

Impact of Logistics Service Quality on Customer Behavior in Cabiao, Nueva Ecija

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ABSTRACT

This research study aimed to determine the impact of logistics service quality on customer behavior in Cabiao, Nueva Ecija. It specifically aimed to determine the respondents' level of agreement with the timeliness, quality, and availability of logistics services as well as how these variables affect customer behavior based on attitude, subjective norm, and perceived behavioral control. The study also examined whether there is a significant relationship between logistics service quality and customer behavior. A descriptive research method was used, and data were collected using a researcher-made questionnaire administered to 100 respondents who actively use logistics services, either for e-commerce shopping, personal use, or business transactions.

The findings showed that most respondents agreed that the logistics services were reliable, especially in terms of availability. Among the variables, the ability of logistics providers to offer on-demand delivery, flexible scheduling, and broad delivery coverage was rated the highest. The results showed a significant relationship between logistics service quality and customer behavior, indicating that improvements in service quality may lead to positive customer attitudes, stronger social influence, and greater perceived control over logistics-related decisions. These findings suggest that logistics companies must prioritize consistent, accessible, and customer-centered services to enhance customer satisfaction and loyalty. The results of this study may serve as a reference for logistics providers, online businesses, and other stakeholders in developing strategies that address customer expectations and improve overall service performance.

INTRODUCTION

The quality of logistics services (LSQ) has a significant impact on customer behavior, particularly in terms of satisfaction, loyalty, and repeat usage. In addition to online shopping, individuals increasingly rely on logistics services to have packages delivered directly to their homes. As a result, understanding how LSQ influences customer decisions and long-term engagement has become essential. According to Mentzer et al. (2001), LSQ is characterized by three critical dimensions: timeliness, service quality, and availability, all of which shape customer perceptions and behavioral responses. Timeliness refers to the speed and reliability of deliveries, ensuring that packages arrive as expected. Delayed or inconsistent deliveries may lead to dissatisfaction, while consistent and prompt service fosters trust and repeat patronage (Parasuraman et al., 1988).

Service quality encompasses product handling, communication, and customer service—all key determinants of customer satisfaction. Poor service, such as damaged items or unresponsive support, can drive customers away, whereas high-quality service builds loyalty and trust (Zeithaml, 2000). Availability involves the accessibility of services, including broad delivery coverage, diverse service options, and responsive support. Convenience plays a crucial role in shaping customer preferences, and providers that are easier to access are more likely to retain customers (Bowersox et al., 2013).

The Theory of Planned Behavior (Ajzen, 1991) provides a useful framework for understanding how LSQ influences consumer actions. The theory posits that customer behavior is shaped by attitudes, subjective norms, and perceived behavioral control. When logistics services consistently meet expectations in terms of availability, quality, and timeliness, customers are more likely to feel satisfied. This satisfaction, in turn, strengthens their intention to repurchase and remain loyal to the service provider.

Although LSQ has been widely studied in the context of e-commerce and supply chain effectiveness, most prior research has focused on business-to-business (B2B) transactions, often overlooking the business-to-consumer (B2C) and consumer-to-consumer (C2C) aspects of logistics services. Apisitthimethee (2021) noted that studies on LSQ's influence on individual customers—particularly those using logistics services for personal parcel deliveries—remain limited. Moreover, few studies have integrated the LSQ model with the Theory of Planned Behavior to examine consumer decision-making and its behavioral consequences within the logistics sector (Peeraya & Sawat, 2023).

This study addressed these research gaps by examining how LSQ influenced customers who used logistics firms for personal deliveries and e-commerce orders. It measured the effects of LSQ on customer satisfaction, loyalty, and behavioral intention. Data were collected using a structured questionnaire designed to assess customer attitudes toward various dimensions of LSQ. Statistical analyses were conducted to determine the extent to which LSQ factors influenced customer behavior.

By combining the LSQ framework with the Theory of Planned Behavior, this study contributed meaningful insights into how logistics providers can enhance service quality to improve customer satisfaction, strengthen loyalty, and gain a competitive advantage in an increasingly service-driven market.

THEORETICAL FRAMEWORK

The Logistics Service Quality (LSQ) model, formulated by Christopher R. Bienstock, James R. Mentzer, and William H. Bird in the mid-1990s, serves as a foundational framework for assessing and quantifying the quality of logistics services as perceived by customers. This model emphasizes three core dimensions: timeliness, quality, and availability.

Timeliness refers to the ability of a logistics service provider to deliver products to customers within the expected time frame. Timely delivery has a significant influence on customer satisfaction and trust. When orders arrive as scheduled, it enhances the customer experience and reinforces confidence in the service provider. Conversely, delays can lead to frustration, diminished trust, and reduced likelihood of repeat patronage.

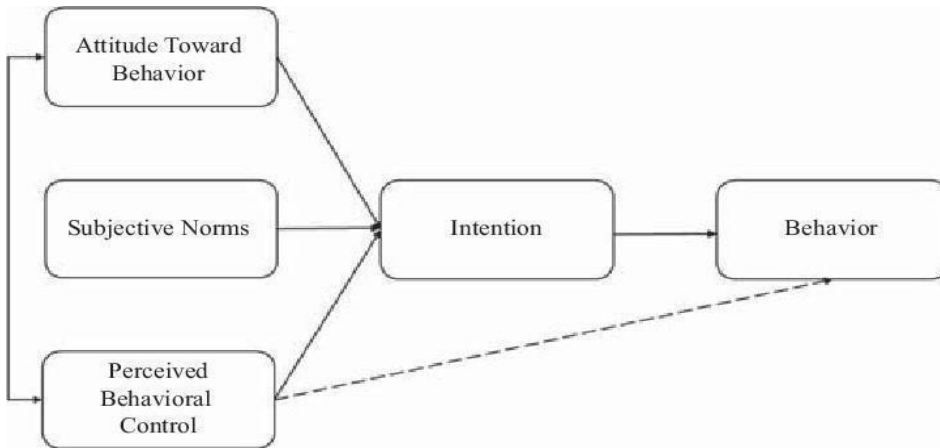
Quality in the logistics context pertains to the accuracy, condition, and reliability of the delivery process. It involves ensuring that the correct products are delivered in the appropriate quantities, in excellent and undamaged condition. This includes effective handling and proper packaging of goods to prevent any deterioration or damage during transit. The reliability of the logistics process—including order accuracy and safe transportation—directly affects the customer's perception of service excellence.

Availability encompasses the ability to make the right products accessible for delivery when needed. It involves efficient inventory management to ensure that goods are in stock and ready for dispatch. This dimension also includes the coordination of storage and transportation activities to facilitate prompt and seamless delivery. Customers are more likely to remain loyal to logistics providers that consistently meet demand without unnecessary delays or stockouts.

Together, these three dimensions—timeliness, quality, and availability—form the basis of the LSQ model and play a critical role in shaping customer satisfaction, loyalty, and behavioral intention. The application of this model provides logistics companies with a structured way to evaluate and enhance service performance from the customer's perspective.

Theory of Planned Behavior

Figure 1. Theory of Planned Behavior



According to the Theory of Planned Behavior (Ajzen, 1991), customer intentions are influenced by three key components: attitudes, subjective norms, and perceived behavioral control. These factors collectively determine behavioral intentions, which ultimately guide actual behavior. However, external factors can also directly enable or inhibit actions—regardless of a person’s intentions—depending on how much control the individual truly has over the behavior. In this context, perceived behavioral control serves as a proxy for actual behavioral control.

Attitude refers to an individual’s evaluation or opinion toward a specific object, behavior, or situation. This includes positive or negative judgments that influence the likelihood of performing a behavior. In consumer behavior, attitudes play a vital role in shaping purchasing decisions. However, altering attitudes can be difficult, as they are often deeply rooted in personal beliefs and past experiences.

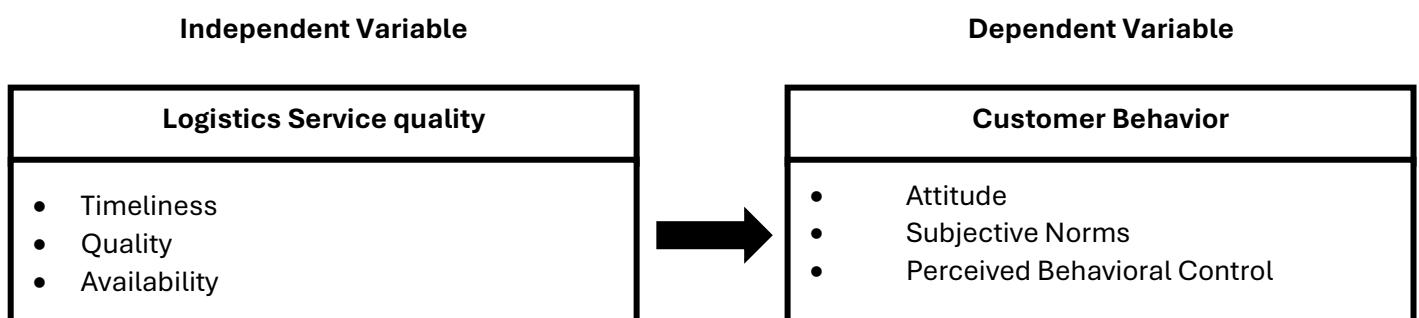
Subjective norms refer to an individual’s perception of social pressure or expectations from others—such as family, friends, or peers—to perform or refrain from a particular behavior. These are shaped by normative beliefs and the motivation to comply with social expectations. When individuals believe that important people in their lives endorse a behavior, they are more likely to engage in it.

Perceived behavioral control pertains to the extent to which an individual believes they can execute a given behavior with ease or difficulty. This perception is influenced by internal capabilities (e.g., knowledge, confidence) and external constraints (e.g., resources, opportunities). The level of perceived control can vary depending on the situation and can either facilitate or hinder behavioral intention.

The Theory of Planned Behavior has been widely used in behavioral research, including consumer behavior studies, as it provides a comprehensive framework for understanding how internal attitudes and external influences shape decision-making.

Conceptual Framework

Figure 2. Research Paradigm



The independent variable, logistics service quality, was assessed in terms of timeliness, quality, and availability. The dependent variable, consumer behavior, was measured along three dimensions: attitude, subjective norms, and perceived behavioral control. This framework illustrated how the components of logistics service quality influenced customer decision-making and behavioral outcomes. It provided a structured basis for analyzing the extent to which service delivery factors affected consumer perceptions and actions within the logistics context.

Statement Of the Problem

This study aimed to determine the impact of logistics service quality on customer behavior in Cabiao, Nueva Ecija. Specifically, it sought to answer the following research questions:

1. What is the respondents' level of agreement on the logistics service quality in terms of:
 - 1.1 Timeliness;
 - 1.2 Quality; and
 - 1.3 Availability?
2. What is the respondents' level of agreement on the impact of logistics service quality on customer behavior in terms of:
 - 2.1 Attitude;
 - 2.2 Subjective norm; and
 - 2.3 Perceived behavioral control?
3. Is there a significant relationship between logistics service quality and its impact on customer behavior?

Hypothesis

There is no significant relationship between logistics service quality and its impact on customer behavior.

Scope And Limitations

This study aimed to investigate the impact of logistics service quality on consumer behavior in Cabiao, Nueva Ecija. The demographic profile of the respondents was described in terms of age, occupation, monthly salary or allowance, and average frequency of logistics service usage. The study was conducted within the year 2025 and involved data collection from current users of logistics services in the area. The research examined how various dimensions of logistics service quality—namely timeliness, quality, and availability—affected consumer behavior. Consumer behavior was categorized into three components based on the Theory of Planned Behavior: attitude, subjective norms, and perceived behavioral control. The study sought to identify the influence of logistics service quality on these behavioral components, as well as any significant relationships between the variables.

To gather the necessary data, a researcher-made survey questionnaire was administered to 100 respondents in Cabiao, Nueva Ecija. The study focused on individuals and businesses that regularly utilized logistics and delivery services within the locality. The questionnaire was structured around the selected variables and utilized a 5-point Likert scale to assess the respondents' level of agreement. Expert validation was sought to ensure the reliability and relevance of the instrument. The accuracy and validity of the findings were supported by a systematic literature review and careful data collection. Data were analyzed using Spearman's Rank Correlation Coefficient, a non-parametric statistical tool used to determine the strength and direction of the relationship between ranked variables. Despite its contributions, the study was subject to certain limitations. It was geographically limited to Cabiao, Nueva Ecija, and therefore, its findings may not be generalized to other regions with differing logistics infrastructures or consumer behaviors.

The sample size of 100 respondents also limited the extent of statistical generalization. Additionally, due to time constraints during data collection, the study did not account for seasonal variations in logistics performance or consumer behavior. The reliability of responses may also have been affected by individual biases or subjective perceptions of logistics service quality. These limitations were considered in the interpretation and discussion of results. Future research is encouraged to address these constraints and expand the scope to include broader populations, longitudinal analysis, or comparisons across multiple regions.

Significance of the Study

This study investigated the impact of logistics service quality on customer behavior in Cabiao, Nueva Ecija. The findings are expected to be beneficial to the following groups:

Logistics Providers - The results of this study provide valuable insights into how service quality directly influences customer retention, satisfaction, and purchasing behavior. By understanding the importance of key service dimensions—availability, quality, and timeliness—logistics providers may be able to enhance operational performance and customer experience. The findings can inform the development of more customer-centric logistics strategies, ultimately contributing to improved service delivery and business competitiveness.

Customers - The study highlights how logistics services shape consumer expectations, preferences, and buying habits, helping consumers make informed choices and encouraging companies to improve their service standards for better performance.

Future Researchers - This study adds to the existing body of knowledge regarding the effect of logistics service quality on customer behavior, particularly within the context of Cabiao, Nueva Ecija. It may serve as a reference for future research focused on optimizing logistics operations and improving customer satisfaction in other geographic areas.

LITERATURE REVIEW

Timeliness

According to the findings of Amine and Gabriela (2017), the timeliness of deliveries significantly influences brand reputation and the likelihood of customer loyalty, particularly due to the growing demand for fast and reliable service. For customers, timeliness often reflects a company's commitment to service excellence and operational capability. Positive experiences with timely deliveries contribute to customer satisfaction and foster long-term relationships, increasing the chances of customer retention.

In addition to enhancing customer experience, timeliness plays a vital role in the operational efficiency of logistics. As noted by Irshadullah and Joydeb (2024), maintaining accurate delivery schedules improves overall supply chain performance, facilitates inventory turnover, and reduces transportation costs.

Typically, customers prioritize delivery speed over other considerations, including price. Abdullah and Resul (2020) emphasized that customers are more likely to value timely delivery than low-cost services. Offering flexible delivery options, such as express or same-day services, provides a competitive advantage by signaling reliability and responsiveness.

Alaa E. et al. (2023) found that companies recognized for fast deliveries are often perceived to have better service quality and stronger reputations. In line with this, Siber and Mustafa (2022) concluded that timeliness is a critical determinant of logistics service quality. Their study revealed that customers valued timely delivery more highly than product accuracy or affordability. Customers who received their orders on time tended to associate the service with reliability and efficiency, leading to a more favorable overall perception of service quality.

Quality

In the context of logistics services, quality refers to a provider's ability to deliver accurate order fulfillments and maintain proper conditions during shipment, ensuring that client requirements and expectations are consistently

met (Arabelen & Kaya, 2021). Two essential dimensions of logistics service quality that significantly influence customer satisfaction and trust are reliability and responsiveness. Reliability provides customers with the assurance that their deliveries will be completed efficiently and accurately, while responsiveness reflects the firm's ability to offer prompt assistance and resolve inquiries or issues effectively.

In a study focused on the e-commerce sector, Hafez et al. (2021) identified several key factors that significantly influence customer satisfaction with logistics services. These include secure material handling, shipment accuracy, and the credibility of the information provided to customers. These components help shape customer expectations and play a critical role in determining service quality. Yoganandan et al. (2024) further emphasized the importance of these factors, noting that the absence or deficiency of secure handling, shipment accuracy, or credible information can negatively affect customers' perceptions of the logistics service and the provider as a whole.

According to Gupta et al. (2022), logistics service quality can directly affect customer engagement. Their study outlines five core dimensions of service quality: operational quality, information reliability, customer service, personalization, and responsiveness. Attaining high performance in these dimensions contributes to stronger customer relationships and more positive engagement outcomes. In a separate study, Rashid and Rasheed (2024) stressed the role of information accuracy and transparency as critical drivers of customer trust. When customers perceive communication as accurate and transparent, it strengthens their trust in the service provider and fosters brand loyalty.

Availability

In the logistics sector, availability is considered one of the most crucial determinants of service efficiency, as it reflects a provider's capacity to meet customer demands in a timely and consistent manner. As defined by Mentzer et al. (2001), availability refers to the accessibility of products or services whenever and wherever customers require them. This directly influences customers' perceptions of service quality and plays a critical role in their purchase decision-making process.

In logistics, availability encompasses several components related to the supply chain, including inventory levels, distribution systems, and delivery speed. Consistent stock availability and timely service help build customer trust and foster repeat transactions by providing a sense of convenience and reliability. Conversely, stockouts, delivery delays, and unresponsive service contribute to dissatisfaction and may deter future purchases (Christopher, 2016).

A well-structured supply chain significantly enhances service availability by optimizing inventory management, minimizing delays, and reducing the additional costs associated with poor stock control (Bowersox et al., 2018). Key operational strategies—such as strategically located warehouses, efficient logistics routing, and accurate demand forecasting—also contribute to maintaining high service availability. Moreover, consistent performance in delivering reliable service contributes to a positive brand reputation. Customers associate consistent availability with reliability, which in turn fosters brand loyalty and encourages word-of-mouth recommendations.

Research by Hazen et al. (2019) indicates that high service availability improves the customer experience by reducing uncertainty during transactions. In e-commerce, customers expect fast and dependable service, making availability a top priority in their decision-making process. The integration of technological advancements, such as automated order processing, real-time inventory tracking, and advanced logistics systems, enhances operational efficiency and responsiveness. According to Kotler and Keller (2020), service efficiency is a critical factor in improving business reputation and achieving a competitive advantage in the market.

Attitude

Multiple studies have established that consumer buying intention is significantly influenced by attitude. A comprehensive understanding of customer attitude is therefore essential, as it often reflects the actual or potential behavior of consumers toward a product or service. Customer attitudes may be shaped by several factors,

including the availability of relevant information and prior service experiences. Conversely, perceived security risks can contribute to negative attitudes, leading to customer aversion (Banerjee & Dutta, 2010).

Riley and Klein (2021) found that factors such as shipment tracking capabilities, perceived trust, recommendations from peers, and online reviews play a crucial role in shaping customer attitudes, which in turn influence purchase intention. Furthermore, perceived service quality remains a dominant driver of positive customer attitudes. When customers perceive a product or service as high-quality, their attitude becomes more favorable, ultimately contributing to increased sales (Putra et al., 2017).

Shyuan and Ahmad (2024) emphasized that logistics capabilities—such as tracking accuracy, delivery speed, information quality, and after-sales services—significantly affect customer attitudes toward purchasing decisions. Negative experiences in these areas, particularly with after-sales service, were found to be associated with the development of negative attitudes.

According to Begum et al. (2022), the direct relationship between attitude and behavioral intention is among the most extensively studied constructs in consumer behavior research. Attitude is a critical demand-side factor that offers insight into how consumer perceptions influence the formation of purchase intentions. Customers who hold positive attitudes based on favorable service experiences are more inclined to engage in repeat transactions. Additionally, when a service provider is positively differentiated from competitors, this distinction can significantly influence customer mindset, thereby fostering both intention and brand loyalty.

Subjective Norms

According to Jain (2020), subjective norms exhibit a positive relationship with the purchase intention of consumers, particularly when it comes to luxury or high-value items. The study further showed that subjective norms significantly influence the relationship between attitude and the desire to purchase luxurious products. Additionally, the Attention to Social Comparison Information (ATSCI) served as a moderating variable between attitude and purchase intentions, as well as between subjective norms and purchase intentions. On the other hand, subjective knowledge was found to moderate the relationship between perceived behavioral control and purchase intentions (Chiou, 1998).

The findings of Hasbullah et al. (2016) also indicated that there is a significant correlation between consumer purchase intentions and behavioral factors such as attitude and subjective norms, as well as the accessibility of services through online platforms. This relationship emphasizes the necessity of considering these factors when seeking to understand the underlying motivations behind consumer decision-making and purchasing behavior.

Furthermore, Ling et al. (2024) highlighted that subjective norms exert a notable influence on consumer purchase behavior, especially when enhanced by variables such as attitude, perceived behavioral control, and social media relevance. Meanwhile, Lim et al. (2016) concluded that although subjective norms and perceived usefulness both have a significant positive impact on online purchase intention, subjective norms did not show a direct influence on actual shopping behavior and even appeared to negatively affect it in some contexts. These findings suggest that while subjective norms can shape intentions, they may not always translate into behavioral outcomes, depending on other influencing variables.

Perceived Behavioral Control

Perceived Behavioral Control (PBC) is a core construct in the Theory of Planned Behavior (TPB) introduced by Ajzen (1991). It refers to an individual's belief in their capacity to perform a specific behavior, influenced by both internal factors (e.g., skills, knowledge) and external conditions (e.g., access to resources, constraints). In consumer behavior, particularly within logistics services, PBC plays a critical role in shaping customer decisions and engagement.

According to Ajzen (2006), perceived behavioral control is influenced by expectations and past experiences. When customers have access to shipment tracking, delivery updates, and responsive customer service, they develop a greater sense of control during the transaction process. This perceived control contributes to higher satisfaction and strengthens their trust in the logistics provider, thereby enhancing customer retention.

The study conducted by Hsu et al. (2016) supported these findings, indicating that when customers perceive they are in control of the logistics process, their overall service experience improves. Similarly, Chopra and Meindl (2019) found that PBC helps consumers navigate uncertainties, allowing them to make more informed and confident purchase decisions. A logistics provider's operational efficiency reinforces this sense of control, which not only improves the customer experience but also establishes a competitive advantage. In contrast, inefficiencies can create uncertainty, discouraging repeat usage and negatively affecting customer perceptions (Wang et al., 2020).

In instances of service failures, the provider's responsiveness in addressing customer concerns becomes crucial. According to Liu and Lee (2019), swift and effective issue resolution contributes to a sense of security, reducing customer frustration and the likelihood of complaints. This proactive handling of service disruptions maintains customer trust and minimizes the long-term impact of negative experiences.

Foreign and local studies were reviewed to verify and validate the focus of the present research and to contextualize its findings. The reviewed literature encompassed various topics, including the dimensions of logistics service quality, consumer behavior, and the influence of logistics performance on consumer purchase decision-making. The review supported the analysis of the relationship between logistics service quality and consumer behavior. Logistics capabilities—particularly timeliness, service quality, and availability—were consistently identified as critical factors that shape customer perceptions, intentions to purchase, and overall buying behavior.

Timeliness influences the operational efficiency of logistics services and reflects a brand's reliability in delivering as promised. Timely deliveries strengthen brand reputation and increase customer retention. Quality relates to customer satisfaction, showing the provider's ability to meet expectations. Responsiveness, safe handling, and transparent communication were noted as key factors of perceived service quality. Meanwhile, availability affects how customers judge a brand's capacity to offer consistent and accessible services.

Customer experience with logistics services, shaped by various quality factors, reinforces key components of the Theory of Planned Behavior—attitudes, subjective norms, and perceived behavioral control. Attitudes develop through direct service encounters, while subjective norms arise from social expectations and peer influence. Perceived behavioral control depends on how easy or difficult customers find completing transactions based on logistics capabilities such as tracking tools, responsiveness, and delivery reliability.

METHODOLOGY

This study utilized a quantitative research method, specifically the descriptive survey research design. According to McCombes (2023), descriptive research aims to accurately and systematically describe a population, situation, or phenomenon. This approach is particularly suited for identifying characteristics, frequencies, trends, and categories relevant to the subject of investigation.

Descriptive survey research, as a type of quantitative research, involves the collection of data from a specific sample of individuals. Its purpose is to provide a detailed overview of characteristics, perceptions, attitudes, or behaviors present within a defined group (Siedlecki, 2020). This method enabled the researchers to organize the gathered data in a structured manner, directly aligned with the study's objectives and the statement of the problem.

Upon data collection, the responses were analyzed and summarized to draw meaningful conclusions about customer perceptions and behaviors related to logistics service quality. The use of this method ensured that the findings were both statistically reliable and directly applicable to the research objectives (Bhandari, 2022).

Population, Sample Size, and Sampling Techniques

The population of this study consisted of e-commerce consumers and individuals who utilized logistics services for product deliveries, either for business or personal purposes, within Cabiao, Nueva Ecija. A total of 100 respondents participated in the survey. According to Cochran (1977) in his book *Sampling Techniques* (3rd ed.), a sample size of 100 is sufficient to ensure an acceptable level of precision in research findings.

Participants were selected using a convenience sampling technique, which enabled the efficient collection of data from individuals who were readily available and accessible. This method is widely used due to its practicality and efficiency in reaching a target population (Etikan et al., 2016). Additionally, recent studies support the application of convenience sampling in exploratory and localized research contexts where immediate responses and access may be limited (Taherdoost, 2022).

Description of Respondents

The selection of appropriate respondents played a vital role in the success of the research. According to Raišys (2022), clearly defined selection criteria aligned with the sampling method help ensure accuracy and minimize potential ambiguity during the research process.

Respondents in this study were composed of e-commerce consumers and logistics service users from Cabiao, Nueva Ecija. These individuals were deemed highly relevant to the study due to their direct experience with logistics services, making them suitable for evaluating the impact of logistics service quality on customer behavior.

Their perspectives served as a primary source of data, contributing significantly to the generation of meaningful insights and comprehensive conclusions. As noted by Janse (2024), engaging with directly involved consumers is essential for producing practical and reliable findings in consumer behavior research.

Demographic characteristics such as age, occupation, monthly income or allowance, and frequency of logistics service usage were used to describe the respondents. Incorporating these variables provided critical background information that enriched the interpretation of the data and allowed for a more thorough analysis, as emphasized by Dobosh (2025).

Research Instrument

A researcher-made questionnaire was developed for the purpose of gathering data and was initially pre-tested among a group of respondents in Cabiao, Nueva Ecija who did not participate in the actual survey. According to Petrat (2024), the use of questionnaires is highly effective in assessing participants' subjective preferences, behaviors, intentions, opinions, and attitudes. Questionnaires are widely utilized in research due to their efficiency in collecting large volumes of data from sizable samples in a fast and cost-effective manner compared to other data collection methods. Taherdoost (2022) emphasized the importance of designing questionnaires in a well-structured manner to ensure alignment with the research objectives and to comprehensively cover all relevant aspects of the study.

The questionnaire used in this study consisted of four essential parts:

1. Instructions Section – Provided clear directions on how to complete the questionnaire, using multiple-choice and checklist formats.
2. Classification Information Section – Collected demographic data such as age, employment status, monthly income or allowance, quantity of orders, and frequency of logistics service usage.
3. Information Sought Section – Served as the core of the questionnaire and contained key items addressing the main research problems. Responses gathered from this section constituted the primary data for analysis.
4. Request for Cooperation and Acknowledgement Section – Sought respondents' voluntary participation and expressed appreciation for their time and input.

Ethical considerations were strictly observed throughout the data collection process. Informed consent was obtained from all participants, and confidentiality and data integrity were maintained. The study ensured that the rights and well-being of all respondents were protected at all times.

A 5-point Likert scale was applied in the questionnaire to effectively measure the level of agreement among respondents. This type of rating scale is commonly used to assess attitudes, perceptions, or opinions (Williams,

2025). As noted by Bhandari and Nikolopoulou (2020), the Likert scale typically presents a statement followed by a set of ordered response options ranging from strong agreement to strong disagreement. According to Henry (2024), the standardized format of the Likert scale enhances the comparability and consistency of responses across participants.

Data-Gathering Procedure

As defined by Aluthge et al. (2024), the data-gathering procedure is a critical stage in any research, serving as the foundation for acquiring the essential information required to answer the research questions and test the hypotheses. The quality and accuracy of the collected data directly affect the validity of the findings and the success of the study. According to Kuphanga (2024), the questionnaire method is a versatile and efficient tool that facilitates the collection of data across a broad range of respondents, particularly when structured and standardized appropriately.

For this study, the finalized version of the researcher-made questionnaire was reviewed, approved, and prepared for distribution. A total of 100 printed copies were produced, based on the recommended sample size to ensure statistical relevance, as supported by Fox (2025). Each questionnaire included clear written instructions, supplemented with verbal explanations to ensure the respondents fully understood the content and purpose of the study.

Respondents were approached directly and provided with the questionnaires. Ample time was given for completion, and the researchers made follow-up reminders to encourage timely responses. Once completed, the questionnaires were collected and the data were systematically organized, encoded, and prepared for statistical analysis.

Statistical Treatment of Data

The following statistical tools were used to analyze and interpret the data gathered in the study:

Weighted Mean

The weighted mean was utilized to determine the average level of agreement among respondents based on the 5-point Likert scale used in the questionnaire. This statistical method was applied to identify the degree of relevance and intensity of each data point relative to the frequency of responses in each category (McKenna et al., 2023).

Formula: $WM = \frac{\sum fx}{N}$

Where:

WM = weighted mean

Σ = Summation

fx = The sum of the production of f and x

F = Frequency of the respondents

X = No. of respondents

N = Population

Spearman Rank Correlation Coefficient

The Spearman Rank Correlation Coefficient (ρ) was employed to measure the strength and direction of the relationship between logistics service quality and customer behavior. This non-parametric statistical tool is

appropriate for ordinal data and does not require the assumptions of normality or linearity. It determines how well a monotonic relationship describes the association between two ranked variables.

Figure 3. Spearman Rho Rank Correlation Coefficient

$$\rho = 1 - \frac{6 \sum d^2}{n(n^2-1)}$$

Formula:

Where:

ρ = Spearman's rank correlation coefficient

d = Difference between the ranks of each pair of scores

$\sum d^2$ = Sum of squared rank differences

n = Number of observations or paired ranks

Decision Rule:

Ha.: P-value is less than or equal to 0.05 level of significance, reject the null hypothesis.

Ho.: P-value is greater than 0.05 level of significance, do not reject the null hypothesis.

Conclusion

Ha.: There is a significant relationship between logistics service quality and customer behavior at the 0.05 level of significance.

Ho.: There is no significant relationship between logistics service quality and customer behavior at the 0.05 level of significance.

Ethical Concerns

The researchers addressed several ethical concerns to ensure that the study was conducted with integrity, respect for human rights, and adherence to academic standards. The following measures were implemented throughout the research process:

1. Participation in the survey and any interviews was strictly voluntary. Respondents had the full right to withdraw at any point, especially if they felt uncomfortable providing sensitive information, such as personal demographics or financial details.
2. All respondents were fully informed about the nature, purpose, and scope of the research prior to their participation. No respondent was forced, coerced, or pressured to answer any question against their will.
3. The researchers ensured that all communication—whether through the questionnaire, interviews, or written content—used formal and respectful language. Inappropriate, offensive, or biased language was strictly avoided.
4. The privacy of all participants was respected. Personal data collected from respondents was kept confidential and used solely for academic purposes. No identifiable information was disclosed in any part of the research findings.

5. All sources, authors, and scholarly works referenced in the study were properly cited in accordance with academic citation standards. Plagiarism was strictly avoided, and intellectual property was respected throughout the writing and documentation process.
6. All discussions, conclusions, and analyses were strictly based on the data gathered from the survey. No assumptions or fabricated information were included, ensuring that the research findings reflected actual responses and results.

RESULTS AND DISCUSSION

This chapter presents, analyzes, and interprets the survey data for the study “Impact of Logistics Service Quality on Customer Behavior.” Results are organized by key variables—logistics service quality (timeliness, quality, availability) and customer behavior (attitude, subjective norms, perceived behavioral control). Each section highlights the computed results, such as weighted means and significance levels, and provides a brief interpretation of their implications.

1. Respondents' Level of Agreement on the Logistics Service Quality in terms of Timelines, Quality, and Availability.

The table below shows the respondents' level of agreement on logistics service quality in terms of timeliness, with an overall weighted mean of 4.40 (“strongly agree”). The statement “When my order is delivered on time, I feel more satisfied with the overall shopping experience” had the highest mean of 4.72, followed by “I am more likely to become a loyal customer if the logistics provider consistently delivers on time” with 4.54, and “Timely delivery increases my overall satisfaction, which influences my decision to make repeat purchases” with 4.52. The statement “I associate timely deliveries with high-quality service, which makes me more likely to repurchase” recorded a mean of 4.40. Meanwhile, “I am willing to overlook other service issues if my order is delivered on time” and “I prefer to shop with providers who have a strong reputation for timely deliveries, even if their prices are slightly higher” received means of 4.29 and 4.28. Lastly, “I feel more confident in my purchasing decisions when I know my order will be delivered on time” and “I would hesitate to recommend a provider that fails to deliver on time, regardless of the quality of the product” obtained 4.25 and 4.23. All means fall under “strongly agree.”

According to Kaligis et al. (2024), on-time delivery plays a crucial role in enhancing customer satisfaction, as it reflects the reliability and efficiency of a service provider. When orders arrive on time, customers feel valued and assured that the company can always meet their expectations. Timeliness strengthens trust and contributes to a positive overall shopping experience, which leads to repeat purchases and long-term loyalty. Even when minor issues arise, timely delivery can ease dissatisfaction and leave customers with a favorable impression of the brand.

Table 1 Respondents' Level of Agreement on the Logistics Service Quality in terms of Timeliness.

Timeliness	WM	Verbal Interpretation
1. When my order is delivered on time, I feel more satisfied with the overall shopping experience.	4.72	Strongly Agree
2. I am more likely to become a loyal customer if the logistics provider consistently delivers on time.	4.54	Strongly Agree
3. I associate timely deliveries with high-quality service, which makes me more likely to repurchase.	4.40	Strongly Agree
4. I am willing to overlook other service issues if my order is delivered on time.	4.29	Strongly Agree
5. I feel more confident in my purchasing decisions when I know my order will be delivered on time.	4.25	Strongly Agree
6. Timely delivery increases my overall satisfaction, which influences my decision to make repeat purchases.	4.52	Strongly Agree
7. I prefer to shop with providers who have a strong reputation for timely deliveries, even if their prices are slightly higher.	4.28	Strongly Agree

8. I would hesitate to recommend a provider that fails to deliver on time, regardless of the quality of the product.	4.23	Strongly Agree
Overall	4.40	Strongly Agree

Legend: 5 – Strongly Agree; 5.00 - 4.21– Agree; 4.20 - 3.41– Slightly Agree; 3.40 - 2.61– Disagree; 2.60 – 1.81 – Strongly Disagree; 1.80 – 1.00

Table 2 Respondents' Level of Agreement on the Logistics Service Quality in terms of Quality.

Quality	WM	Verbal Interpretation
1. The logistics provider delivers goods in good condition without any damage.	4.33	Strongly Agree
2. Logistics provider provides clear and timely updates regarding shipments.	4.36	Strongly Agree
3. Logistics provider delivers shipments without errors or mistakes.	4.06	Agree
4. Logistics provider takes responsibility for any quality-related issues that occur.	4.04	Agree
5. I would continue to use this logistics provider based on the quality of service alone.	4.33	Strongly Agree
6. The logistics provider made perceivable efforts in ensuring the overall quality of delivery	4.42	Strongly Agree
7. The quality of delivery meets the expected value of the logistics expense.	4.29	Strongly Agree
8. Protective measures (such as bubble wraps, seals, etc) were used in the packaging to secure the quality of the parcel	4.54	Strongly Agree
Overall	4.30	Strongly Agree

Legend: 5 – Strongly Agree; 5.00 - 4.21– Agree; 4.20 - 3.41– Slightly Agree; 3.40 - 2.61– Disagree; 2.60 – 1.81 – Strongly Disagree; 1.80 – 1.00

Table 2 presents the respondents' level of agreement on the logistics service quality in terms of Quality, with an overall weighted mean of 4.30, verbally interpreted as Strongly Agree. This indicates that the respondents are generally satisfied with the quality of logistics services provided, emphasizing its importance in shaping positive customer experiences. The statement "Protective measures (such as bubble wraps, seals, etc.) were used in the packaging to secure the quality of the parcel" received the highest weighted mean of 4.54, indicating a strong agreement on the importance of proper packaging to ensure product safety and preserve quality during the delivery process. This was followed by "Logistics provider provides clear and timely updates regarding shipments" with a weighted mean of 4.36, indicating the high value customers place on effective and transparent communication. Another highly rated item was "The logistics provider made perceivable efforts in ensuring the overall quality of delivery" with a weighted mean of 4.42, suggesting that customers recognized and appreciated the provider's commitment to quality. Two statements tied at a weighted mean of 4.33: "The logistics provider delivers goods in good condition without any damages" and "I would continue to use this logistics provider based on the quality of service alone." These results highlight how the physical condition of deliveries and consistent service quality significantly contribute to customer loyalty and future usage.

The statement "The quality of delivery meets the expected value of the logistics expense" had a weighted mean of 4.29, showing that respondents believed the service was worth its cost, an important consideration in customer satisfaction. Meanwhile, "Logistics provider delivers shipments without errors or mistakes" had a slightly lower weighted mean of 4.06, though still rated as Agree, indicating that minor lapses may occasionally occur but are not significant enough to cause overall dissatisfaction. Lastly, "Logistics provider takes responsibility for any quality-related issues that occur" received a weighted mean of 4.04, also interpreted as Agree, which implies a moderate level of confidence in the provider's ability to manage service recovery or rectify problems when they arise.

The results showed a strong positive perception of logistics service quality among respondents. This supports previous studies that emphasize the important role of quality in logistics services. According to Nguyen, Ngo, and Ruël (2019), logistics quality directly affects customer satisfaction and loyalty, especially when service providers ensure secure packaging, timely delivery, and effective communication. Their study emphasized that

logistics firms must continuously improve quality aspects to meet growing customer expectations in a competitive market. This supports the strong agreement among respondents in the present study, showing that quality is a key determinant of perceived value and customer retention in logistics services.

Table 3 Respondents' Level of Agreement on the Logistics Service Quality in terms of Availability.

Availability	WM	Verbal Interpretation
1. I prefer logistics providers that can deliver to a wide range of areas.	4.54	Strongly Agree
2. I am more likely to give positive feedback to a logistics provider that can accommodate my shipping needs at any time.	4.47	Strongly Agree
3. I value logistics providers that offer on-demand shipping or delivery, especially when I need urgent delivery.	4.62	Strongly Agree
4. I am more likely to recommend a logistics provider that offers flexible shipping options than others.	4.47	Strongly Agree
5. If a logistics provider is easily accessible for inquiries, I am more likely to trust them with my future purchases.	4.42	Strongly Agree
6. The logistics provider offers convenient options for rescheduling or redirecting deliveries.	4.16	Agree
7. I feel more confident using a logistics provider when I can easily report lost or delayed shipments.	4.33	Strongly Agree
8. If I can select a delivery date that suits my schedule, I feel more confident in using the service again.	4.56	Strongly Agree
Overall	4.45	Strongly Agree

Table 3 shows the respondents' level of agreement on the logistics service quality in terms of availability. The overall weighted mean is 4.45, which means the respondents strongly agree with most of the statements. The highest-rated statement, "I value logistics providers that offer on-demand shipping or delivery, especially when I need urgent delivery," received a weighted mean of 4.62. This shows that customers want providers who can respond quickly when they need fast service. Other highly rated items include "If I can select a delivery date that suits my schedule, I feel more confident in using the service again" 4.56 and "I prefer logistics providers that can deliver to a wide range of areas" 4.54, both showing that flexible delivery and wide coverage help customers feel more comfortable using the service. The statements "I am more likely to give positive feedback to a logistics provider that can accommodate my shipping needs at any time" and "I am more likely to recommend a logistics provider that offers flexible shipping options than others" both received a weighted mean of 4.47. This means that customers not only appreciate flexible services but are also willing to support or recommend providers that meet these expectations. Customers also agreed that if a provider is easy to contact for inquiries, it builds trust. The statement "If a logistics provider is easily accessible for inquiries, I am more likely to trust them with my future purchases" had a weighted mean of 4.42, indicating that the ease of reaching a logistics provider for inquiries positively influences their trust and likelihood of making future purchases. The Statement "I feel more confident using a logistics provider when I can easily report lost or delayed shipments" received a weighted mean of 4.33, suggesting that being able to easily report lost or delayed shipments increases their confidence in using a logistics provider. Lastly, "The logistics provider offers convenient options for rescheduling or redirecting deliveries" had a weighted mean of 4.16, which is interpreted as agree. This indicates that having convenient options for rescheduling or redirecting deliveries adds to the appeal and reliability of the logistics provider.

The results suggest that availability, such as being able to choose delivery times, receive quick service, and access customer support, is a major factor in customer satisfaction. When logistics providers make it easier for customers to get the service they need when they need it, customers feel more confident and are more likely to continue using those services. This is supported by the findings of Yuen, Wang, and Wong (2018), who emphasized that the availability of logistics services, including delivery flexibility, wide service coverage, and accessibility, plays an important role in shaping positive customer experiences. Their study states that when logistics services are dependable and aligned with customer expectations, it leads to higher satisfaction, increased trust, and stronger customer loyalty, outcomes that are also reflected in the responses gathered in this study.

Table 4 The Summary of the Respondents' Level of Agreement on the Logistics Service Quality in terms of Quality, Timeliness, and Availability

Respondents' Level of Agreement on the Logistics Service Quality	WM	Verbal Interpretation
1. Quality	4.40	Strongly Agree
2. Timeliness	4.30	Strongly Agree
3. Availability	4.45	Strongly Agree
Overall	4.38	Strongly Agree

Legend: 5 – Strongly Agree; 5.00 - 4.21– Agree; 4.20 - 3.41– Slightly Agree; 3.40 - 2.61– Disagree; 2.60 – 1.81 – Strongly Disagree; 1.80 – 1.00

Table 4 shows the summarized data of the respondents' level of agreement on the logistics service quality in terms of quality, timeliness, and availability. Availability received the highest average rating of 4.45, followed by quality at 4.40, and timeliness at 4.30. With an overall average of 4.38, indicating a strong level of agreement among respondents in terms of the reliability and effectiveness of the logistics services provided.

These findings align with the Logistics Service Quality (LSQ) theory, which emphasizes the comprehensive nature of logistics service performance, including factors such as quality, timeliness, and availability (Mentzer et al., 2001). In the context of this study, these aspects play a crucial part in shaping customer satisfaction by making sure that service delivery meets or surpasses expectations. The positive responses across all three elements indicate that logistics service quality plays a significant and integrated role in influencing customer perceptions. This suggests that logistics providers should strategically focus on sustaining balanced operations across service aspects to increase satisfaction, build long-term relationships, and gain a competitive edge.

2. Respondents' Level of Agreement on the Impact of Logistics Service Quality on Customer Behavior in terms of Attitude, Subjective Norms, and Perceived Behavioral Control.

Table 5 Respondents' Level of Agreement on the Impact of Logistics Service Quality on Customer Behavior in terms of Attitude.

Attitude	WM	Verbal Interpretation
1. I expect logistics companies to provide fast and reliable services.	4.57	Strongly Agree
2. I trust logistics companies to handle my deliveries safely and securely	4.50	Strongly Agree
3. I believe logistics companies should take full responsibility for any damages or issues with shipments.	4.48	Strongly Agree
4. I appreciate receiving notifications when a shipment has been delivered, especially when I'm not present to accept it.	4.45	Strongly Agree
5. I prefer logistics providers that offer flexible delivery times, including evenings and weekends.	4.40	Strongly Agree
6. I value logistics providers who allow me to easily change delivery times or locations if necessary.	4.43	Strongly Agree
7. I would recommend my current logistics provider to others based on my overall experience.	4.25	Strongly Agree
8. It's important to me that logistics providers offer customized delivery options, such as special handling for fragile or high-value items	4.51	Strongly Agree
Overall	4.45	Strongly Agree

Legend: 5 – Strongly Agree; 5.00 - 4.21– Agree; 4.20 - 3.41– Slightly Agree; 3.40 - 2.61– Disagree; 2.60 – 1.81 – Strongly Disagree; 1.80 – 1.00

Table 5 shows the respondents' level of agreement on the impact of logistics service quality on customer behavior in terms of attitude. The overall weighted mean is 4.45, which means that most respondents strongly agree with the statements. The highest rated item was "I expect logistics companies to provide fast and reliable services" with a weighted mean of 4.57. This shows that customers look for quick and dependable service. The statement

“It’s important to me that logistics providers offer customized delivery options such as special handling for fragile or high-value items” followed with a weighted mean of 4.51, suggesting that people also value personalized delivery services. This preference highlights how tailored delivery options enhance customers’ sense of convenience and satisfaction. Another statement, “I trust logistics companies to handle my deliveries safely and securely,” had a weighted mean of 4.50, showing that trust is an important part of customer attitude.

Other statements, like “I believe logistics companies should take full responsibility for any damages or issues with shipments” and “I appreciate receiving notifications when a shipment has been delivered, especially when I’m not present to accept it,” also had high weighted means of 4.48 and 4.45. These results show that customers also value clear communication and accountability. Respondents also agreed with statements, “I prefer logistics providers that offer flexible delivery times, including evenings and weekends” and “I value logistics providers who allow me to easily change delivery times or locations, if necessary,” about flexible delivery times and the ability to change delivery details, which had weighted means of 4.40 and 4.43. The lowest rated item was “I would recommend my current logistics provider to others based on my overall experience,” but it still had a weighted mean of 4.25, which still positive. This means that customers’ attitudes are mostly shaped by how easy, reliable, and safe they find the logistics service. When people feel that the provider meets their expectations and needs, they are more likely to feel good about using the service. This positive attitude increases customer loyalty and strengthens their long-term relationship with the logistics provider. According to Nguyen et al. (2019), the attitude of customers toward logistics companies depends on how they view the service performance, especially in terms of speed, safety, and clear communication. Their study found that better service quality leads to a more positive attitude from customers and encourages repeat use and recommendations to others. They also emphasized that customers are more likely to develop trust in a logistics provider when their expectations are consistently met or exceeded. As a result, strong service performance not only enhances satisfaction but also builds a reliable reputation that attracts new customers.

Table 6 Respondents’ Level of Agreement on the Impact of Logistics Service Quality on Customer Behavior in terms of Subjective Norms

Subjective Norms	WM	Verbal Interpretation
1. I often base my choice of logistics service providers on recommendations or feedback from others.	4.21	Strongly Agree
2. The satisfaction of others with a logistics service affects my own satisfaction and attitude towards using the same service.	4.06	Agree
3. I trust that the well-known logistics providers will handle my goods safely and securely better than other logistics providers.	4.31	Strongly Agree
4. With the growing awareness of environmental sustainability in society, I feel obligated to choose eco-friendly logistics service providers if available.	4.24	Strongly Agree
5. The opinions of people around me influence how I perceive the value of logistics services in terms of quality and price.	4.29	Strongly Agree
6. Social media discussions about logistics services (e.g., reviews, blogs, ratings) influence my decision-making about which service to use.	4.34	Strongly Agree
7. When others share positive experiences about a logistics service, it makes me more likely to try the same service.	4.38	Strongly Agree
8. I perceive higher-cost logistics providers to have more reputable quality than cheaper ones.	4.12	Agree
Overall	4.24	Strongly Agree

Legend: 5 – Strongly Agree; 5.00 - 4.21– Agree; 4.20 - 3.41– Slightly Agree; 3.40 - 2.61– Disagree; 2.60 – 1.81 – Strongly Disagree; 1.80 – 1.00

Table 6 presents the respondents’ level of agreement on the impact of logistics service quality on customer behavior in terms of Subjective Norms, with an overall weighted mean of 4.24, verbally interpreted as Strongly Agree. The statements “When others share positive experiences about a logistics service, it makes me more

likely to try the same service”, “Social media discussions about logistics services (e.g., reviews, blogs, ratings) influence my decision-making about which service to use”, and “I trust that the well-known logistics providers will handle my goods safely and securely better than other logistics providers” had weighted means of 4.38, 4.34, and 4.31 respectively, all verbally interpreted as Strongly Agree.

Other statements, such as “The opinions of people around me influence how I perceive the value of logistics services in terms of quality and price” and “With the growing awareness for environmental sustainability in society, I feel obligated to choose eco-friendly logistics service providers if available,” also received strong agreement, with weighted means of 4.29 and 4.24, respectively. Meanwhile, “I often base my choice of logistics service providers on recommendations or feedback from others,” obtained a weighted mean of 4.21, indicating strong agreement as well. The statements “I perceive higher costing logistics providers to have more reputable quality than cheaper ones” and “The satisfaction of others with a logistics service affects my own satisfaction and attitude towards using the same service” had weighted means of 4.12 and 4.06, respectively, and were verbally interpreted as Agree.

According to Kitthamkesorn and Taniguchi (2021), social influence plays an important role in shaping customer behavior, particularly in logistics-related decisions. Their study emphasized that subjective norms, including peer recommendations, public reviews, and shared social values, significantly affect the way consumers choose and evaluate logistics services. In today’s digital era, consumers are increasingly relying on social signals such as online discussions, word-of-mouth, and brand reputation. This supports the findings of this study, where respondents indicated a strong reliance on the experiences and opinions of others when selecting logistics providers. Most of the external influences on customer decisions nowadays are often based on social media content and relevant issues that are usually a topic of online discussions. These influences typically create an impact on the perspective of customers by engaging them or inciting their interests, which then gives them motivations and ideas regarding their purchase decisions based on found preferences.

Table 7 Respondents' Level of Agreement on the Impact of Logistics Service Quality on Customer Behavior in terms of Perceived Behavioral Control

Perceived Behavioral Control	WM	Verbal Interpretation
1. I feel that external factors (like weather, traffic) are beyond my control and can affect my delivery experience.	4.38	Strongly Agree
2. I feel confident that I can easily find a logistics provider that can deliver my product on time.	4.32	Strongly Agree
3. The ability to track my shipment in real time makes me feel more in control of the delivery process.	4.43	Strongly Agree
4. I am more likely to trust a logistics provider that allows me to choose between different delivery methods (home delivery, pickup points, etc)	4.44	Strongly Agree
5. I believe I can effectively communicate my needs to the logistics provider.	4.16	Agree
6. I find it easy to access information about the logistics provider’s services and policies.	4.21	Strongly Agree
7. I feel capable of resolving any problems that may occur with my deliveries.	3.92	Agree
8. I find the logistics provider’s services to be user-friendly and easy to navigate.	4.16	Agree
Overall	4.25	Strongly Agree

Legend: 5 – Strongly Agree; 5.00 - 4.21– Agree; 4.20 - 3.41– Slightly Agree; 3.40 - 2.61– Disagree; 2.60 – 1.81 – Strongly Disagree; 1.80 – 1.00

Table 7 shows the respondents' level of agreement on the impact of logistics service quality on customer behavior in terms of perceived behavioral control, with a weighted mean average of 4.25, pertaining to a verbal interpretation of Strongly Agree. The following statements “I am more likely to trust a logistics provider that

allows me to choose between different delivery methods (home delivery, pickup points, etc)”, “The ability to track my shipment in real time makes me feel more in control of the delivery process”, “I feel that external factors (like weather, traffic) are beyond my control and can affect my delivery experience”, “I feel confident that I can easily find a logistics provider that can deliver my product on time”, and “I find it easy to access information about the logistics provider’s services and policies”, have weighted mean averages of 4.44, 4.43, 4.38, 4.32, and 4.21 respectively, which correspond to a verbal interpretation of strongly agree. These results suggest that customers feel a strong sense of control when logistics providers offer flexible delivery options and real-time tracking, which improves their trust and confidence in the service. Customers also acknowledge that some external factors, like weather and traffic, are beyond their control but still impact their delivery experience. Moreover, easy access to information and the ability to find reliable providers contribute to a positive perception of logistics service quality. Overall, these factors influence customers' behavior by increasing their perceived control over the delivery process. While the remaining statements “I believe I can effectively communicate my needs to the logistics provider”, and “I find the logistics provider’s services to be user-friendly and easy to navigate” equally have the weighted average of 4.16, and “I feel capable of resolving any problems that may occur with my deliveries” with a weighted average mean of 3.92 all indicate a verbal interpretation of agree. Indicating that customers generally feel confident in their ability to communicate their needs and find the logistics provider’s services easy to use. However, there is slightly less confidence in their ability to resolve any problems that may arise with their deliveries.

The findings suggest that the sense of control over the access to the delivery process (in terms of information, scheduling, tracking, and method selection), and the expectations on external constraints such as weather, traffic, etc., are strong indicators of intention and influence on customer behavior. Whereas the ease of navigation and access to logistics services and inquiries also play a significant role in the level of perceived behavioral control of the respondents. According to Ajzen (2020), perceived behavioral control refers to one’s perception of the ease or difficulty of performing a behavior and plays a central role in determining both behavioral intention and actual behavior. Individuals who believe they have greater control over a situation are more likely to take action, especially when they feel well-equipped to handle potential challenges.

Table 8 The Summary of the Respondents' Level of Agreement on the Impact of Logistics Service Quality on Customer Behavior in terms of Attitude, Subjective Norms, and Perceived Behavioral Control

Respondents' Level of Agreement on the Impact of Logistics Service Quality on Customer Behavior	WM	Verbal Interpretation
1. Attitude	4.45	Strongly Agree
2. Subjective Norms	4.24	Strongly Agree
3. Perceived Behavioral Control	4.25	Strongly Agree
Overall	4.31	Strongly Agree

Legend: 5 – Strongly Agree; 5.00 - 4.21– Agree; 4.20 - 3.41– Slightly Agree; 3.40 - 2.61– Disagree; 2.60 – 1.81 – Strongly Disagree; 1.80 – 1.00

Table 8 presents the summarized data of the respondents’ level of agreement on the impact of logistics service quality on customer behavior in terms of attitude, subjective norms, and perceived behavioral control. Attitude received the highest average rating of 4.45, followed by perceived behavioral control with a weighted mean of 4.25, and subjective norms at 4.24. The overall weighted mean is 4.31, suggesting a strong level of agreement that logistics service quality significantly influences various aspects of customer behavior.

These findings align with the Theory of Planned Behavior (TPB), which asserts that attitude toward a behavior, subjective norms, and perceived behavioral control are critical predictors of actual behavioral intentions (Ajzen, 1991). In the context of logistics service quality, a favorable attitude suggests that customers perceive the logistics services positively, which enhances their possibility of continued engagement. Similarly, the ratings on subjective norms and perceived behavioral control imply that social influences and the ease with which customers can act on their intentions are shaped by the quality of logistics.

3. Significant Relationship between Respondents’ Level of Agreement on Logistics Service Quality and Its Impact on Customer Behavior.

Table 9 Spearman’s rho on the Significant Relationship between the Respondent’s Level of Agreement on Logistics Service Quality and its Impact on Customer Behaviors in terms of Timeliness

TIMELINESS				
	Spearman’s rho	p-value	DECISION	CONCLUSION
Attitude	0.558	<.001	Reject Ho	Significant
Subjective Norms	0.387	<.001	Reject Ho	Significant
Perceived behavioral control	0.354	<.001	Reject Ho	Significant

Legend: Accept Ho if p-value > 0.05 = Not Significant; Reject Ho if p-value ≤ 0.05 = Significant

The table shows that “timeliness” has a significant and positive relationship with all three components of customer behavior. Among the three, “attitude” shows the strongest relationship with timeliness ($p = 0.558, p < .001$), indicating that when deliveries are on time and meet customer expectations, it greatly enhances how customers feel about their purchase experience. A timely logistics process helps build a favorable impression, reinforcing trust and satisfaction. “Subjective norms” followed with a significant impact ($p = 0.387, p < .001$), suggesting that when logistics services are timely, customers are more likely to perceive positive social pressure or encouragement from peers to continue using the service. Lastly, “perceived behavioral control” also shows a moderately strong positive correlation ($p = 0.354, p < .001$), indicating that timeliness contributes to customers’ sense of control over the buying process, such as feeling confident that orders will arrive as planned. This increased sense of control ultimately supports smoother decision-making and strengthens customers’ intention to repurchase.

Table 10 Spearman’s rho on the Significant Relationship between the Respondent’s Level of Agreement on Logistics Service Quality and its Impact on Customer Behaviors in terms of Quality.

QUALITY				
	Spearman’s rho	p-value	DECISION	CONCLUSION
Attitude	0.47	<.001	Reject Ho	Significant
Subjective Norms	0.41	<.001	Reject Ho	Significant
Perceived behavioral control	0.487	<.001	Reject Ho	Significant

Legend: Accept Ho if p-value > 0.05 = Not Significant; Reject Ho if p-value ≤ 0.05 = Significant

The table shows that “quality” has a significant and positive relationship with all components of customer behavior. Among the three, the strongest relationship was found with “perceived behavioral control” ($p = 0.487, p < .001$), indicating that when customers experience reliable and efficient logistics services, they feel more capable and in control of their purchasing decisions. Following closely, “attitude” toward purchasing behavior also exhibited a strong positive correlation ($p = 0.47, p < .001$), suggesting that high-quality logistics services positively influence how customers evaluate their overall shopping experience. Lastly, “subjective norms” shows a strong positive correlation as well ($p = 0.41, p < .001$), indicating that customers’ perceptions of social expectations or peer influences are also affected by the quality of logistics services they receive.

Table 11 Spearman’s rho on the Significant Relationship between the Respondent’s Level of Agreement on Logistics Service Quality and its Impact on Customer Behaviors in terms of Availability.

AVAILABILITY				
	Spearman’s rho	p-value	DECISION	CONCLUSION
Attitude	0.627	<.001	Reject Ho	Significant
Subjective Norms	0.442	<.001	Reject Ho	Significant
Perceived behavioral control	0.457	<.001	Reject Ho	Significant

Legend: Accept Ho if p-value > 0.05 = Not Significant; Reject Ho if p-value ≤ 0.05 = Significant

The table shows that “availability” has a significant and positive relationship with all three components of customer behavior. Among the three, “attitude” is recorded as having the strongest positive correlation ($p = 0.627, p < .001$), indicating that when logistics services are consistently available, such as having stock on hand, accessible delivery options, and dependable order fulfillment, customers tend to develop more favorable evaluations of their purchasing experiences. Next, “perceived behavioral control” also shows a strong positive relationship ($p = 0.457, p < .001$), suggesting that when products and services are readily available, customers feel more in control of their ability to make purchases with ease and confidence. Lastly, “subjective norms” demonstrates a significant positive correlation ($p = 0.442, p < .001$), indicating that the availability of logistics services can influence the social pressure customers perceive from others, such as peers or influencers, regarding their buying decisions.

Table 12 The Significant Relationship between Respondents’ Level of Agreement on Logistics Service Quality and Its Impact on Customer Behavior.

OVERALL LEVEL OF AGREEMENT ON THE IMPACT OF LOGISTICS SERVICE QUALITY				
INDICATORS	Spearman’s rho	p-value	DECISION	CONCLUSION
Attitude	0.551	<.001	Reject Ho	Significant
Subjective Norms	0.413	<.001	Reject Ho	Significant
Perceived behavioral control	0.432	<.001	Reject Ho	Significant
overall	0.465	<.001	Reject Ho	Significant

Legend: Accept Ho if $p\text{-value} > 0.05 = \text{Not Significant}$; Reject Ho if $p\text{-value} \leq 0.05 = \text{Significant}$

The table shows a significant relationship between the respondents’ level of agreement on logistics service quality and its impact on customer behavior, measured in terms of attitude, subjective norms, and perceived behavioral control. The relationship between logistics service quality and attitude was the strongest, with a coefficient of 0.551, followed by perceived behavioral control at 0.432, and subjective norms at 0.413. The overall correlation coefficient was 0.465, indicating a moderate positive relationship between logistics service quality and customer behavior. Given these findings, the researchers rejected the null hypothesis, confirming that there is a significant relationship between the quality of logistics services and customer behavioral factors.

Cotarelo et al. (2021) found that timeliness was the most influential logistics service quality attribute across all omni-channel retail scenarios, with availability and condition also playing meaningful roles in driving customer satisfaction and loyalty. When services deliver products on time, ensure they are available as expected, and maintain good condition, customers tend to develop more favorable attitudes and display stronger loyalty behaviors. This emphasizes that logistics functions are not merely operational necessities but strategically essential for influencing customer behavior, enhancing brand loyalty, and creating a competitive advantage.

SUMMARY OF FINDINGS, CONCLUSION, AND RECOMMENDATION

Summary of Findings

Based on the analysis and interpretation of the data, the following findings were derived:

1. The respondents’ level of agreement on logistics service quality, in terms of timeliness, quality, and availability, yielded an overall weighted mean of 4.38, indicating a strong agreement with the quality of services provided.
2. The respondents’ level of agreement on the impact of logistics service quality on customer behavior, including attitude, subjective norms, and perceived behavioral control, yielded an overall weighted mean of 4.31, also reflecting strong agreement.
3. The Spearman’s Rank Correlation Coefficient between logistics service quality and customer behavior resulted in a rho value of 0.465 with a p-value of $< .001$, indicating a moderate positive and statistically significant relationship between the two variables.

Conclusions

Based on the findings, the following conclusions were drawn:

1. Logistics service quality—particularly in terms of availability, quality, and timeliness—had a substantial influence on customers' satisfaction and their perception of the reliability of the service provider.
2. Logistics service quality significantly influenced customer behavior, especially with regard to attitudes, subjective norms, and perceived behavioral control, which are key predictors of customer decision-making.
3. Given the statistically significant relationship observed, the null hypothesis was rejected, confirming that logistics service quality has a meaningful impact on customer behavior

Recommendations

In light of the findings and conclusions, the following recommendations are proposed:

For Logistics Providers

- Implement real-time tracking systems with proactive delay notifications to enhance transparency and customer preparedness.
- Adopt a clear service recovery policy, ensuring timely responses, structured complaint handling, and appropriate compensation or resolution mechanisms.
- Provide customer-controlled delivery tools, such as online or app-based self-service scheduling options, to increase flexibility and convenience.

For Customers

- Provide constructive and honest feedback based on logistics experiences to contribute to service improvement and assist others in making informed choices.
- Review other customer experiences and satisfaction levels before selecting a logistics provider, as these offer critical insights into service reliability.
- Utilize available customer support features (e.g., tracking tools, direct communication, complaint resolution processes) to address service issues.

For Future Researchers

- Conduct comparative studies across different regions or logistics firms to explore geographical or organizational variations in logistics service quality and customer behavior.
- Investigate additional dimensions of logistics service quality, such as cost efficiency, environmental sustainability, or technological integration, to expand the scope of the study.
- Examine the role of digital platforms and automation tools in enhancing customer satisfaction and service performance, focusing on their influence on customer perceptions and behavioral responses.

REFERENCES

1. Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211.
2. Ajzen, I. (2006). Perceived behavioral control, self-efficacy, focus of control, and the theory of planned behavior. *Journal of Applied Social Psychology*, 32(4), 665–683. <https://doi.org/10.1111/j.1559-1816.2002.tb00236.x>
3. Aluthge, P. et al., (2024, June). The Crucial Role of Data Collection in Research: Techniques, Challenges, and Best Practices. ResearchGate. https://www.researchgate.net/publication/3883155720_The_Crucial_Role_of_Data_Collection
4. Akıl, S., & Ungan, M. C. (2022). E-Commerce Logistics Service Quality. *Journal of Electronic Commerce in Organizations*, 20(1). <https://doi.org/10.4018/jeco.292473>
5. Apisitthimethee, S. (2021). Logistics service quality in B2C e-commerce from consumers' perspective. *TailieuGiaoTrinh.com*. <https://tailieugiaotrinh.com/logistics-service-quality-in-b2c-e-commerce-from-consumers-perspective-4700/>
6. Arabelen, G., & Kaya, H. T. (2021). Assessment of logistics service quality dimensions: A qualitative approach. *Journal of Shipping and Trade*, 6(1). <https://doi.org/10.1186/s41072-021-00095-1>
7. Banerjee, N. (2022). A Study on Customers' Attitude towards Online Shopping – An Indian Perspective. <http://gnanaganga.inflibnet.ac.in:8080/jspui/handle/123456789/129>
8. Bhandari, P. (2022, May 15). Descriptive research design | Definition, methods & examples. Scribbr. <https://www.scribbr.com/methodology/descriptive-research/>
9. Bhandari, P., & Nikolopoulou, K. (2020, July 3). What is a Likert scale? | guide & examples. Scribbr. <https://www.scribbr.com/methodology/likert-scale/>
10. Bowersox, D. J., Closs, D. J., & Cooper, M. B. (2013). *Supply chain logistics management* (4th ed.). McGraw-Hill Education.
11. Bowersox, D. J., Closs, D. J., Cooper, M. B., & Bowersox, J. C. (2013). *Supply chain logistics management* (4th ed.). McGraw-Hill.
12. Chopra, S., & Meindl, P. (2019). *Supply chain management: Strategy, planning, and operation* (7th ed.). Pearson.
13. Christopher, M. (2016). *Logistics & supply chain management* (5th ed.). Pearson.
14. Cochran, W. G. (1977). *Sampling techniques* (3rd ed.). John Wiley & Sons.
15. Cotarelo, M., Calderón, H., & Fayos, T. (2021). A further approach in omnichannel LSQ, satisfaction and customer loyalty. *International Journal of Retail & Distribution Management*, 49(8), 1133–1153.
16. Dobosh, M. A. (2025). Survey: Demographic Questions. *Sage Research Method*. <https://methods.sagepub.com/ency/edvol/>
17. Dündar, A. O., & Öztürk, R. (2020). THE EFFECT OF ON-TIME DELIVERY ON CUSTOMER SATISFACTION AND LOYALTY IN CHANNEL INTEGRATION. *Business & Management Studies: An International Journal*, 8(3), 2675–2693. <https://doi.org/10.15295/bmij.v8i3.1520>
18. El Moussaoui, A. E., Benbba, B., & El Andaloussi, Z. (2022). Impact of logistics performance on the store image, consumer satisfaction and loyalty: a quantitative case study. *Arab Gulf Journal of Scientific Research*, 41(3). <https://doi.org/10.1108/agjsr-09-2022-0201>
19. Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), 1–4. <https://doi.org/10.11648/j.ajtas.20160501.11>
20. Fox, S. (2025, July 23). How to determine survey sample size: A short guide. *Survicate*. <https://survicate.com/blog/survey-sample-size/>
21. Ghourrassi, A., & Tigu, G. (2017). (PDF) The impact of the logistics management in customer satisfaction. ResearchGate. <https://www.researchgate.net/publication/319342843>
22. Gupta, Anchal & Singh, Rajesh & Mathiyazhagan, K. & Suri, Pradeep & Dwivedi, Yogesh. (2022). Exploring relationships between service quality dimensions and customers satisfaction: empirical study in context to Indian logistics service providers. *The International Journal of Logistics Management*. 34. 10.1108/IJLM-02-2022-0084.

23. G. Yoganandan, Vasana, M., & László Vértessy. (2024). Evaluating the effect of logistics service quality on customer satisfaction and loyalty. *International Journal of Services and Operations Management*, 47(4), 515–534. <https://doi.org/10.1504/ijssom.2024.137991>
24. Hafez, L., Elakkad, E., & Gamil, M. (2021). A Study on the Impact of Logistics Service Quality on the Satisfaction and Loyalty of E-Shoppers in Egypt. *Open Journal of Business and Management*, 09(05), 2464–2478. <https://doi.org/10.4236/ojbm.2021.95133>
25. Hazen, B. T., Overstreet, R. E., Hall, D. J., & Hanna, J. B. (2014). Antecedents to consumer perceptions of logistics-related customer service. *Transportation Journal*, 53(1), 5–22. <https://doi.org/10.5325/transportationj.53.1.0005>
26. Henry, M. (2024, November 15). Likert Scale-best practices & use cases. InMoment. <https://inmoment.com/blog/likert-scale/>
27. Hoque, M. N., Rahman, M. K., Said, J., Begum, F., & Hossain, M. M. (2022). What Factors Influence Customer Attitudes and Mindsets towards the Use of Services and Products of Islamic Banks in Bangladesh? *Sustainability*, 14(8), 4703. <https://doi.org/10.3390/su14084703>
28. Hsu, C. L., Chang, K. C., & Chen, M. C. (2016). The impact of website quality on customer satisfaction and purchase intention in the e-commerce context. *Total Quality Management & Business Excellence*, 27(9-10), 1053–1071. <https://doi.org/10.1080/14783363.2015.1057606>
29. Kaligis, J. N., Satmoko, N. D., Tahapary, G. H., Tawil, M. R., & Kusnadi, I. H. (2024). The Effect Of Timely Delivery On Customer Satisfaction With Service Quality As A Moderating Variable. *Innovative: Journal of Social Science Research*, 4(2), 4484–4493. <https://doi.org/10.31004/innovative.v4i2.9917>
30. Kuphanga, D. (2024, March). Questionnaires in Research: Their Role Advantages and Main Aspects. https://www.researchgate.net/publication/378868278_Questionnaires_in_Research_Their_Role_Advantages_and_Main_Aspects
31. Janse, B. (2024, July 9). Respondents definition, meaning and recruitment – Toolshero. <https://www.toolshero.com/research/respondents/>
32. Kotler, P., & Keller, K. L. (2020). *Marketing management* (16th ed.). Pearson.
33. Liu, Y., & Lee, J. (2019). The effect of logistics service quality on customer loyalty in e-commerce: A mediating role of perceived control. *Journal of Retailing and Consumer Services*, 50, 50–57. <https://doi.org/10.1016/j.jretconser.2019.04.004>
34. McCombes, S. (2023, June 15). Descriptive research design | Definition, methods & examples. Scribbr. <https://www.scribbr.com/methodology/descriptive-research/>
35. Mentzer, J. T., Flint, D. J., & Hult, G. T. M. (2001). Logistics service quality as a segment-customized process. *Journal of Marketing*, 65(4), 82–104. <https://doi.org/10.1509/jmkg.65.4.82.18390>
36. Mohammed, I., & Mandal, J. (2024). The Impact of Lead Time Variability on Supply Chain Management. *International Journal of Supply Chain Management*, 8(2), 41–55. <https://doi.org/10.47604/ijscm.3075>
37. Nguyen, T. H., Ngo, L. V., & Ruël, H. (2019). Logistics service quality: A critical review and research agenda. *The International Journal of Logistics Management*, 30(1), 233–256. <https://doi.org/10.1108/IJLM-01-2018-001>
38. Nguyen, T. H., Ngo, L. V., & Ruël, H. (2019). Logistics service quality: A critical review and research agenda. *The International Journal of Logistics Management*, 30(1), 233–256. <https://doi.org/10.1108/IJLM-01-2018-0018>
39. Nguyen, T. H., Nguyen, N. H., & Tran, M. D. (2019). The impact of logistics service quality on customer satisfaction and loyalty: Evidence from Vietnamese e-commerce. *Journal of Asian Finance, Economics and Business*, 6(3), 259–268. <https://doi.org/10.13106/jafeb.2019.vol6.no3.259>
40. Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 64(1), 12–40.
41. Peeraya, T., & Sawat, W. (2023). The relationship between air travel service quality and factors of the theory of planned behavior: Evidence from low-cost airlines in Thailand. *Sustainability*, 15(11), 8839. <https://doi.org/10.3390/su15118839>
42. Petrat, P. (2024, October 21). What is a questionnaire: Types of questionnaires in Research. Cint. <https://www.cint.com/blog/>

43. Raišys, S. J. (2022). METHODOLOGICAL ASPECTS OF CUSTOMER SATISFACTION SURVEYS: HOW IMPORTANT ARE RESPONDENT SELECTION CRITERIA? *Social Transformations in Contemporary Society*, 10(ISSN 2345-0126).
44. Rashid, Aamir & Rasheed, Dr. (2024). Logistics Service Quality and Product Satisfaction in E-Commerce. *SAGE Open*. 14. 10.1177/21582440231224250.
45. Riley, J. M., & Klein, R. (2019). How logistics capabilities offered by retailers influence millennials' online purchasing attitudes and intentions. *Young Consumers, ahead-of-print(ahead-of-print)*. <https://doi.org/10.1108/yc-12-2018-0889>
46. Siedlecki, S. L. (2020). Understanding descriptive research designs. *Clinical Nurse Specialist*, 34(1), 8–12. <https://doi.org/10.1097/NUR.0000000000000493>
47. Taherdoost, H. (2022, April). Designing a Questionnaire for a Research Paper: A Comprehensive Guide to Design and Develop an Effective Questionnaire.
48. Taherdoost, H. (2022). Sampling methods in research methodology: How to choose a sampling technique for research. *International Journal of Academic Research in Management (IJARM)*, 11(1), 1–16. <https://doi.org/10.2139/ssrn.3224205>
49. Wang, Y., Zhang, Y., & Wang, L. (2020). Logistics service quality and customer satisfaction in online shopping: The mediating role of perceived control. *Electronic Commerce Research and Applications*, 39, 100920. <https://doi.org/10.1016/j.elerap.2019.100920>
50. Williams, K. (2025, April 29). What are questionnaires? Benefits, types, and examples. *SurveySparrow*. <https://surveysparrow.com/blog/questionnaires/>
51. Yuen, K. F., Wang, X., & Wong, Y. D. (2018). The determinants of customers' intention to use smart logistics services: A study of e-commerce in China. *Transport Policy*, 66, 67–76. <https://doi.org/10.1016/j.tranpol.2018.03.001>
52. Zeithaml, V. A. (2000). Service quality, profitability, and the economic worth of customers: What we know and what we need to learn. *Journal of the Academy of Marketing Science*, 28(1), 67–85. <https://doi.org/10.1177/0092070300281007>