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Examining the effects of service and product quality on customer loyalty through satisfaction: Evidence from a logistics provider in Ho Chi Minh city

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Abstract

This study aims to determine the effect of service quality on customer satisfaction, the effect of product quality on customer satisfaction, the effect of customer satisfaction on customer loyalty, the effect of service quality on customer loyalty, the effect of product quality on customer loyalty, the effect of service quality on customer loyalty through customer satisfaction, and the effect of product quality on customer loyalty through customer satisfaction. This research was conducted at Gemadept Logistics, Ho Chi Minh City, involving 98 customers. Data analysis used path analysis with the Partial Least Square (PLS) model and t-test. The findings reveal that service quality does not significantly affect customer loyalty, while product quality and customer satisfaction do. Both service quality and product quality significantly impact customer satisfaction. However, customer satisfaction does not play a mediating role in the relationship between service/product quality and loyalty.

Keywords: Service quality, product quality, customer satisfaction, customer loyalty

Introduction

In recent years, the logistics and transportation sector in Vietnam has increased significantly, especially in major economic hubs like Ho Chi Minh City (Tran Mai Ngoc, 2024). This expansion has been largely fueled by the booming e-commerce industry, international trade agreements, and the increasing need for integrated supply chain solutions (Pham Van Hong and Nguyen Thanh Thuy, 2020) ^[15]. Among the key players in this sector, Gemadept Logistics, a subsidiary of Gemadept Corporation, stands out as one of the leading providers of logistics services in Vietnam. With extensive experience in port operations, inland container depots, warehousing, and multimodal transportation, Gemadept has been a critical part of Vietnam's logistics infrastructure, serving both domestic and international clients.

As competition intensifies and customer expectations continue to evolve, logistics providers must ensure that their service delivery meets or exceeds customer expectations. Customers today demand not only speed and cost-efficiency but also reliability, transparency in tracking, and responsive customer service (Zadajali and Ullah, 2024) ^[1]. In this context, service quality and product quality (i.e., physical assets like fleet condition, IT systems, and delivery reliability) become essential factors influencing customer satisfaction, which in turn is closely tied to customer loyalty (Qiao and Rojniruttikul, 2025) ^[11].

Recent internal observations at Gemadept Logistics have shown a variation in customer satisfaction levels, raising questions about the impact of service-related variables on long-term loyalty. Although the company has invested heavily in infrastructure and digital transformation, it is crucial to understand how these efforts translate into perceived quality from the customer's perspective. Therefore, this study aims to examine the influence of service quality and product quality on customer satisfaction and their combined effect on customer loyalty, specifically within the operational context of Gemadept Logistics in Ho Chi Minh City. The findings will help provide actionable insights for service improvement and customer retention strategies.

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Literature Review

Service Quality

Service quality plays a foundational role in shaping customers' perceptions of logistics providers and is widely regarded as a determinant of customer satisfaction and loyalty. As defined by Kotler and Keller (2012) ^[6], marketing is a societal process through which individuals and groups acquire what they need and want by creating, offering, and exchanging valuable products and services. Within this framework, service quality is not merely about delivering a service, but about how the service is perceived, experienced, and evaluated by customers.

The multidimensional nature of service quality has been emphasized in various studies, with the SERVQUAL model being one of the most commonly adopted frameworks (Parasuraman *et al.*, 1988) ^[10]. According to this model, service quality encompasses several interrelated dimensions. Tangibility refers to the physical aspects that support service delivery, such as the quality of facilities, technological equipment, and the professional appearance of employees. These elements contribute to a customer's first impression and are particularly important in logistics, where operational visibility through warehouses, trucks, and tracking systems shapes trust.

Reliability involves the company's ability to consistently deliver the promised service accurately and on time. Responsiveness reflects the company's willingness and speed in helping customers, providing timely information, and resolving issues. Assurance encompasses the competence, courtesy, and credibility of employees, which influence customer trust in the company. Finally, empathy refers to the company's ability to understand and respond to individual customer needs (Parasuraman *et al.*, 1988; Zeithaml *et al.*, 1990) ^[10, 17].

Product Quality

Product quality, though traditionally associated with physical goods, also applies to service-based industries, including logistics, where it pertains to the functional and technical attributes that support service performance. In the logistics sector, "product" includes assets such as transport vehicles, IT systems, warehousing facilities, and the supporting infrastructure that enable service delivery. Kotler and Armstrong (2012) ^[6-7] define product quality as the ability of a product to perform its intended function, which involves reliability, durability, performance, and ease of use. Performance quality refers to the effectiveness with which the product's core functions are executed. High-performing logistics companies offer accurate order fulfillment, real-time tracking, and predictable lead times, all of which enhance customer experience (Kotler & Keller, 2012) ^[6-7]. Conformance quality, or the consistency of service performance across transactions, ensures standardized outputs and reduces customer uncertainty. Durability and reliability, measured by the operational lifespan and stability of logistics assets, are also essential in reducing service failures and increasing efficiency.

Ease of maintenance and repair ensures continuous operation of fleets and equipment with minimal disruption. Finally, style and branding can influence customer perceptions of professionalism and credibility. A visually appealing and technologically advanced logistics infrastructure contributes positively to the overall perception of quality (Kotler & Keller, 2012; Garvin, 1987) ^[6-7].

Customer Satisfaction

Customer satisfaction is a psychological and emotional evaluation that results from comparing expected service performance with actual experiences. It is considered one of the most important outcomes in service marketing because of its strong link to future behavioral intentions (Oliver, 1997) ^[8]. When customers perceive that a service exceeds their expectations, they tend to feel delighted and are more likely to become repeat clients. Conversely, unmet expectations may lead to dissatisfaction and defection.

Tjiptono (2012) ^[13] defines customer satisfaction as a customer's emotional response arising from the perceived performance of a product or service relative to expectations. Satisfaction is shaped by multiple service encounters, particularly in logistics, where timely deliveries, tracking transparency, service responsiveness, and effective problem-solving play central roles. From a cognitive perspective, satisfaction depends on perceived service quality and expectation confirmation. Behaviorally, it is reflected in continued usage, recommendations, and willingness to pay premium prices (Zeithaml *et al.*, 1996; Fornell, 1992) ^[16, 3]. Measurement of satisfaction involves assessing both the customer's general perception and specific criteria such as repurchase intention, likelihood to recommend, and perceived service equity. Dissatisfaction, on the other hand, may be detected through complaints, negative word-of-mouth, and increased service switching (Tjiptono, 2012; Anderson & Sullivan, 1993) ^[13, 2].

Customer Loyalty

Customer loyalty is a strategic objective for service firms, especially in the logistics industry where stable long-term relationships contribute to operational efficiency and sustainable growth. Loyalty encompasses not just the intention to repurchase but also the emotional attachment to a brand and resistance to competitor influence (Griffin, 2005) ^[5].

According to Oliver (1999) ^[9], loyalty is a deeply held commitment to rebuy or repatronize a preferred product or service in the future, despite situational influences and marketing efforts by competitors. Repeated interactions with a logistics provider help build trust, familiarity, and satisfaction—all of which lay the foundation for loyalty. As customers gain positive experiences with service reliability, communication, and problem resolution, their likelihood of forming enduring partnerships increases.

Loyal customers often serve as advocates, influencing other potential clients through word-of-mouth and social networks. This behavior reduces acquisition costs and enhances the company's market credibility. Moreover, loyal clients are more tolerant of occasional service failures and less likely to switch providers, which creates a competitive advantage (Reichheld & Sasser, 1990) ^[12]. Developing loyalty requires a proactive approach in delivering consistent value, understanding client-specific logistics needs, and continuously improving service quality.

Research Methods

Research location and time

This research was conducted at Gemadep Logistics Joint Stock Company, headquartered in Ho Chi Minh City, Vietnam. The study was carried out over a three-month period, from November 2024 to January 2025, during which primary data were collected directly from customers who

had recently used Gemadept’s logistics services, including warehousing, multimodal transport, and container handling.

Research Design

This study employs a quantitative, explanatory research design aimed at testing causal relationships among the variables: service quality, product quality, customer satisfaction, and customer loyalty. The model is structured

to examine both direct and indirect effects, specifically the mediating role of customer satisfaction. Path analysis was used as the core technique for testing the relationships, with estimation performed using the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach, which is suitable for small-to-medium samples and complex models (see figure 1).

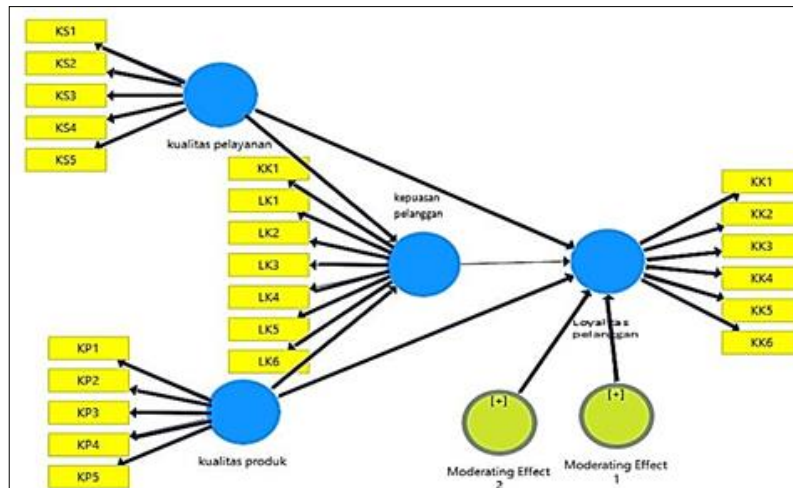


Fig 1: Research Design

Population and Sample

The population of the study comprises corporate and individual customers who have used Gemadept Logistics services in Ho Chi Minh City. A total of 98 valid responses were obtained through accidental (convenience) sampling, targeting customers encountered at container depots, logistics offices, and via service follow-up calls. Although not random, this method is appropriate for exploratory research where access to respondents is limited and time-bound.

Data Collection Instruments

Data were collected using a structured questionnaire, developed based on validated scales from prior studies. The instrument included items measuring perceived service quality (based on SERVQUAL dimensions), perceived product quality (based on logistics infrastructure and reliability), customer satisfaction, and customer loyalty.

Responses were rated on a 5-point Likert scale, ranging from “strongly disagree” to “strongly agree”.

Data Sources

Two types of data were utilized in this research. Primary data were gathered directly from respondents through the survey. These data reflected current customer perceptions of service experiences with Gemadept Logistics. Secondary data were obtained from internal reports, company documentation, and academic literature relevant to logistics service quality, customer behavior, and the Vietnamese logistics market. These sources helped in refining the theoretical framework and in contextualizing the findings.

Research Results and Discussion

Analysis Model

The overall path analysis model is shown in the following figure 2.

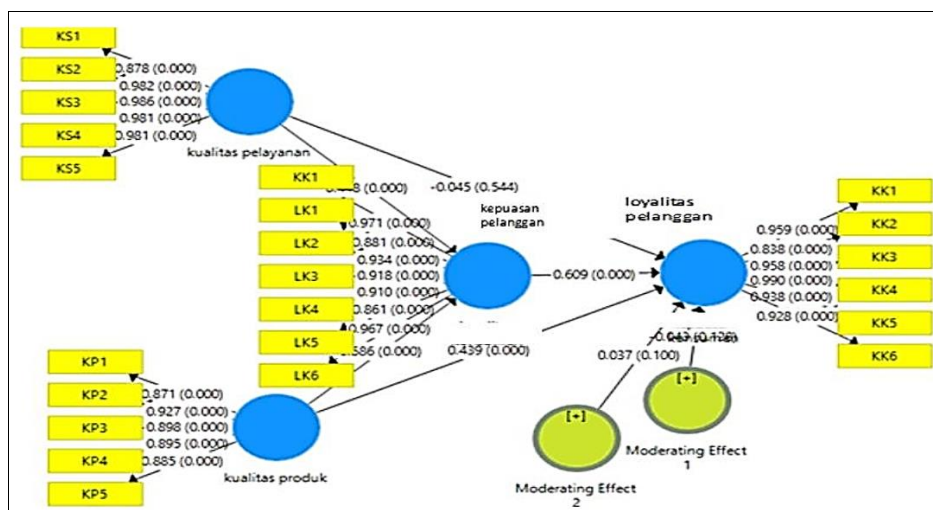


Fig 2: PLS Analysis Results

Loading Factor Value and Significance of Each Path are shown in Table 1.

Table 1: Loading Factor Value and Significance of Each Path

No	Path	Loading Factor	T Amount	p-value	Significant
1	X1àY	-0,045	0,645	0,519	Not Significant
2	X2àY	0,439	6,826	0,000	Significant
3	X3àY	0,609	5,893	0,000	Significant
4	X1àX3	0,448	7,506	0,000	Significant
5	X2àX3	0,586	10,501	0,000	Significant
6	X1àX3àY	-0,043	1,457	0,146	Not Significant
7	X2àX3àY	0,037	1,551	0,122	Not Significant

Service Quality → Customer Loyalty - First Path Analysis

The analysis reveals that service quality does not have a statistically significant impact on customer loyalty ($p = 0.519$; $t = 0.645$; loading = -0.045). Although service quality is commonly considered a critical factor in the logistics industry, the results suggest that Gemadept's customers do not perceive service quality alone as a sufficient reason to maintain loyalty. One possible explanation is that in B2B logistics contexts, clients prioritize operational performance, cost-efficiency, and technological capabilities over service interaction. It is also possible that customers take basic service quality for granted and focus instead on value-added factors such as real-time tracking or delivery reliability when deciding whether to continue using the service.

Product Quality → Customer Loyalty - Second Path Analysis

This path demonstrates a strong and statistically significant effect ($p = 0.000$; $t = 6.826$; loading = 0.439). Product quality, defined in logistics as the performance and condition of the service infrastructure—vehicles, IT systems, warehousing—plays a crucial role in shaping customer loyalty. The results indicate that customers tend to remain loyal when the logistics provider consistently delivers reliable and high-performing core services. For Gemadept, this implies that maintaining a robust transport fleet, implementing cutting-edge logistics software, and ensuring operational consistency are key to cultivating long-term client relationships.

Customer Satisfaction → Customer Loyalty - Third Path Analysis

The effect of customer satisfaction on loyalty is both positive and statistically significant ($p = 0.000$; $t = 5.893$; loading = 0.609). This finding supports existing marketing literature, which emphasizes satisfaction as a major predictor of repeat behavior and brand commitment. Satisfied customers are more likely to continue using the service, recommend it to others, and exhibit higher tolerance toward minor service failures. In the case of Gemadept, ensuring that customer expectations are consistently met or exceeded can result in stronger loyalty and reduced client churn.

Service Quality → Customer Satisfaction - Fourth Path Analysis

Service quality shows a significant and positive impact on customer satisfaction ($p = 0.000$; $t = 7.506$; loading = 0.448). This confirms that even if service quality does not directly influence loyalty, it does play an important role in

shaping how customers evaluate their experience with the company. Elements such as staff professionalism, responsiveness, and communication quality can influence how customers feel about the company, which in turn may affect their behavioral intentions. Therefore, Gemadept should continue training its personnel and enhancing customer-facing operations to maintain a high level of satisfaction.

Product Quality → Customer Satisfaction - Fifth Path Analysis

Among all direct relationships, this path demonstrates the strongest statistical significance ($p = 0.000$; $t = 10.501$; loading = 0.586). This suggests that product quality - represented by logistics infrastructure, system integration, and delivery reliability - is a dominant factor shaping customer satisfaction. When customers experience accurate deliveries, minimal service interruptions, and effective shipment monitoring, they are more likely to report positive satisfaction levels. Gemadept should continuously invest in upgrading its physical and digital logistics systems to ensure sustained customer approval.

Service Quality → Customer Satisfaction → Customer Loyalty (Indirect Effect) - Sixth Path Analysis

The indirect effect of service quality on loyalty through satisfaction is statistically insignificant ($p = 0.146$; $t = 1.457$; loading = -0.043). This result suggests that customer satisfaction does not mediate the relationship between service quality and loyalty in a meaningful way. Even though service quality enhances satisfaction, its influence does not extend strongly enough to affect loyalty through this mediating path. This implies that other factors, such as switching costs, service customization, or technological reliability, may override the emotional satisfaction derived from service interactions.

Product Quality → Customer Satisfaction → Customer Loyalty (Indirect Effect) - Seventh Path Analysis

Similarly, the indirect effect of product quality on loyalty via satisfaction is not statistically significant ($p = 0.122$; $t = 1.551$; loading = 0.037). This indicates that while product quality does increase satisfaction, the satisfaction alone does not sufficiently explain the loyalty-building process. Customers may value technical quality and be satisfied with the service, but their decision to stay loyal is driven more directly by the functional performance of the logistics solutions. In other words, loyalty to Gemadept may stem from tangible operational advantages rather than emotional satisfaction.

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