The survey questionnaire was administered only after participants signed the Informed Consent Form. Data were collected from July 15 to August 25, 2026. The researcher scheduled appointments with the logistics managers, and the questionnaires were personally administered at the managers' offices on the scheduled date. The researcher verified that all items were completed and answered properly before leaving the premises. After retrieving all questionnaires, the responses were organized, encoded, and tabulated

Data Analysis Procedure

Frequency and percentage distribution were used to describe the demographic profile of the Logistics Managers and the business profile of the warehouses. The mean and standard deviation were used to determine the level of perceived service quality of the third-party logistics in terms of its five dimensions, namely tangibles, reliability, responsiveness, assurance, and empathy, as perceived by the participants. The mean provided a measure of central tendency that summarized the average rating given by the participants for each dimension, while the standard deviation indicated the degree of variability or dispersion of the responses around the mean, reflecting the extent of agreement or disagreement among the Logistics Managers (Field, 2013). To ensure a standardized and objective interpretation of the computed means, the following range of means, adapted for the purposes of this study, was used:

Table 1. *Interpretative Scale for the Level of Logistics Service Quality*

Mean Ratings	Verbal Interpretation	Description
1.00–1.49	Poor	The level of logistics service quality was below average, with noticeable shortcomings that failed to meet customer needs.
1.50–2.49	Fair	The level of logistics service quality was adequate but partially met customer needs, with considerable room for improvement.
2.50–3.49	Good	The level of logistics service quality was satisfactory and consistently met customer needs with some room for improvement.
3.50–4.00	Excellent	The level of logistics service quality was outstanding and consistently exceeded customer needs, providing exceptional service.

To determine the level of customer loyalty of the Logistics Managers toward their respective 3PL providers, the mean and standard deviation were used, spanning the four loyalty dimensions adapted from Oliver (1999). As with the service quality dimensions, the mean indicated the average extent of loyalty exhibited by the participants, while the standard deviation reflected the consistency of this loyalty across the sample (Field, 2013). The range of means was consistent with the operationalization of consumer loyalty by Davis-Sramek et al. (2009), who adapted

Oliver's (1999) four-phase loyalty model, wherein customer loyalty was treated as a continuum ranging from a strong likelihood of defection to a strong likelihood of continued patronage and brand advocacy.

Table 2. *Interpretative Scale for the Extent of Customer Loyalty*

Mean Ratings	Verbal Interpretation	Description
1.00–1.49	Strongly disagree	Participants strongly disagreed with the statements, indicating almost no inclination to remain loyal, with a noticeable lack of commitment and a high risk of disengagement.
1.50–2.49	Disagree	Participants disagreed with the statements, indicating a low to moderate level of loyalty, with considerable room for improvement in commitment and engagement.
2.50–3.49	Agree	Participants agreed with the statements, indicating a satisfactory degree of loyalty and a consistent inclination to continue patronage and repeat engagement.
3.50–4.00	Strongly agree	Participants strongly agreed with the statements, indicating high loyalty and strong advocacy, with consistent commitment and a preference for the service provider over competitors.

The researcher tested the normality of the data distribution using the Shapiro-Wilk test, which was considered appropriate for small to moderate sample sizes such as the 39 Logistics Managers (Shapiro & Wilk, 1965; Razali & Wah, 2011). The data were found to violate the assumption of normality; hence, the Spearman rank-order correlation coefficient was used.

Simple linear regression was used to model the relationship between a single independent variable, in this case, service quality perception, and a dependent variable, customer loyalty, allowing the researcher to determine the extent to which changes in perceived service quality could predict or explain changes in customer loyalty (Hair et al., 2019). The regression model yielded a coefficient of determination (R^2), which indicated the proportion of variance in customer loyalty that could be accounted for by perceived service quality, as well as a significance value (p-value), which determined whether the predictive relationship between the variables was statistically significant (Montgomery et al., 2012). This statistical tool was used to explore, rather than confirm, whether higher perceived logistics service quality was associated with higher customer loyalty among the participating managers.

Both the Spearman correlation and the regression assume independent observations. Because the 39 responses are nested within 15 companies and may share 3PL providers, we did not adjust for clustering, and treating all 39 responses as independent may underestimate uncertainty. All inferential results are therefore treated as exploratory: p-values and confidence intervals are reported as indicative, not as confirmatory tests, and no generalization beyond the participating companies is intended. The number of unique 3PL providers and the number of observations per company and per provider are reported under Clustering of Responses in the Results and Discussion section.

Ethical Considerations

Before data collection, the study was submitted to and approved by the Research Ethics Review Committee (RERC), ensuring independent review of its ethical soundness. The researcher also disclosed that the study was self-funded and had no affiliation with any funding agency, eliminating potential conflicts of interest. The study adhered to the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research (1979) with three core principles—respect for persons, beneficence, and justice—in guiding the treatment of the 39 Logistics Manager participants. These were upheld through voluntary participation, informed consent, anonymity and confidentiality, risk-benefit balance, proper data disposal, and transparent reporting of results. Participants were informed that involvement was voluntary and that withdrawal at any time would not affect their standing with their company. Agency consent was first secured from each company before individual Informed Consent Forms were administered to participants as proof of their voluntary agreement. Anonymity and confidentiality were strictly maintained: no names were disclosed, and personal information was not shared with third parties. All data were handled and stored in compliance with the Data Privacy Act of 2012 (RA 10173).

Results and Discussion

Demographic Profile of the Participants

Younger professionals who entered the workforce during a period of rapid digital transformation are familiar with technology-mediated logistics platforms. As a result, their evaluations of the five SERVQUAL dimensions, particularly responsiveness and reliability, may differ from those of older counterparts who developed their professional reference frames under less technologically advanced service conditions. The relatively young mean

age of the participants therefore suggests that the service quality assessments gathered in this study reflect a perspective grounded in current and evolving industry standards, lending the findings a degree of contemporary relevance that is particularly meaningful given the rapidly changing logistics landscape in the Philippines.

Table 3. *Demographic Profile of the Participants*

Variable	n	%
Age		
Younger (36 years old and below)	23	59.0
Older (Over 36 years old)	16	41.0
Total	***39***	***100.0***
Sex		
Male	30	76.9
Female	9	23.1
Total	***39***	***100.0***
Current Position		
Logistic Manager/ Supervisor	39	100.0
Total	***39***	***100.0***
Length of Service		
Shorter (3 years and below)	20	51.3
Longer (4 years and above)	19	48.7
Total	***39***	***100.0***

The participants are predominantly male, comprising 76.9% (n = 30) of the total sample, while female participants accounted for 23.1% (n = 9). This pronounced gender imbalance reflects the enduring male dominance characterizing warehouse management and logistics supervisory roles in the Philippine setting. Billones et al. (2021), in a study of logistics personnel in Negros Occidental, noted that male workers consistently outnumbered their female counterparts in operational and supervisory logistics positions, attributing this disparity to entrenched occupational norms, the physical demands of warehousing environments, and scheduling conditions that remain less accommodating to female workers. Baylon (2024) further observed that gender remains a structurally significant variable in local supply chain workforce composition, with women more frequently concentrated in administrative and clerical logistics functions rather than in managerial roles.

Female professionals have been observed to place greater weight on empathy and interpersonal dimensions of service quality, whereas male participants tended to emphasize operational dimensions such as reliability and tangibility (Lang, 2020). Because empathy is one of the five SERVQUAL dimensions assessed in this study, the underrepresentation of female participants may have introduced evaluative skew, particularly in how relational and interpersonal service attributes are rated. Furthermore, the sample's gender composition reflects a structural reality of the 3PL customer industry in Negros Occidental; as such, the findings are most directly applicable to the evaluative perspectives of male logistics professionals operating within that context.

All participants (100.0%, n = 39) hold the designation of Logistics Manager. This uniformity in professional position directly reflects the study's purposive sampling criterion, which identifies Logistics Managers as the most epistemically appropriate participants given their frontline engagement with 3PL service providers. The exclusive participation of managerial and supervisory personnel ensures that the data collected reflect informed, experience-based assessments of logistics service quality rather than incidental or peripheral impressions. This uniformity is a methodologically significant characteristic of the study. Logistics Managers occupied a structurally unique position within the logistics service relationship, functioning simultaneously as organizational representatives of customer firms and as primary evaluators of 3PL service delivery. Their daily oversight of warehouse operations put them in direct, sustained contact with the service behaviors and operational capabilities of their 3PL providers. This proximity to service delivery meant that their evaluations of dimensions such as tangibility, reliability, and responsiveness were grounded in repeated, concrete operational experiences rather than isolated or episodic encounters. Murfield et al. (2017) emphasized that logistics service quality evaluations from organizational buyers and operational decision-makers carry greater analytical validity because these individuals have the technical knowledge and operational exposure to distinguish meaningfully across service quality dimensions. In the Philippine context, Robas et al. (2022) similarly noted that Logistics Managers served as critical organizational interfaces between customer firms and 3PL providers, positioning them to assess service delivery against operational standards. This homogeneity in participant position is a methodological strength, as

it controls for role-based variance in service quality perception and concentrates evaluative data among those most qualified and most directly involved in the logistics service relationship. This also meant that the loyalty outcomes measured in the study reflected the judgments of professionals whose organizational roles make such judgments consequential, as Logistics Managers bore direct accountability for the performance of the 3PL partnerships under their supervision.

The participants have a mean service length of 3.4 years, with a slight majority (51.3%, n = 20) in the shorter service group of three years and below, while 48.7% (n = 19) have served four years or more. The near-even distribution between these two groups suggests a workforce that is, in aggregate, relatively early in its organizational tenure, a finding that is broadly consistent with the relatively young age profile of the participants. German et al. (2019) observed that logistics supervisory personnel in the Visayas region tended to exhibit moderate to short service tenures, a pattern they linked to high occupational mobility within the logistics sector and the relatively recent formalization of 3PL operations in provincial areas.

The near-parity between tenure groups introduced a natural diversity of experiential perspectives. Shorter-tenured managers assess service quality through relatively fresh, more emotionally proximate encounters, while longer-tenured managers bring accumulated organizational memory, enabling more calibrated evaluations. The mean tenure of 3.4 years suggests that many warehousing relationships are still in formative stages, which is relevant to interpreting loyalty outcomes, as loyalty deepens with sustained positive service experiences over time.

Collectively, the demographic and professional profile of the participants describes a population characteristic of the emerging logistics workforce in provincial Philippine settings. These profile characteristics are not merely descriptive; they carry more interpretive weight for the study's substantive findings on service quality and loyalty. The youthful age composition suggests a participant pool whose service quality perceptions may have been calibrated against contemporary service delivery standards, potentially elevating the evaluative threshold applied to 3PL performance. The predominance of male participants reflected occupational realities specific to warehousing environments in Negros Occidental and suggests the findings most directly represent how male logistics professionals in that context experience and judge 3PL service quality. The exclusivity of managerial and supervisory roles reinforced the analytical credibility and operational grounding of the service quality assessments obtained, while the relatively short mean tenure of the participants implied that the evaluations gathered largely represented perspectives formed within a recent and still-developing window of organizational experience.

Profile of the Company

Table 4. *Profile of the Company*

Variable	n	%
Type of warehouse		
Distribution Warehouse	13	33.3
Public Warehouse	10	25.6
Cold storage Warehouse	7	17.9
Reverse Logistics	9	23.2
Total	***39***	***100.0***
Type of Customer		
Manufacturers	9	23.1
Retailers	22	56.4
Wholesalers	8	20.5
Total	***39***	***100.0***
Length of Service Operation (M=4.1 years)		
Shorter (4 years and below)	21	53.8
Longer (over 4 years)	18	46.2
Total	***39***	***100.0***

The participating companies displayed a diverse operational profile. By warehouse type, Distribution Warehouses were most common (33.3%, *n*=13), followed by Public Warehouses (25.6%, *n*=10), Reverse Logistics warehouses (23.1%, *n*=9), and Cold Storage Warehouses (17.9%, *n*=7). The predominance of Distribution Warehouses reflects

the growing emphasis on last-mile delivery and efficient product distribution in the Philippine logistics sector, especially following accelerated e-commerce adoption during and after the pandemic (Robas et al., 2022; Abbasi et al., 2024). Since these warehouses focus on rapid outward movement of goods to end customers, reliability and responsiveness are central to their service quality expectations.

The notable share of Reverse Logistics warehouses (23.1%) reflects the growing importance of returns management amid rising online retail volumes (Ta et al., 2025; German et al., 2022), suggesting that the 3PL landscape in Negros Occidental has matured beyond forward-flow warehousing alone. This adds complexity to service evaluations, as reverse logistics demands process accuracy, communication, and empathetic handling of customer concerns. Public Warehouses (25.6%) introduce considerations around shared resource allocation and competing customer priorities, while Cold Storage Warehouses (17.9%), though the smallest segment, represent the most technically specialized operations, requiring strict reliability and tangibility standards due to temperature-control demands. Together, this diversity ensured the service quality data captured a range of operational contexts rather than a single warehousing model.

In terms of customer type, Retailers made up the majority (56.4%, *n*=22), followed by Manufacturers (23.1%, *n*=9) and Wholesalers (20.5%, *n*=8). This aligns with the retail sector's role as a key driver of logistics demand in the Philippines (Balagosa, 2022; Billones et al., 2021). Retailers' need for frequent restocking and strict delivery windows places high demands on reliability, responsiveness, and order accuracy, with Baylon (2024) noting that retail-oriented 3PL relationships in the Visayas region are especially sensitive to service failures, given the risk of lost sales and reputational damage. Manufacturers, meanwhile, prioritize consistency and inventory precision tied to production schedules, while Wholesalers occupy a middle ground with demands combining retail urgency and manufacturing precision. This mix gives an exploratory view across varied customer segments, although the small, clustered sample does not support generalization.

Regarding operational tenure, companies averaged 4.1 years in service, split fairly evenly between shorter-tenure (≤4 years: 53.8%, n=21) and longer-tenure (>4 years: 46.2%, n=18) groups. This near-even split, with the mean sitting at the category boundary, suggests a 3PL industry still in an early developmental stage—consistent with German et al.'s (2019) observation that provincial logistics markets formalized significantly only around the pandemic period as regional e-commerce and retail expansion spurred demand for professional 3PL services. Newer companies may still be building the institutional processes and infrastructure needed for consistent service quality across all SERVQUAL dimensions, while more established firms have had greater opportunity to refine processes and build customer relational capital. This mix implies that many 3PL relationships examined remain in a trust-building phase, where consistent service delivery is critical to fostering customer loyalty.

Overall, the organizational profile reveals a 3PL industry in Negros Occidental that is operationally diverse, retail-driven, and relatively young. The range of warehouse types indicates varied service demands across the sample, the dominance of retail customers underscores the high commercial stakes of service quality, and the short average operational period highlights an industry still consolidating. These characteristics provide essential context for interpreting the study's findings on logistics service quality and customer loyalty among participating Logistics Managers. Warehouses within the same company may share contracts, procurement policies, 3PL providers, and management, so the 39 responses cannot be treated as fully independent observations. Treating all 39 responses as independent therefore likely understates uncertainty: the effective sample size is smaller than 39, standard errors are probably too small, and p-values and confidence intervals are probably too optimistic.

Level of the Perceived Service Quality of the Third-Party Logistics

In terms of Tangibility

Three of the five indicators—user-friendly tracking tools, well-maintained vehicles and equipment, and clean, organized facilities—each received a fair rating (*M*= 2.00). This suggests the participating 3PL companies have achieved basic infrastructure adequacy without demonstrating distinctive quality, consistent with Ananth et al. (2011), Al-Azzam (2015), and El Saghier and Nathan (2013), who similarly identified modern facilities and equipment as necessary but insufficient drivers of superior service perception. The favorable rating on tracking tools reflects the growing role of digital interfaces in logistics, though Yang et al. (2024) and Sann et al. (2024) note

that such tools have become baseline expectations rather than differentiators, especially in e-commerce-driven markets like the Philippines.

Table 5. *Level of the Perceived Service Quality of the Third-Party Logistics in terms of Tangibility*

Tangibility Variable	M	Interpretation
The company provides user-friendly tools (e.g., tracking systems) to monitor deliveries.	2.00	Fair
The logistics company's vehicles and equipment appear modern and well-maintained.	2.00	Fair
The company's facilities (warehouses, offices) are clean and organized.	2.00	Fair
The appearance of delivery personnel is clean and professional.	1.00	Poor
The packaging materials used by the service provider are of high quality and durable.	1.00	Poor
Total	**1.60**	**Fair**

In sharp contrast, personnel appearance and packaging quality both received poor ratings (*M*= 1.00). Personnel appearance, identified by Parasuraman et al. (1985, 1988) as core to tangibility, signals organizational professionalism; its poor rating aligns with Ananth et al. (2011) and German et al. (2022), the latter noting that frontline personnel lapses are a frequent source of complaints in Western Visayas logistics markets. Similarly, packaging quality directly affects product integrity, a concern central to the condition dimension described by Mentzer et al. (1999), Bienstock et al. (2008), and Uvet (2020). Billones et al. (2021) and Robas et al. (2022) attribute packaging inadequacies in Negros Occidental to cost-cutting among smaller provincial 3PL providers—a concern made more significant given the study's inclusion of cold storage and reverse logistics operations, where packaging integrity carries direct commercial consequences.

This contrast between fair infrastructure ratings and poor personnel/packaging ratings reveals an investment imbalance: 3PL providers appear to prioritize capital-intensive technological and structural assets over the human and material touchpoints customers encounter most directly. Balagosa (2022) observed a similar pattern among Visayas-region providers. As Mathong et al. (2020) cautioned, SERVQUAL applications in logistics require sector-specific calibration—and these findings confirm that tangible service quality among Negros Occidental 3PL providers remains an area requiring further investment and development.

In terms of Reliability

Table 6. *Level of the Perceived Service Quality of the Third-Party Logistics in terms of Reliability*

Reliability Variable	M	Interpretation
The service provider ensures consistent performance across all deliveries.	2.00	Fair
The company maintains error-free records of shipments and transactions.	2.00	Fair
The company provides accurate billing and documentation.	2.00	Fair
The delivery service consistently meets the promised delivery dates.	1.00	Poor
Packages are delivered accurately and without damage.	1.00	Poor
Total	**1.60**	**Fair**

Service performance, error-free shipment records, and accurate billing/documentation each received a fair rating (*M*=2.00). This suggests the participating 3PL companies have established a functional administrative baseline, consistent with Ananth et al. (2011), Al Muala (2016), Hallouz and Benhabib (2014), and El Saghier and Nathan (2013), who identify record-keeping and documentation accuracy as foundational reliability indicators. Similarly, the fair rating on consistent delivery performance aligns with Uvet (2020) and Fernandes et al. (2018), who emphasize that sustained consistency across transactions—not just individual encounters—is central to building customer trust and loyalty (Sann et al., 2024).

In contrast, meeting promised delivery timelines and delivering accurate, undamaged packages both received poor ratings (*M*=1.00), with unanimous agreement pointing to systemic rather than isolated failures. Delivery timeliness, which Mentzer et al. (1999, as cited in Yang et al., 2024) identify as a core dimension of logistics service quality, is strongly linked to customer loyalty (Fernandes et al., 2018; Uvet, 2020). The poor rating suggests participating 3PL providers have consistently failed to honor delivery commitments—a pattern Baylon (2024) attributes to inadequate route planning and infrastructure challenges in provincial settings, and which German et al. (2019) identify as a persistent regional issue. Likewise, poor package condition ratings align with the condition dimension described by Mentzer et al. (1999), and Bienstock et al. (2008); Ho et al. (2012) and Uvet (2020) link this to customer trust and reduced complaints. This finding connects directly to the earlier poor rating on packaging materials in the tangibles dimension, suggesting a compounding deficit in which inadequate packaging

contributes to poor delivery outcomes—a pattern Robas et al. (2022) attribute to substandard packaging, rough handling, and a lack of quality control in provincial 3PL operations.

The contrast between fair administrative performance and poor operational performance mirrors the pattern seen in the tangibles dimension, suggesting 3PL providers have invested more in back-office functions than in the front-end operations customers experience most directly. Since Parasuraman et al. (1988) identify reliability as the most heavily weighted dimension in overall service quality evaluations, these operational deficiencies carry outsized implications for service quality perception and customer loyalty—reinforcing, as Stank et al. (2001) note, the centrality of reliability to the broader service quality-loyalty relationship central to this study.

In terms of Responsiveness

Table 7. *Level of the Perceived Service Quality of the Third-Party Logistics in terms of Responsiveness*

Responsiveness Variable	M	Interpretation
When you have a problem, the company shows sincere interest in solving it.	2.00	Fair
The company's employees are never too busy to respond to your requests.	2.00	Fair
The service provider is readily available to assist with urgent delivery needs or inquiries.	1.72	Fair
Delivery updates are provided promptly and accurately throughout the process.	1.08	Poor
The company quickly resolves issues or complaints regarding deliveries.	1.00	Poor
Total	**1.56**	**Fair**

Sincere interest in solving customer problems and employees never being too busy to respond received fair ratings, which is consistent with Parasuraman et al.'s (1985) view that customers judge responsiveness partly on perceived willingness, not just actions. Beikkhakhian et al. (2015) and Siddiqi (2011) noted that this at least avoids the most damaging forms of unresponsive behavior. Readiness to assist with urgent needs, though also rated fair, showed higher variability, unlike the uniformity elsewhere in the study, suggesting inconsistent capacity across the sample, possibly linked to differences in warehouse type, customer industry, or scale (Kumar et al., 2009). In sharp contrast, the poor rating for delivery updates is especially significant because real-time tracking has become a baseline expectation in e-commerce-driven logistics (Yang et al., 2024), and Sann et al. (2024) link communication timeliness directly to customer loyalty. This deficiency likely reflects the technological infrastructure gaps and short operational histories common among provincial 3PL providers (Balagosa, 2022; German et al., 2022b).

The unanimous poor rating on complaint resolution is particularly consequential: every Logistics Manager perceived their provider as failing to resolve issues promptly. Parasuraman et al. (1985, 1988) identify recovery response as a defining test of responsiveness, and Beikkhakhian et al. (2015) note that unresolved complaints strongly drive customer disengagement by signaling indifference. Billones et al. (2021) and Robas et al. (2022) attribute this pattern in Negros Occidental to the absence of structured complaint management systems, limited staffing, and informal organizational structures typical of smaller provincial 3PL providers. Overall, the responsiveness dimension reveals a pattern of selective, incomplete service: providers show basic attitudinal willingness but fail to translate this into the technology-supported communication and complaint-resolution systems needed for genuine responsiveness (Kumar et al., 2009). Since responsiveness is strongly linked to customer loyalty (Parasuraman et al., 1988; Lin et al., 2023), its position as the lowest-rated dimension suggests these communication and resolution failures may be a key driver of the loyalty constraints examined later in the study.

In terms of Assurance

Table 8. *Level of the Perceived Service Quality of the Third-Party Logistics in terms of Assurance*

Assurance Variable	M	Interpretation
The company provides adequate insurance coverage for your shipments.	3.82	Excellent
I feel confident that my packages are handled securely and responsibly.	2.00	Fair
The company inspires trust through clear communication and reliable service.	1.00	Poor
You feel safe in your transactions with the logistics company.	1.08	Poor
The delivery staff demonstrate professionalism and competence during interactions.	1.00	Poor
Total	**1.78**	**Fair**

Adequate insurance coverage received the highest score of any indicator in the entire study. As a formal, contractually grounded protection mechanism independent of day-to-day personnel performance, insurance

represents a structural trust mechanism that Sadek et al. (2010) note is especially valued in business-to-business contexts with high financial stakes. Baylon (2024) similarly observed that Negros Occidental logistics customers increasingly view adequate insurance as a non-negotiable prerequisite, suggesting this is a genuine point of differentiation for participating providers. Confidence in secure package handling, rated fair, suggests that frontline workers demonstrate baseline procedural care without inspiring strong confidence. This is notable given the poor package-condition ratings in the reliability dimension, revealing a disconnect between perceived handling care and actual delivery outcomes. In stark contrast, this dimension contains the most concentrated cluster of poor scores in the study: delivery staff professionalism/competence, trust-inspiring communication, and transaction safety. These echo the tangibles dimension's poor rating on personnel appearance, together pointing to a broader human capital deficiency. Ananth et al. (2011), Hadiyati (2014), and El Saghier and Nathan (2013) identify staff professionalism as a key trust driver, while German et al. (2022a) attribute such deficiencies to limited training investment, high turnover, and absent competency standards.

The poor rating on trust-inspiring communication is similarly consequential. Sadek et al. (2010) noted that trust builds through consistent, transparent communication over time, and Sann et al. (2024) identified trust as a critical mediator between service quality and loyalty. This finding is compounded by the short operational histories of many participating companies, which limits their ability to build the track record needed for communicative credibility. The poor transaction safety rating encompassing physical, financial, and documentary security further reinforces this deficiency, consistent with Kumar et al. (2009) and Al-Azzam (2015), who link transaction safety perceptions to organizational integrity.

Overall, the assurance dimension reveals sharp polarization: a single structural indicator (insurance coverage) achieves excellence, while the interpersonal and behavioral indicators of trust, professionalism, and transaction safety are uniformly poor. This suggests providers have invested in formal contractual protections while neglecting the human and communicative practices customers experience directly. As Mathong et al. (2020) caution, sector-specific SERVQUAL calibration is essential, and these findings indicate that in Negros Occidental's provincial 3PL context, structural insurance provisions have not been matched by corresponding investment in human capital and communication, deficiencies that, per Sann et al. (2024), risk undermining the broader service quality-loyalty chain central to this study.

In terms of Empathy

Table 9. *Level of the Perceived Service Quality of the Third-Party Logistics in terms of Empathy*

Empathy Variable	M	Interpretation
The delivery staff demonstrates genuine care for customer concerns or special requests.	2.46	Fair
Customer service representatives actively listen to and address issues promptly.	2.41	Fair
The company has operating hours convenient for all its customers.	2.08	Fair
The company provides personalized solutions for unique delivery needs (e.g., fragile items).	2.00	Fair
The employees understand your specific shipping needs.	1.31	Poor
Total	**2.05**	**Fair**

Genuine care for customer concerns scored highest, followed by active listening and prompt issue resolution. Their notable variability suggests these relational behaviors depend on individual staff rather than institutionalized practice. This aligns with Parasuraman et al. (1985, 1988) and Al Azzam (2015) and El Saghier and Nathan (2013), who identify attentiveness and sincere responsiveness as central to empathy, and Ananth et al. (2011), who highlight accommodating special requests as a key empathy behavior. Baylon (2024) notes that Negros Occidental customers value relational quality especially when operational dimensions like timeliness fall short, suggesting empathy partly compensates for other deficiencies. Convenient operating hours reflect sharply divergent customer experiences. Kumar et al. (2009) link convenient scheduling to empathy and responsiveness, and the wide variability here likely reflects the diverse customer types (retailers, manufacturers, wholesalers) with differing scheduling needs. Personalized solutions for unique delivery needs suggest basic but unexceptional customization capacity—a missed opportunity given Gupta et al.'s (2023) finding that customization significantly drives customer loyalty.

The indicator of employees' understanding of customers' specific shipping needs is significant, as this understanding forms the foundation for all other empathetic behaviors. Parasuraman et al. (1985, 1988) identify needs understanding as core to empathy, and Ananth et al. (2011) link such knowledge to deliberate

organizational investment rather than incidental encounters. Billones et al. (2021) and German et al. (2022) attribute this gap in Negros Occidental and Western Visayas to high staff turnover, limited customer onboarding practices, and informal organizational cultures lacking systematic knowledge transfer. Overall, empathy presents the most consistently adequate service quality picture in the study, tempered by a structural vulnerability in customer-specific knowledge. While this suggests a genuine, if limited, relational asset among participating providers, the fair aggregate score combined with poor needs-understanding indicates that empathetic behaviors remain superficial rather than institutionalized. Al Azzam (2015) and El Saghier and Nathan (2013) emphasize that genuine empathy requires organizational systems and training beyond individual goodwill—a standard not yet met here. Given Sann et al.'s (2024) finding that empathy strongly predicts customer trust and loyalty, and Mathong et al. (2020) call for sector-specific calibration, these findings suggest the participating providers have only partially realized empathy's potential to strengthen customer loyalty outcomes.

Extent of Customer Loyalty of the Third-Party Logistics

In terms of Cognitive Loyalty

Table 10. *Extent of Customer Loyalty of the Third-Party Logistics in terms of Cognitive Loyalty*

Cognitive Loyalty Variable	M	Interpretation
The services offered by this company are of higher quality compared to competitors.	2.97	Agree
This logistics company provides more reliable service than other logistics providers.	2.00	Disagree
Based on my experience, this logistics company is a better choice than other available options.	2.00	Disagree
Total	**2.32**	**Disagree**

Cognitive loyalty was low. Logistics Managers generally did not view their 3PL providers as competitively superior. The only indicator that managers agreed with was perceived service quality relative to competitors. This suggests a slight acknowledgment of a comparative quality advantage. Murfield et al. (2017) identify quality comparison as a foundational cognitive loyalty indicator, associated with stronger attitudinal and behavioral loyalty outcomes. Still, the rating was only just within the agree range, so the perception is modest and should not be read as a strong endorsement. By contrast, managers uniformly disagreed that their providers offered a reliability advantage or a better overall value proposition. Every respondent gave the same rating on both. Oliver (1999) emphasizes that cognitive loyalty requires active affirmation of a provider's superiority, not merely an absence of preference for alternatives, and this affirmation was lacking. Huma et al. (2020) link weak cognitive loyalty in logistics contexts to perceived deficiencies in operational and relational service quality, noting that such customers are unlikely to progress toward deeper affective and conative loyalty. Overall, the low rating, tempered only by the modest quality-comparison finding, suggests that Logistics Managers remain cognitively unconvinced of their providers' definitive superiority. Since Oliver (1999) frames cognitive loyalty as the foundation for subsequent loyalty phases, this weak base implies structural limits on the depth and durability of loyalty that can develop in later stages.

In terms of Affective Loyalty

Table 11. *Extent of Customer Loyalty of the Third-Party Logistics in terms of Affective Loyalty*

Affective Loyalty Variable	M	Interpretation
I feel comfortable and confident when using this company's services.	3.00	Agree
I feel satisfied with the services provided by this logistics company.	2.00	Disagree
I have a positive impression of this logistics company.	2.00	Disagree
Total	**2.33**	**Disagree**

Participants rated comfort and confidence in using the provider's services at a mean of 3.00 and *SD*=0.00, the highest single loyalty rating in the study outside the cognitive quality-comparison finding. This suggests that despite documented service quality deficiencies, Logistics Managers have developed operational familiarity that translates into basic confidence, even without deeper emotional satisfaction. Rauyruen and Miller (2007) describe this comfort-based confidence as a meaningful, if shallower, form of attitudinal loyalty that providers could build upon through greater consistency and reliability. Oliver (1999) identifies satisfaction and positive impression as

the emotional core of affective loyalty; their absence indicates providers failed to generate the positive emotional response needed to anchor this phase. Sann et al. (2024) link customer satisfaction and impressions in logistics contexts to providers' trust and care communication, consistent with the trust and empathy gaps identified elsewhere in the study's service quality findings. Overall, the affective loyalty profile reflects pragmatic operational comfort without genuine emotional satisfaction or positive regard. Since Oliver (1999) frames affective loyalty as the emotional prerequisite for behavioral intentions, this weak foundation suggests the motivational basis for active loyalty behaviors is largely absent from these service relationships.

In terms of Conative Loyalty

Table 12. *Extent of Customer Loyalty of the Third-Party Logistics in terms of Conative Loyalty*

Conative Loyalty Variable	M	Interpretation
I intend to continue using this logistics company for future transactions.	1.00	Strongly Disagree
I will choose this logistics company the next time I need delivery services.	1.00	Strongly Disagree
I plan to use this company regularly in the future.	1.00	Strongly Disagree
Total	**1.00**	**Strongly Disagree**

All three indicators—intention to continue future transactions, intention to choose the provider again, and plans for regular future use—recorded the same mean. This uniform result reflects not mere ambivalence but a categorical, universally shared rejection of future engagement with the participating 3PL providers. Oliver (1999) frames conative loyalty as a commitment to re-buying, arising from accumulated positive cognitive and affective experience. The strongly disagree ratings here confirm that the weak cognitive and affective foundations documented earlier failed to generate this motivational basis, consistent with Oliver's model. Murfield et al. (2017) similarly note that conative loyalty in industrial logistics is highly sensitive to operational reliability and relationship quality—a pattern the current findings directly confirm. The implications are significant. The unanimous absence of re-patronage intentions suggests loyalty bonds have eroded to the point of complete withdrawal of forward-looking commitment. Huma et al. (2020) find that both operational and relational service quality significantly influence loyalty, with relationship quality as the key driver, suggesting neither dimension was delivered at a level sufficient to sustain customer commitment. The conative loyalty findings thus stand as the clearest evidence of the service quality failures documented throughout the study.

In terms of Action Loyalty

Table 13. *Extent of Customer Loyalty of the Third-Party Logistics in terms of Action Loyalty*

Action Loyalty Variable	M	Interpretation
I consistently choose this logistics company over other alternatives.	2.26	Disagree
I will continue using this logistics company even if other providers offer lower prices.	2.00	Disagree
I would not easily switch to another logistics company.	2.00	Disagree
Total	**2.09**	**Disagree**

This dimension, interpreted as reflecting a low to moderate level of loyalty, indicates a lack of loyal patronage behavior. Though marginally higher than the conative mean, this difference carries little analytical weight, as both dimensions remain negative overall. The highest-rated indicator was consistent choice of the provider over alternatives. Unlike the perfect uniformity in conative loyalty, this variability suggests some participants were more consistent than others, which may be shaped by contractual obligations, switching costs, or limited provincial alternatives rather than genuine loyalty. Dick and Basu (1994) caution that observable patronage does not always reflect true loyalty, as customers may continue with a provider for situational or structural reasons rather than positive loyalty attitudes.

The two indicators, continuing patronage despite lower-priced alternatives and reluctance to switch providers, reflect uniform disagreement. This indicates that Logistics Managers are ready to switch providers when prices are lower, or options are more competitive. Oliver (1999) identifies resistance to price and competitor inducements as the defining marker of mature action loyalty; its absence confirms weak behavioral commitment. Rauyruen and Miller (2007) similarly note that willingness to switch over price differences is among the most reliable indicators of weak loyalty, since continued patronage becomes contingent rather than genuinely committed. Taken together, these results reveal a behavioral loyalty profile lacking both re-patronage intention and demonstrated commitment, as against Yoganandan et al.'s (2024) confirmation that all five SERVQUAL dimensions positively

correlate with loyalty. The findings suggest that pervasive service quality deficiencies have eroded loyalty to the point where active disengagement, not continued patronage, is the predominant orientation. This represents a commercially consequential vulnerability for 3PL providers in Negros Occidental, extending beyond relational concerns into real competitive and economic risk.

Relationship Between Service Quality and Customer Loyalty

Table 14. *Relationship Between Service Quality and Customer Loyalty*

Variable	r_s	*df*	*p*
Perceived Service Quality x Customer Loyalty	(-0.086)	37.000	.604

As an exploratory analysis, the study examined whether service quality relates to customer loyalty among the participating 3PL customers in Negros Occidental. Because both variables were non-normally distributed (per the Shapiro-Wilk test), the study used Spearman's correlation instead of Pearson's. The analysis found no statistically significant relationship between the two (r_s=-.086, p=.604), with a weak negative direction that runs contrary to the theoretical expectation that better service quality drives higher loyalty. This unexpected result may be explained by range restriction, since both service quality and loyalty scores were uniformly low across respondents, leaving little variance to detect a true correlation, or by the possibility that in industrial logistics settings, loyalty depends more on costs, contracts, and limited provider options than on perceived service quality. Because the responses are clustered within companies and possibly shared providers, the p-value is likely too optimistic, and the result is indicative only. Overall, this small, clustered sample showed no evidence of the pathway predicted by SERVQUAL, in which better service quality leads to more loyalty. This exploratory observation cannot show that the pathway fails in this provincial logistics context, and it warrants confirmation with more companies and providers, ideally using cluster-aware methods.

Service Quality as a Predictor of Customer Loyalty

Table 15. *Simple Linear Regression Predicting Customer Loyalty from Service Quality Perception*

Predictor	B	SE	β	t	p	95% CI for B
Intercept	2.074	0.277	—	7.47	< .001	[1.513, 2.635]
Service quality perception	−0.080	0.161	−.082	−0.49	.622	[−0.407, 0.247]

Note. N = 39; R = .082; R^2 = .007; adjusted R^2 = −.020. B = unstandardized regression coefficient; SE = standard error; β = standardized regression coefficient; CI = confidence interval.

A simple linear regression analysis was conducted to examine whether service quality perception predicted customer loyalty among 39 respondents. As presented in Table 15, the regression model was not statistically significant, F(1, 37) = 0.25, p = .622, R^2 = .007, adjusted R^2 = −.020. Service quality perception was not a statistically significant predictor of customer loyalty, B = −0.080, SE = 0.161, β = −.082, t(37) = −0.498, p = .622, 95% CI [−0.407, 0.247]. The model explained approximately 0.7% of the variance in customer loyalty. Thus, the findings indicate no statistically detectable linear association between service quality perception and customer loyalty in this sample. A sensitivity analysis indicated that, with N = 39 and α = .05, the regression had 80% power to detect only effects of $f^2 \geq .21$ ($R^2 \geq .175$, $r \approx .42$), corresponding to a medium-to-large effect. Power to detect a medium effect (f^2 = .15) was .65, and power to detect a small effect (f^2 = .02) was only .14. The nonsignificant result (F(1, 37) = 0.25, p = .622, R^2 = .007) is therefore inconclusive rather than evidence of no relationship: the study could not reliably have detected anything smaller than a medium-to-large association. Future studies should recruit approximately 55 participants to detect a medium effect and about 395 to detect a small effect with 80% power.

The regression assumptions were evaluated using statistical tests and diagnostic plots. According to the Shapiro–Wilk test, the residuals were not normally distributed (W = .709, p < .001). The Breusch–Pagan test was not significant, with $\chi^2(1)$ = 2.41 and p = .120, so there was insufficient evidence of heteroscedasticity. Cook's distance varied from .003 to .178, and no value was greater than 1. However, since the Durbin–Watson statistic was 0.455 and p < .001, there were concerns regarding residual autocorrelation. Therefore, the independence assumption must account for the order of the observations and the clustered sampling design. Because the 39 managers are nested within 15 companies and may share 3PL providers, independence is likely violated, making the reported standard errors, p-values, and confidence intervals too optimistic. The customer loyalty composite should also be checked for restricted variance or floor effects.

The Spearman correlation was negative and not significant ($\rho = -.086$, $p = .604$), which is consistent with the regression coefficient. It is necessary to check the original output to ensure the same variables, coding, and cases were used. Pearson regression examines linear association, while Spearman correlation examines monotonic association. Overall, the analysis showed no association between perceived service quality and customer loyalty in this sample. Because of the small sample size, the nonnormal residuals, and the possible issues regarding independence, including clustering of responses within companies and providers, the findings are exploratory and should be treated with caution. It must be emphasized that the results do not prove that no relationship exists or that the theoretical pathway did not apply.

Conclusion

Among the 39 managers from 15 participating companies, perceptions of 3PL service quality were fair to poor across the five SERVQUAL dimensions, repurchase intentions were low, and no significant relationship was detected between service quality and loyalty in this exploratory analysis. The results indicate service that meets basic expectations in some areas and falls short in others. These findings suggest that SERVQUAL remains a useful starting point for examining logistics service quality in a provincial setting, but they apply only to the participating providers and cannot be generalized to the wider 3PL industry in Negros Occidental.

For the participating providers, the results suggest opportunities for improvement. Structured complaint management with clear escalation channels and response timelines may help address low re-patronage intentions. On reliability, better route planning, vehicle capacity, and coordination could improve delivery schedules and reduce damaged goods, alongside more accurate billing and documentation. Formal training and performance standards may address the poor ratings on staff appearance, professionalism, and customer knowledge. Finally, the excellent rating for insurance coverage shows that strong institutional commitment is achievable, and a similar commitment could be extended to transparent communication and customer understanding. Future research with a larger and more diverse sample would help determine whether these patterns hold across the industry.

The conclusions are limited by several design and measurement constraints. The small sample (N = 39 Logistics Managers) limited statistical power, and the 39 responses were clustered within 15 companies and possibly within shared 3PL providers, so the analyses, which assumed independent observations, likely understate uncertainty. The cross-sectional design supports association but not causation. The measures were adapted from existing instruments and showed borderline reliability, and many ratings fell at the lowest scale points, producing floor effects. Because all data were self-reported in one survey, common-method bias is possible. The findings are therefore exploratory and warrant confirmation with larger, longitudinal samples that include more companies and providers and are analyzed with cluster-aware methods, such as multilevel or cluster-robust models.

Contributions of Authors

April Rose E. Opao – conceptualization, data gathering, and data analysis
Marissa S. Quezon – conceptualization, data analysis, and editing

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Conflict of Interests

The authors declare no conflict of interest.

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