

DETERMINANTS OF CUSTOMER LOYALTY IN THE LOGISTICS SECTOR: THE MEDIATING ROLE OF CUSTOMER SATISFACTION

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ABSTRACT

The growth of e-commerce has put significant pressure on the performance of the logistics and supply chain industry in Indonesia, particularly in providing fast, secure, and reliable services. However, issues such as delivery delays, low information transparency, and inconsistent service quality still frequently impact customer satisfaction and loyalty. This study aims to analyze the influence of service quality on customer satisfaction and its impact on customer loyalty in the logistics sector. This study used a quantitative approach through a survey of 100 customers, with data analysis using Structural Equation Modeling–Partial Least Squares (SEM-PLS). The results show that service quality significantly influences customer satisfaction; service quality and customer satisfaction significantly influence customer loyalty; and customer satisfaction acts as a strong mediating variable in the relationship between service quality and customer loyalty. The novelty of this study lies in the integration of contextual indicators of Indonesian logistics services which including cost efficiency, timeliness, tracking accuracy, and shipment security into the SEM-PLS model. These findings provide strategic implications for logistics companies in improving service quality to build sustainable customer loyalty. Practically, the findings provide managerial guidance for logistics companies in prioritizing operational reliability, shipment security, tracking transparency, and cost-efficient service strategies to enhance customer satisfaction and sustain customer loyalty in an increasingly competitive logistics market.

Keywords: Logistics Service Quality; Customer Satisfaction; Customer Loyalty; Logistics Industry; SEM-PLS.

INTRODUCTION

The development of the logistics industry in Indonesia is showing an upward trend in line with the growth of national economic activity, trade expansion, and the growth of e-commerce. Logistics is no longer seen simply as a means of supporting the distribution of goods; it has become a strategic part of the supply chain that impacts the economy as a whole. (Bag et al., 2021). In an industry where competition is increasingly fierce, logistics companies need to be able to provide high-quality, reliable, timely and responsive services to customer needs in order to survive and win in business (Yaxu, 2021).

One of the most important factors influencing customer perceptions of logistics services is logistics service quality (LSQ). Service quality relates not only to delivery speed but also to the reliability of tracking systems, product security, ease of service interaction, and the company's ability to provide guarantees to customers (Chinomona, R., & Sandada, 2022a). Several studies show that superior service quality increases customer satisfaction, which in turn drives the development of sustainable customer loyalty (Mulcahy, R., Russell-Bennett, R., & Previte, 2021; Wetzal, P., & Hotmann, 2020). Even in the

context of industrial management in Indonesia, service quality and organizational factors have been shown to influence customer behavior and decision making (Soelistya et al., 2024).

Customer satisfaction is understood as customers' cognitive and emotional evaluation of the service experience they receive, especially when that experience meets or exceeds initial expectations (Kotler, P., & Ketler, 2022). In the logistics industry, which is based on long-term relationships, customer satisfaction is crucial because satisfied customers are more likely to repurchase, use the service more frequently, and recommend it to others (Restuputri et al., 2021). Several studies have shown that customer satisfaction serves as a mediating variable linking service quality and customer loyalty (Woo et al., 2021).

Customer loyalty is a vital asset for logistics companies, as loyal customers will continue to use the company's services, even when competition intensifies. Loyal customers not only help spread positive word of mouth about the company's business, but also help promote its reputation (Cambra-Fierro et al., 2021). In the Indonesian context, customer behavior in utilizing logistics services is influenced by service interactions, trust,

and consistent service usage experiences (Masyhudi et al., 2024). Freight forwarding companies serving a wide variety of customers must address the challenge of maintaining high service quality across the board, particularly in terms of on-time delivery, accurate tracking information, product security, and reliable operations. The competitive landscape is changing rapidly, so businesses need to assess the quality of their service and how it impacts customer satisfaction and loyalty (Restuputri, D. P., Indriani, T. R., & Masyhudi, 2021).

Several previous studies have analyzed the relationship between service quality, satisfaction, and customer loyalty in the service sector. However, most of these studies focused on the banking, retail, tourism, and e-commerce sectors, leaving few studies focused on the logistics industry in Indonesia (Wetzel, P., & Hotmann, 2020b). There are still inconsistencies in the findings regarding the direct impact of service quality on customer loyalty, especially when customer satisfaction serves as a mediating variable (Nugroho et al., 2020). In a national context, research on the role of customer satisfaction as a mediating factor in the relationship

between service quality and customer loyalty in the logistics industry requires further development (Masyhudi et al., 2024).

Thus, the novelty of this research lies in testing the role of customer satisfaction as a mediating variable in the relationship between service quality and customer loyalty in the logistics industry in Indonesia using The SEM-PLS approach based on actual customer data.

Although previous studies have confirmed the importance of service quality in shaping customer satisfaction and loyalty, empirical evidence within the Indonesian logistics sector remains limited. Most existing studies focus on retail, banking, tourism, or e-commerce services, while logistics-specific investigations are relatively scarce. Moreover, the rapid digitalization of logistics operations and increasing customer expectations regarding transparency and delivery reliability create a need to re-examine the service quality–satisfaction–loyalty relationship in the contemporary logistics environment. Therefore, this study contributes to the literature by providing evidence from the Indonesian logistics industry using context-specific service quality indicators.

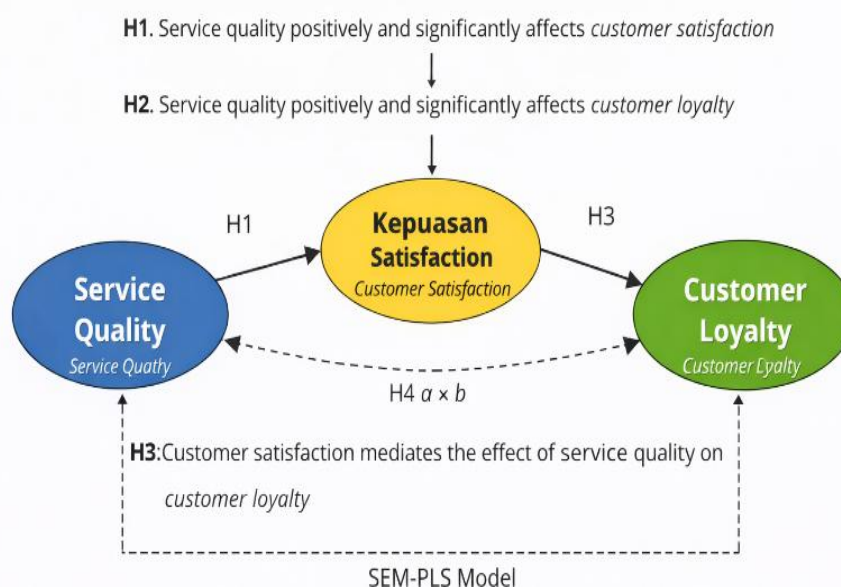


Figure 1. Conceptual Research Model

Figure 1 illustrates that service quality directly influences customer satisfaction and loyalty, as well as through the mediating role of customer satisfaction. Based on this research, this study formulates the following hypothesis:

H1: Service quality has a positive and significant influence on customer satisfaction.

Service quality can also directly influence customer loyalty. Customers who perceive a company's service as high-quality, consistent, and

reliable are more likely to remain loyal to the company over the long term (Cambra-Fierro et al., 2021). Empirical studies in the logistics services and industrial management sectors show a consistent relationship between service quality and customer loyalty (Soelistya et al., 2024). Based on the description above, the second hypothesis is proposed:

H2: Service quality has a positive and significant influence on customer loyalty.

Conversely, customer satisfaction is an important factor in building customer loyalty. Satisfied customers are more likely to make repeat purchases and provide positive recommendations to the company (Restuputri & Masyhudi 2021; Woo et al., 2021). Several studies in the service sector show that customer satisfaction has a positive and significant influence on customer loyalty (Nugroho et al., 2020). Thus, the third hypothesis can be formulated as follows:

H3: Customer satisfaction has a positive and significant influence on customer loyalty.

Customer satisfaction not only directly influences loyalty but also serves as a mediating variable. Good service quality Customer satisfaction not

only directly influences loyalty but also serves as a mediating variable. Good service quality initially increases customer satisfaction and ultimately drives customer loyalty (Mulcahy R., Russell-Bennett, R., & Previte, 2021). This mediation relationship model is often found in research in the service sector, including logistics services and industrial management (Masyhudi et al., 2024). Based on this, the fourth hypothesis is proposed as follows:

H4: Customer satisfaction mediates the effect of service quality on customer loyalty.

RESEARCH METHODS

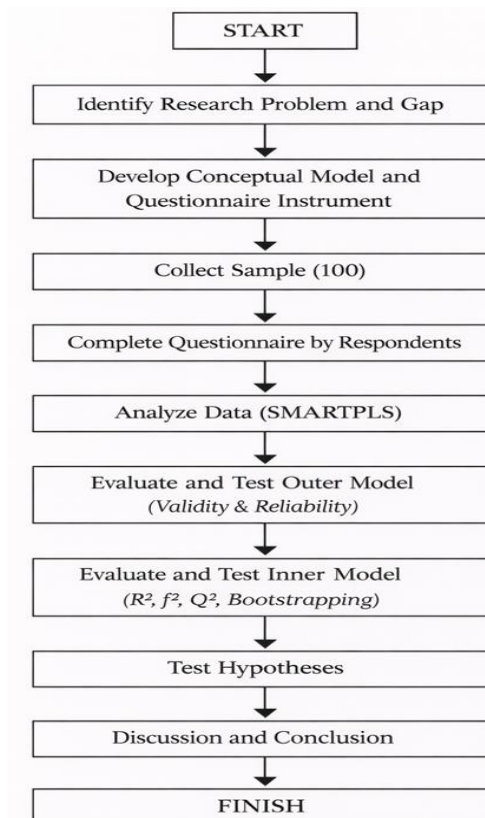


Figure 2. Research Flowchart

This study uses a quantitative approach with a causal associative research design that aims to empirically analyze the relationships between research variables. Data for this study were collected by distributing questionnaires to customers. We chose a quantitative approach because it can provide an objective picture of how customers perceive service quality, satisfaction, and loyalty (Hair et al., 2022).

Research Population and Sample

The population in this study consists of all of the company's customers. The sampling technique used was simple random sampling, as each member of the population has an equal chance of becoming a research respondent. The simple random sampling technique was chosen in

accordance with quantitative practices commonly used in industrial and logistics research (Kang, E., & Lee, 2021), with testing instruments that use valid and reliable constructs (Lestari, P., & Nugroho, 2023). The number of samples used is 105. This number meets the minimum sample size requirements for Partial Least Squares–Structural Equation Modeling (PLS-SEM) analysis, which typically requires at least 10 times the largest number of indicators in a single construct (Hair et al., 2022).

The sample size of 105 respondents was considered adequate based on the recommendations of (Hair et al., 2022) for PLS-SEM analysis. According to the 10-times rule, the minimum sample size should be at least ten times

the maximum number of structural paths directed at a latent construct. In the present model, the largest number of incoming paths is two, resulting in a minimum requirement well below the obtained sample size. Furthermore, recent PLS-SEM literature emphasizes that models with relatively simple structures and strong effect sizes can achieve sufficient statistical power with samples ranging from 100 to 150 observations. Therefore, the sample size used in this study is considered adequate for estimating the proposed model and testing the research hypotheses.

Types, Data Sources and Research Instruments

The data used are primary data obtained by distributing questionnaires to respondents. The research instrument was a structured questionnaire with a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). This scale is the most commonly used in consumer behavior and service management research across various contexts, including logistics services (Hair et al., 2022). The variables studied consist of three main constructs: service quality (X), customer satisfaction (Y), and customer loyalty (Z). These three constructs are measured using indicators adapted from previous research in the field of service marketing and logistics, then adapted to the current research context to ensure content relevance and construct validity (Masudi et al., 2020; Wetzell, P., & Hotmann, 2020). Service quality variables are measured using six indicators: on-time delivery (X1), security of goods during delivery (X2), and the company's ability to adapt to transportation modes (X3), accuracy of tracking information (X4), alignment of delivery schedules with promises (X5), and cost-effectiveness of services without sacrificing quality (X6). These indicators have been widely used in research on logistics service quality because they are considered to represent the dimensions of reliability, responsiveness, assurance, and efficiency in logistics services (Chinomona, R., & Sandada, 2022; Masudin et al., 2020). Customer satisfaction variables are measured using six indicators: suitability of service to customer expectations (Y1), completeness of service facilities and support (Y2), customer tendency to use the service again (Y3), willingness to recommend the service to others (Y4), customer emotional loyalty to the company (Y5), and customer determination not to switch to another service provider (Y6). These indicators reflect the concept of Satisfaction as a cognitive-emotional evaluation by customers of their service experience, which further influences repeat behavior and customer advocacy (Restuputri et al., 2021).

For example, customer loyalty is measured by five indicators: how satisfied customers are with the service they receive (Z1), how emotionally connected they are to the company (Z2), how much they trust the quality of the service (Z3), how easy it is for them to do business with the company (Z4), and how good they think the service is and how much they want to continue using it (Z5). These indicators reflect loyalty as a customer's commitment to continue using a service over the long term, whether because of satisfaction, trust, or emotional closeness to the company (Cambra-Fierro et al., 2021).

Therefore, all variable indicators in this study were designed based on theoretical constructs that have been empirically validated in previous studies, ensuring that the research instrument accurately and consistently measures customer perceptions of service quality, satisfaction, and loyalty.

Data Collection Techniques

Data collection techniques included distributing questionnaires to respondents, conducting limited field observations, and reviewing literature related to the research topic. The survey method was chosen because it is an efficient way to obtain a large amount of customer perception data (Sekaran, U., & Bougie, 2020).

Data Analysis Techniques

Data were analyzed using Structural Equation Modeling–Partial Least Square (SEM-PLS) with the help of SmartPLS 3.0 software. The PLS method was chosen because it can be used on relatively small sample sizes, does not require normal data distribution, is suitable for predictive research models, and can test direct and indirect relationships between variables (Hair et al., 2022); (Sarstedt et al., 2022).

Table 1. presents a descriptive overview of the profile of the research respondents, consisting of corporate customers. The descriptive analysis results indicate that the majority of respondents are in the productive age group and are active users of logistics services. This indicates that respondents have sufficient experience in assessing service quality, satisfaction, and customer loyalty.

Measurement Model (Outer Model)

Measurement model testing is carried out to assess the validity and reliability of the indicators.

- a. Convergent Validity. Judging from the *factor loading* ≥ 0.70 and *Average Variance Extracted* ($AVE \geq 0.50$), indicators with loading values below the tolerance limit are considered for elimination (Hair & Sarstedt, 2022).
- b. Discriminant Validity. Tested using the Fornell–Larcker criteria and cross-loading, with the

requirement that the loading indicator value on a construct is higher than the other constructs (Sarstedt & Hair, 2022).

- c. Construct Reliability. Assessed using Composite Reliability ≥ 0.70 and Cronbach's Alpha ≥ 0.70 (Hair et al., 2022).

The relationship between variables is considered

significant if the t-statistic is greater than or equal to 1.96 or the p-value is less than or equal to 0.05 at a significance level of 5% (Sarstedt et al., 2022). In addition, the Q-Square predictive relevance value is calculated to assess the model's ability to predict endogenous variables. A Q² value

Structural Model (Inner Model)

The structural model was tested by examining the R-Square value, path coefficient value, t-statistic value (bootstrapping), and p-value.

greater than 0 indicates good predictive relevance (Hair et al., 2022).

RESEARCH RESULTS

Descriptive Analysis

Table 1. Respondent Profile

1. Demographic Characteristics by Age

Age	Number of respondent	Percentage (%)
17-20	21	20
21-30	39	37
31-40	28	27
≥ 40	17	16
Total	105	100

2. Demographic Characteristics by Gender.

Gender	Number of respondent	Percentage (%)
Male	16	15
Female	89	85
Total	105	100

Source: Processed data (2025)

Summary of Hypothesis Testing Results

To facilitate interpretation of the structural analysis results, a summary of the hypothesis testing is presented in Table 2. Table 2 summarizes the relationships between the latent variables tested in the research model, including path coefficients, t-statistics, p-values, and the decision to accept the hypothesis.

Based on Table 2, all research hypotheses are supported at a 5% significance level. Service quality has a positive and significant effect on

customer satisfaction (H1 supported), as well as a direct positive effect on customer loyalty hypothesis testing is presented in Table 2. Table 2 summarizes the relationships between the latent variables tested in the research model, including path coefficients, (H2 supported). Customer satisfaction also significantly influences customer loyalty (H3 supported). Moreover, customer satisfaction plays a significant mediating role in the relationship between service quality and customer loyalty (H4 supported), confirming.

Table 2. Hypothesis Testing Result

Hypothesis	Relations	Coefficient	t-Statistik	p-Value	Result
H1	$X \rightarrow Y$	0,959	136,853	0,000	Supported
H2	$X \rightarrow Z$	0,410	3,120	0,002	Supported
H3	$Y \rightarrow Z$	0,554	4,369	0,000	Supported
H4	$X \rightarrow Y \rightarrow Z$	0,531	4,357	0,000	Supported

Source: Processed data (2025)

Based on Table 2, all research hypotheses are supported at a 5% significance level. Service quality has a positive and significant effect on customer satisfaction (H1 supported), as well as a direct positive effect on customer loyalty (H2 supported). Customer satisfaction also significantly influences customer loyalty (H3 supported). Moreover, customer satisfaction plays a significant

mediating role in the relationship between service quality and customer loyalty (H4 supported), confirming the central role of satisfaction as a psychological mechanism linking service performance to long-term loyalty. These results indicate that service quality has a strategic role in shaping customer satisfaction and loyalty, both directly and through customer satisfaction

mediation mechanisms. This brief presentation aims to provides a comprehensive overview of the

main results of the study without having to explore all the SEM-PLS outputs separately (Figure 3).

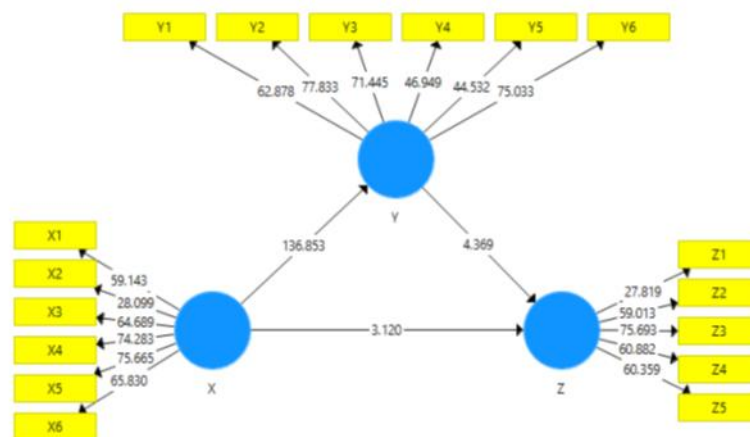


Figure 3. Hypothesis Testing Path Diagram (2025)

Evaluation of Measurement Model (Outer Model)

In the measurement model testing, all research variable indicators had loading factor values above 0.70 and AVE values above 0.50. This indicates that all indicators have good convergent validity. Composite Reliability and Cronbach's Alpha values were also above 0.70, thus all constructs were declared reliable. Furthermore, the Fornell-Larcker test results showed that the AVE root of each construct was higher than the correlation between variables, thus fulfilling discriminant validity. These findings indicate that all research instruments met the criteria for convergent validity, discriminant validity, and internal reliability.

Using this method, the existing indicators can statistically accurately describe the constructs of service quality, customer satisfaction, and customer loyalty. These results strengthen the suitability of using context-based indicators from Indonesian logistics to assess service quality, as recommended in the Logistics Service Quality (LSQ) literature. In a national context, the findings of this study align with research in industrial management showing that organizational and service variables influence customer behavior (Soelistya et al., 2024), and studies that highlight the role of promotions and service experiences in shaping customer decisions (Masyhudi et al., 2024). Thus, this study strengthens the literature showing that service quality has direct and indirect implications on customer loyalty through the formation of customer satisfaction.

Structural Model Evaluation (Inner Model)

In the structural model test, the R-Square value indicates that variations in customer satisfaction can be substantially explained by service quality, and variations in customer loyalty

can also be strongly explained by service quality and customer satisfaction. The path coefficient value indicates that service quality has a positive and significant effect on customer satisfaction, so that the better the service quality, the higher the customer satisfaction. The effect of service quality on customer loyalty is also significant, which means that customers who experience quality service tend to build loyalty to the company. Furthermore, customer satisfaction has been shown to have a positive and significant impact on customer loyalty. These results indicate that satisfaction is a key determinant in building customer loyalty in logistics services.

The results of the structural model test show an R-square value of 0.919 for the customer satisfaction construct and 0.912 for the customer loyalty construct. This value is included in the very strong category, which indicates that service quality is able to explain most of the variations in customer satisfaction, and simultaneously service quality and customer satisfaction explain more than 90% of the variations in customer loyalty. The high R-square value indicates that the research model has a very good ability to explain customer behavior in the logistics sector, especially in the context of logistics companies in Indonesia.

In a national context, the results of this study are in line with research in industrial management which shows that organizational and service variables influence customer behavior (Soelistya et al., 2024), and research that confirms the role of promotions and service experiences in influencing customer decisions (Masyhudi et al., 2024). Therefore, this study strengthens the literature showing that service quality has direct and indirect implications on customer loyalty through the formation of customer satisfaction.

Predictive Relevance (Q-Square).

The *Q-square predictive relevance* value obtained was 0.837, which is greater than zero. This result indicates that the model has excellent predictive ability, meaning that the model not only explains the relationships between variables but is also relevant in predicting logistics customer loyalty behavior.

Hypothesis Testing and Discussion

The Influence of Service Quality on Customer Satisfaction.

The results of the hypothesis testing indicate that service quality has a positive and significant effect on customer satisfaction, with a *t-statistic* of 136.853 and a *p-value* of 0.000. This finding can be explained through Expectancy Disconfirmation (Oliver, 1980; Oliver, 1997), which posits that customer satisfaction is formed through the comparison between expected and perceived service performance. When logistics service performance, such as delivery timeliness, shipment security, tracking accuracy, and cost efficiency, meets or exceeds customer expectations, positive disconfirmation occurs, leading to higher levels of customer satisfaction. Therefore, the significant influence of service quality on customer satisfaction observed in this study is theoretically consistent with the propositions of Expectancy Disconfirmation Theory.

The Influence of Service Quality on Customer Loyalty.

The direct effect of service quality on customer loyalty was also proven significant, with a *t-statistic* of 3.120 and a *p-value* of 0.002. These results indicate that good service quality can encourage customers to continue using a company's services. However, compared to the effect of service quality on customer satisfaction, the direct effect on loyalty is relatively weaker. This finding indicates that customer loyalty is not formed instantly through service quality alone, but rather requires a consistent and ongoing experience of satisfaction. In other words, service quality is an important prerequisite, but not sufficient, to build long-term loyalty without the support of customer satisfaction.

The Influence of Customer Satisfaction on Customer Loyalty.

The test results show that customer satisfaction has a positive and significant effect on customer loyalty, with a *t-statistic* of 4.369 and a *p-value* of 0.000. This finding confirms that customer satisfaction is a key predictor of loyalty in the logistics industry. Satisfied customers tend to reorder, recommend services to others, and show a higher tolerance for minor service disruptions. The highest indicator of satisfaction in this study was

the conformity of service to customer expectations, which strengthens the argument that a positive service experience is the main foundation of customer loyalty.

The Mediation Role of Customer Satisfaction.

The indirect effect test shows that customer satisfaction significantly mediates the relationship between service quality and customer loyalty, with a *t-statistic* of 4.357 and a *p-value* of 0.000. These results prove that service quality does not directly shape customer loyalty, but must first create satisfaction as the main psychological mechanism. Thus, customer satisfaction acts as a mediating variable that strengthens the influence of service quality on loyalty. These findings provide an important empirical contribution in the Indonesian logistics context, while clarifying the strongest relationship path in the research model, namely from service quality to customer satisfaction, and then to customer loyalty.

The results of the mediation analysis indicate that customer satisfaction acts as a mediating variable in the relationship between service quality and customer loyalty. Thus, improving service quality not only directly influences customer loyalty but also indirectly through increased customer satisfaction. This finding aligns with previous research showing that customer satisfaction acts as a psychological mechanism linking service experience to customer loyalty behavior (Nugroho et al., 2020).

In a national context, the results of this study are in line with research in industrial management which shows that organizational and service variables influence customer behavior (Soelistya et al., 2024), and research that confirms the role of promotions and service experiences in influencing customer decisions (Masyhudi et al., 2024). Therefore, this study strengthens the literature which shows that service quality has a direct and indirect effect on customer loyalty through the formation of customer satisfaction.

Brief Theoretical Implications

Theoretically, this study adds strong evidence to the Expectancy Disconfirmation Theory and the concept of Logistics Service Quality in the Indonesian logistics industry. This research demonstrates that customer satisfaction is a key mechanism bridging service quality and customer loyalty, thus enriching the logistics service-based customer loyalty model.

DISCUSSION

This study provides strong empirical evidence that logistics service quality is a critical determinant of customer satisfaction and loyalty in the Indonesian logistics sector (Abdullah et al.,

2025). Consistent with Expectancy Disconfirmation Theory (Felix, 2025) (Schiebler et al., 2026), customers experience higher satisfaction when perceived service performance—particularly in terms of delivery timeliness, shipment security, tracking accuracy, and cost efficiency—meets or exceeds expectations (Abdullah, 2024). These findings align with prior studies emphasizing the importance of logistics service quality in shaping customer evaluations and behavioral intentions (Abdullah et al., 2025).

The significant direct effect of service quality on customer loyalty indicates that reliable and consistent logistics operations can foster repeat usage and long-term relationships (Khahan et al., 2025). However, the relatively stronger effect of service quality on customer satisfaction compared to its direct effect on loyalty suggests that loyalty is not formed instantaneously (Vinod et al., 2021). Instead, it emerges through accumulated positive experiences that generate satisfaction over time (Ayelet et al., 2020). This finding helps explain inconsistencies in previous studies regarding the direct service quality–loyalty relationship and reinforces the mediating role of customer satisfaction.

The mediation analysis reveals that customer satisfaction is the most influential pathway through which service quality translates into customer loyalty (Anabela, Arnaldo, 2022). This result underscores the theoretical contribution of the study by empirically validating satisfaction as a key intervening variable within the logistics context (Widji & Sunardi, 2024), particularly in an emerging market such as Indonesia. By integrating context-specific logistics indicators into the SEM-PLS framework, this study extends prior research that predominantly focused on banking, retail, or tourism sectors.

From a critical perspective, the findings highlight that logistics companies cannot rely solely on operational excellence to secure customer loyalty (Ejuma, Ngodoo, 2024; Jiju, Raja, 2023). Instead, they must manage customer perceptions holistically by ensuring that operational performance consistently delivers satisfaction (Holloway, 2024; Ia, 2025). This insight is especially relevant in the context of intensified competition driven by e-commerce growth and increasing customer expectations for transparency and reliability (Ilma, 2025).

CONCLUSION

Based on the results and discussion, this study concludes that logistics service quality has a positive and significant effect on customer

satisfaction and customer loyalty. Customer satisfaction also exerts a strong positive influence on customer loyalty and serves as a significant mediating variable in the relationship between service quality and loyalty. These findings confirm that improving service quality is a strategic imperative for logistics companies seeking to build sustainable customer satisfaction and long-term customer loyalty in the logistics industry.

The findings further demonstrate that customer satisfaction plays a crucial role as an explanatory mechanism linking service quality to loyalty. This indicates that improvements in logistics service quality—particularly in terms of delivery reliability, shipment security, information accuracy, tracking transparency, and cost efficiency—will first be reflected in higher customer satisfaction, which subsequently strengthens customer loyalty.

The novelty of this research lies in its integration of logistics-specific service quality indicators relevant to the Indonesian context into a comprehensive SEM-PLS model. By empirically validating customer satisfaction as a mediating variable using data from an Indonesian logistics company, this study provides a more contextually grounded understanding of loyalty formation in the national logistics industry.

Research Implications

From a theoretical perspective, this study contributes to the development of service marketing and logistics management literature by reinforcing the application of Expectancy Disconfirmation Theory within the logistics sector, particularly in an emerging economy context. The findings provide empirical evidence that customer satisfaction is the primary mechanism through which service quality influences customer loyalty, thereby strengthening prior conceptual models that emphasize indirect rather than purely direct effects.

From a practical perspective, the results imply that logistics companies should prioritize continuous improvements in operational reliability, delivery timeliness, information accuracy, shipment security, and customer-oriented service processes. Investments in these areas are expected to enhance customer satisfaction, which in turn fosters repeat usage, long-term loyalty, and positive word-of-mouth. Managers in the logistics industry can use these findings as a basis for designing service improvement strategies that are aligned with customer expectations and competitive market demands.

Suggestions for Future Research

Despite its contributions, this study has several limitations. First, the research was conducted within a single logistics company,

which limits the generalizability of the findings to other logistics service providers. Second, the relatively limited sample size of 100 respondents may not fully capture the diversity of customer behavior in the broader logistics market.

Based on these limitations, future research is encouraged to expand the research model by incorporating additional variables such as trust, perceived value, switching barriers, or digital service quality to enrich the explanation of customer loyalty. Comparative studies involving multiple logistics companies or different regions in Indonesia would enhance the external validity of the findings. Furthermore, longitudinal research designs are recommended to capture dynamic changes in customer satisfaction and loyalty over time, as well as to examine potential moderating factors such as delivery urgency, digital literacy, or service customization.

Acknowledgements

The authors would like to express their sincere gratitude to all respondents who participated in this study and to the logistics company that facilitated data collection. Appreciation is also extended to colleagues and reviewers whose constructive feedback contributed to the improvement of this scientific work.

BIBLIOGRAPHY

- Abdullah. (2024). *Tracking System Accuracy, Delivery Speed And Timeliness Of Updates Affect The Customer Experience In E-Commerce*.
- Abdullah, Mohammad, Wan, customer, & cross-border. (2025). *An empirical study on logistic service quality, customer satisfaction, and cross-border repurchase intention*.
- Anabela, Arnaldo, & omer. (2022). *Service quality, customer satisfaction and customer value: holistic determinants of loyalty and word-of-mouth in services*.
- Asli. (2020). *Satisfaction vs experienced utility: current issues and opportunities*.
- Ayelet, Anat, Gal, & N. (2020). *How does the emotional experience evolve? Feeling generation as evidence accumulation*.
- Bag, S., Gupta, S., & Luo, Z. (2020). Examining the role of logistics 4.0 enabled dynamic capabilities on firm performance. *The International Journal of Logistics Management*, 31(3), 607–628.
- Cambra-Fierro, J., Gao, L. X., Melero-Polo, I., & Trifu, A. (2021a). How do firms handle variability in customer experience? A dynamic approach to better understanding customer retention. *Journal of Retailing and Consumer Services*, 61, 102578.
- Cambra-Fierro, J., Gao, L. X., Melero-Polo, I., & Trifu, A. (2021b). How do firms handle variability in customer experience? A dynamic approach to better understanding customer retention. *Journal of Retailing and Consumer Services*, 61, 102578.
- Chinomona, R., & Sandada, M. (2022a). Service quality, satisfaction and loyalty in logistics services. *Journal of Transport and Supply Chain Management*, 16, 1–10.
- Chinomona, R., & Sandada, M. (2022b). Service quality, satisfaction and loyalty in logistics services. *Journal of Transport and Supply Chain Management*, 16, 1–10.
- Ejuma, Ngodoo, & G. (2024). *Operational excellence in SMEs: A conceptual framework for optimizing logistics and service delivery systems*.
- Felix, N. &. (2025). *Expectancy-disconfirmation and consumer satisfaction: A meta-analysis*.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., & Danks, N. (2022a). Partial least square structure equation modeling (PLS-SEM) using SmartPLS 4. *Springer*.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., & Danks, N. (2022b). Partial least square structure equation modeling (PLS-SEM) using SmartPLS 4. *Springer*.
- Holloway. (2024). *The Interplay of Supply Chain Integration and Marketing Strategies in Achieving Customer Satisfaction*.
- Ia. (2025). *Enhancing Operational Efficiency and Guest Satisfaction in Hotel Management: A Strategic Approach*.
- Ilma. (2025). *Building Consumer Trust Through Information System Integration in E-Commerce*.
- Ivanov, D. (2021). Digital supply chain management and technology to enhance resilience by building and using end-to-end visibility during the COVID-19 pandemic.

IEEE Transactions on Engineering Management, 71, 10485–10495.

of Tanjung Bias Beach. *Jurnal Manajemen Industri Dan Logistik*, 8(1), 113–125.

Jiju, Raja, & G. (2023). *Raja, & Guilherme. (2023). The application of operational excellence methodologies in logistics: a systematic review and directions for future research.*

Kang, E., & Lee, H. (2021). Employee compensation strategy as sustainable competitive advantage for HR education practitioners. *Sustainability*, 13(3), 1049.

Khahan, Kaptun, Nutt, Yotsaphat, Bowei, technology, transportation, & production. (2025). *The influence of cost on customer satisfaction in e-commerce logistics: Mediating roles of service quality, technology usage, transportation time, and production condition.*

Kotler, P., & Ketler, K. L. (2022). *Marketing management* (16th (ed). *Pearson*.

Lestari, P., & Nugroho, T. (2023). Analisis pengaruh kepuasan kerja dan budaya organisasi terhadap komitmen organisasi pada industri logistik. *Jurnal Manajemen Industri Dan Logistik*, 7(3), 45–60.

Masudin, I., Safitri, N. T., Restuputri, D. P., Wardana, R. W., & Amallynda, I. (2020a). ct of humanitarian logistics service quality to customer loyalty using Kansei engineering: Evidence from Indonesian logistics service providers. *Cogent Business & Management*, 7(1), 1826718.

Masudin, I., Safitri, N. T., Restuputri, D. P., Wardana, R. W., & Amallynda, I. (2020b). ct of humanitarian logistics service quality to customer loyalty using Kansei engineering: Evidence from Indonesian logistics service providers. *Cogent Business & Management*, 7(1), 1826718.

Masyhudi, L., Utama, L. S., Chelsania, N. P. A., Susanty, S., & Murianto, M. (2024a). The effect of social media promotion and word of mouth on the decision to visit the attraction of Tanjung Bias Beach. *Jurnal Manajemen Industri Dan Logistik*, 8(1), 113–125.

Masyhudi, L., Utama, L. S., Chelsania, N. P. A., Susanty, S., & Murianto, M. (2024b). The effect of social media promotion and word of mouth on the decision to visit the attraction

Mulcahy, R., Russell-Bennett, R., & Previte, J. (2021a). Creating loyal prosocial transformative service consumers: A proposed model with direct and indirect effects. *Australasian Marketing Journal*, 29(1), 41–53.

Mulcahy, R., Russell-Bennett, R., & Previte, J. (2021b). Creating loyal prosocial transformative service consumers: A proposed model with direct and indirect effects. *Australasian Marketing Journal*, 29(1), 41–53.

Nugroho, S., Kempa, S., & Panjaitan, T. W. S. (2020a). Logistics service quality and customer satisfaction to customer retention on rice producer industry In SHS Web of Conferences. *EDP Sciences*, 76, 01048.

Nugroho, S., Kempa, S., & Panjaitan, T. W. S. (2020b). Logistics service quality and customer satisfaction to customer retention on rice producer industry In SHS Web of Conferences. *EDP Sciences*, 76, 01048.

Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research*, 17(4), 460–469.
<https://doi.org/10.1177/002224378001700405>

Oliver, R. L. (1997). *Satisfaction: A behavioral perspective on the consumer*. McGraw-Hill.

Restuputri, D. P., Indriani, T. R., & Masyhudi, I. (2021a). The effect of logistic service quality on customer satisfaction and loyalty using kansei engineering during the COVID-19 pandemic. *Cogent Business & Management*, 8(1), 1906492.

Restuputri, D. P., Indriani, T. R., & Masyhudi, I. (2021b). The effect of logistic service quality on customer satisfaction and loyalty using kansei engineering during the COVID-19 pandemic. *Cogent Business & Management*, 8(1), 1906492.

Sarstedt, M., Ringle, C. M., & Hair, J. F. (2022a). Partial least squares structural equation modeling. *Journal of Family Business Strategy*, 13(1), 100–430.

- Sarstedt, M., Ringle, C. M., & Hair, J. F. (2022b). Partial least squares structural equation modeling. *Journal of Family Business Strategy*, 13(1), 100–430.
- Schiebler, T., Lee, N., & Brodbeck, F. C. (2026). *Expectancy-disconfirmation and consumer satisfaction: A meta-analysis. J. of the Acad. Mark.* 91–112.
<https://doi.org/https://doi.org/10.1007/s11747-024-01078-x>
- Sekaran, U., & Bougie, R. (2020). Research methods for business (8th ed.). Wiley.
- Soelistya, D., Warindra, A. S., Desembrianita, E., Purwanti, T., & Suhardi, S. (2024a). The role of competence on performance leadership style as an intervening variable. *Jurnal Manajemen Industri Dan Logistik*, 8(1), 17–31.
- Soelistya, D., Warindra, A. S., Desembrianita, E., Purwanti, T., & Suhardi, S. (2024b). The role of competence on performance leadership style as an intervening variable. *Jurnal Manajemen Industri Dan Logistik*, 8(1), 17–31.
- Vinod, Ajay, Renu, & H. (2021). *An integrative approach to the nexus of brand loyalty and corporate social responsibility.*
- Wetzel, P., & Hotmann, E. (2020a). No Toward a multi-sided model of service quality for logistics service providers. *Administrative Sciences*, 10(4), 79.
- Wetzel, P., & Hotmann, E. (2020b). No Toward a multi-sided model of service quality for logistics service providers. *Administrative Sciences*, 10(4), 79.
- Widji & Sunardi. (2024). *The mediating role of customer satisfaction in the effect of perceived enjoyment on customer Trust in Online Investment Application.*
- Woo, H., Kim, S. J., & Wang, H. (2021a). Understanding the role of service innovation behavior o. *Industrial Marketing Management*, 93, 41–51.
- Woo, H., Kim, S. J., & Wang, H. (2021b). Understanding the role of service innovation behavior o. *Industrial Marketing Management*, 93, 41–51.
- Yaxu, Y. (2021). Comprehensive evaluation of logistics enterprise competitiveness based on SEM model. *Journal of Intelligent & Fuzzy Systems*, 40(4), 6469–6479.