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Unlocking the potential of logistics service quality: insights into customer satisfaction and loyalty via an extended SERVQUAL approach

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Abstract: The rise of e-commerce has intensified the demand for logistics services, emphasizing the need for research on service quality to enhance efficiency and customer satisfaction, ultimately fostering loyalty. This study explores the impact of Logistics Service Quality (LSQ) on customer satisfaction and loyalty in the dynamic logistics market of Ho Chi Minh City, Vietnam. Employing an extended SERVQUAL model, this study investigates six dimensions of Logistics Service Quality (LSQ): tangibility, reliability, responsiveness, assurance, empathy, and the newly added dimension of fairness, thereby providing a more comprehensive and nuanced understanding of logistics service quality. A quantitative approach was employed, analyzing data from 409 logistics service users using Partial Least Squares Structural Equation Modelling (PLS-SEM). The findings indicate that all the service quality dimensions positively influence customer satisfaction, except for reliability, suggesting a potential misalignment between customer expectations and the consistency of service performance in this market. Additionally, customer satisfaction was found to be a strong and positive predictor of customer loyalty. These results provide practical insights for logistics providers to prioritize service attributes that most effectively enhance customer satisfaction and loyalty. The study contributes to the literature by validating an extended LSQ model in a key Southeast Asian context and offers a managerial framework for improving customer relationships and sustaining a competitive advantage. This research is highly relevant for both scholars and practitioners in logistics, offering a solid empirical foundation for improving service quality and fostering customer loyalty in the sector.

1 Introduction

In today's highly competitive business environment, the management of critical logistics flows plays a pivotal role in shaping customer experiences and fostering long-term business relationships. The ability to ensure the efficient, reliable, and transparent flow of goods is no longer just a source of cost savings but a fundamental driver of competitive advantage. As the marketplace becomes more saturated, logistics service providers can no longer compete solely on price. Instead, the quality of the service delivered - termed Logistics Service Quality (LSQ) - has emerged as a key differentiator, directly shaping customer perceptions, influencing purchasing decisions, and ultimately determining a firm's long-term success. This dynamic is particularly pronounced in Vietnam, where accession to the World Trade Organization (WTO) has intensified market pressures by introducing global industry leaders such as DHL, UPS, and FedEx. This environment necessitates that domestic firms strategically prioritize and enhance their service quality to contend effectively and satisfy the escalating demands of customers in the digital era.

In Vietnam's dynamic economy, HoChiMinh City (HCMC) has emerged as a critical hub for logistics activities. Approximately 70% of these enterprises are concentrated in HCMC and its neighboring provinces. Despite HCMC's significance in the logistics sector, most Vietnamese logistics firms remain small and possess limited capital. Furthermore, deficiencies in the city's transportation infrastructure exacerbate freight congestion and elevate business logistics expenses. Although road transport is predominant in the southern region, inadequate highway infrastructure leads to

frequent congestion, increasing labor and material costs. Logistics businesses must enhance service quality to meet customer demands in this context. Murfield et al. [1] have demonstrated that high-quality logistics services lead to customer satisfaction, which in turn fosters customer loyalty towards the logistics company. Furthermore, customer satisfaction positively influences loyalty toward products and services [2]. Consequently, loyal customers are more likely to recommend the logistics company to others. Enhancing service quality thus provides logistics companies with significant benefits, including increased revenue and market share [1].

Research on customer satisfaction with logistics service quality has predominantly concentrated on various factors such as responsiveness, exemplified by metrics like order fulfillment time [3] and order processing time [4]. Additionally, brand image has been identified as a critical determinant in evaluating logistics service quality [5]. Operational and technical service quality are also recognized as essential components within this context. However, there is no consensus on the attributes of Logistics Service Quality. The SERVQUAL model recommended by Parasuraman et al. (1988) [6], with its five core dimensions of "tangibility", "reliability", "responsiveness", "assurance", and "empathy", has traditionally been the dominant framework for assessing service quality. However, its universal applicability has been questioned, with scholars arguing for context-specific adaptations. The unique nature of the logistics industry, which involves the physical handling, storage, and timely delivery of tangible goods, suggests that additional dimensions may be necessary to fully capture the customer's experience. Furthermore, the dynamics of service quality perception can vary significantly across different economic and cultural contexts. The rapidly growing and highly competitive market of Vietnam, particularly in a major economic hub like Ho Chi Minh City, presents a compelling yet under-researched setting for examining these relationships. This study aims to investigate the effects of logistics service quality on customer satisfaction and loyalty in Ho Chi Minh City by developing and empirically testing an extended SERVQUAL model, which incorporates the dimension of "fairness" as an additional factor alongside the traditional dimensions. The inclusion of fairness is especially relevant given the increasing emphasis on ethical practices, equitable treatment, and transparency in service delivery, particularly in competitive markets. By introducing this new dimension, the study aims to provide a more comprehensive understanding of logistics service quality that better aligns with customer satisfaction and loyalty.

2 Literature review and hypothesis development

2.1 Logistics Service Quality

Though the concept of Logistics Service Quality (LSQ) has been adapted to cater to the unique needs of the logistics industry, its foundations lie in the well-established principles of service quality [5,7]. Coyle et al. [8] identified seven key criteria to assess the quality of logistics services: delivering the right amount of product, in the appropriate quantities, at the right moment, at the designated location, in proper condition, with accurate information provided to the customer, and all at a fair price [9]. This framework was further expanded upon by Rafid et al. [9], who defined logistics quality measurement as a set of attributes including timeliness, accuracy, and conditions of the service process, supply of high-quality information to clients, availability, and service provider capacity. Notwithstanding the availability of frameworks tailored specifically for logistics, a prevalent trend in quantitative research is the application of the classical SERVQUAL model. This reliance on a generic instrument highlights the potential inefficiency of using a one-size-fits-all approach to measure the distinct attributes of logistics service quality [10].

The service quality dimensions in SERVQUAL, which include tangibility, reliability, responsiveness, assurance, and empathy, can indeed be applied to the logistics industry. However, researchers have emphasized the need for developing a more comprehensive LSQ model that incorporates the nuances of the logistics domain. A key dimension highlighted in the logistics service quality literature is the fairness of logistics service providers. Customers also expect to be treated fairly in their interactions with service providers.

Tangibles

It is outlined by Parasuraman et al. (1988) [6] and encompasses aspects such as physical facilities, decor, and the appearance of personnel. This tangible dimension has been found to significantly impact customer satisfaction, as individuals tend to evaluate service quality based on these readily observable elements. Building upon this foundational research, recent studies have underscored the pivotal role of tangibility in shaping customer satisfaction, with evidence suggesting that enhancing the convenience and safety experienced by clients can have a positive ripple effect on a company's reputation and market standing [11]. As a result, the first hypothesis is formulated as follows:

H1: Tangibles have a positive influence on customer satisfaction.

Fairness

When customers perceive unfair treatment, it significantly impacts their emotions. Service failures linked to fairness issues elicit stronger customer responses than those unrelated to fairness [12]. This research also highlights the crucial role of fairness in influencing customer satisfaction, a viewpoint supported by previous studies that consistently demonstrate the strong connection between fairness and customer satisfaction [13]. Therefore, the second hypothesis is formed as follows:

H2: Fairness has a positive influence on customer satisfaction.

Reliability

When assessing service quality, individuals typically evaluate the reliability of enterprises by their ability to deliver services accurately and punctually as promised. Numerous studies have shown that reliability significantly impacts customer satisfaction [14]. In a study focusing on minicab taxi services in Ghana, reliability emerged as a critical component of customer satisfaction [15]. When consumer perceptions regarding the reliability of companies are favorable, it leads to positive outcomes in terms of customer satisfaction. Therefore, the third hypothesis posits:

H3: Reliability has a positive influence on customer satisfaction.

Responsiveness

According to Munusamy et al. (2010) [16], responsiveness pertains to the staff's ability to effectively address clients' issues, including both the speed and willingness of the workforce to assist without prompting, thereby significantly impacting customer satisfaction [17]. Additionally, other studies highlight responsiveness as a crucial factor in enhancing customer satisfaction [18]. Moreover, clients expect prompt responses from companies, and their satisfaction is prone to significant negative effects if they receive poor treatment or lack attention from staff [11]. Therefore, the fourth hypothesis is proposed as follows:

H4: Responsiveness has a positive influence on customer satisfaction.

Assurance

This dimension relates to the services' accuracy, which must align with the company's claims without any alterations. Furthermore, Furuhata et al. [19] highlighted assurance as a crucial factor in ride-sharing services. Additionally, research conducted by Rust et al. [20]suggested that security and privacy concerns are significant factors in customer satisfaction. Therefore, the fifth hypothesis is as follows:

H5: Assurance has a positive influence on customer satisfaction.

Empathy

In the competitive landscape of the same industry, companies strive to secure market dominance. To achieve this, many firms research customer empathy, aiming to develop tailored services that assist clients in their tasks and consistently integrate into their overall workflow [21]. A study conducted in the Indian online cab industry revealed that empathy significantly enhances customer satisfaction [22]. Consequently, we propose the following hypothesis:

H6: Empathy has a positive influence on customer satisfaction.

2.2 Customer satisfaction and customer loyalty

Customer satisfaction and loyalty are critical indicators of long-term business success. Research has consistently demonstrated a strong positive influence of customer satisfaction on loyalty, ultimately leading to overall business growth. Several studies have highlighted customer loyalty as a key foundation for profitability [23]. This positive relationship between satisfaction and loyalty has been empirically supported by numerous studies [24]. The positive link between satisfaction and loyalty has been confirmed by various studies [25,26]. Based on this established body of research, the following hypothesis (H7) is proposed (Figure 1):

H7: Customer satisfaction has a positive influence on customer loyalty.

The preceding literature review synthesizes a broad and diverse body of international research, establishing a clear scholarly consensus on the critical relationship between logistics service quality, customer satisfaction, and loyalty. This established foundation not only underscores the significance of the topic but also provides a robust theoretical justification for the hypotheses guiding this study.

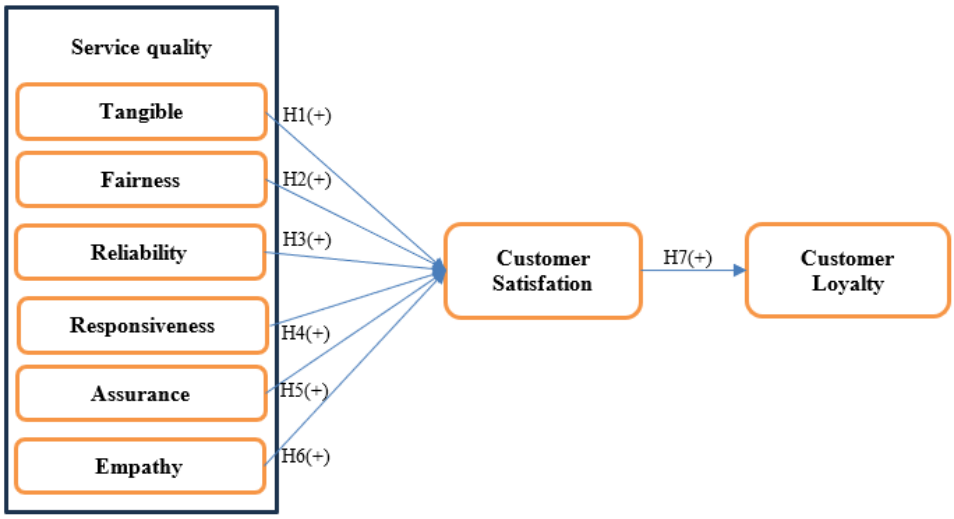

Figure 1 The proposed research model

3 Methodology

This study employs a quantitative approach using PLS-SEM (Partial Least Squares Structural Equation Modelling. The questionnaire, divided into three sections, first informed participants of the study's academic purpose and guaranteed anonymity of responses. The second section explored demographic characteristics, gathering information on gender, age, occupation, income, and frequency of logistics service usage. Finally, the third section assessed respondents' perceptions regarding logistics service quality in HCMC. The questionnaire used a five-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (5) to measure the dimensions of logistics service quality, customer satisfaction, and consumer loyalty (Table1).

Table 1 Measurement scale

Construct	Measurement items	Sources
Tangibles (TA)	TAI: "The logistics service provider has modern-looking equipment."	[10,27]
	TA2: "The logistics service provider has a visually attractive interior."	
	TA3: "The logistics service provider has modern facilities."	
	TA4: "The employees of the logistics service provider always look neat."	
	TA5: "The materials connected with the services are visually attractive."	
Fairness (FA)	FA1: "The employees of the logistics service provider treat me with an unbiased attitude."	[28]
	FA2: "The employees of the logistics service provider produce desired results for all customers without bias of any kind."	
	FA3: "The employees of the logistics service provider deliver good outcomes for all customers regardless of who they are."	
	FA4: "The employees of the logistics service provider help all customers get the outcomes they need without favoring any one group."	
	FA5: "The activities of the employees of the logistics service provider are conducted without bias."	
Reliability (RE)	RE1: "When the logistics service provider promises to do something within a certain period of time, it fulfils the promise."	[10,27]
	RE2: "When a user has a problem, the logistics service provider shows a sincere interest in solving the problem."	
	RE3: "The logistics service provider provides adequate services from the first time onwards."	
	RE4: "The logistics service provider will provide the services at the time it promises to do so."	
	RE5: "The logistics service provider insists on flawless service."	
Responsiveness (RES)	RES1: "The logistics service provider always informs the customers about the exact time when the service will be performed."	[10]
	RES2: "The logistics service provider responds to unexpected/ urgent orders."	
	RES3: "The employees of the logistics service provider will provide prompt service to the customers."	
	RES4: "The employees of the logistics service provider will be ready to help the users at any time."	
	RES5: "The employees of the logistics service provider will never be too busy to answer the requests of the customers."	
Assurance (AS)	AS1: "The behaviour of the employees of the logistics service provider instils confidence in the customers."	[27]
	AS2: "The clients feel secure in the business operations with the logistics service provider."	
	AS3: "The employees of the logistics service provider are always polite to the customers."	
	AS4: "The employees of the logistics service provider have the knowledge to answer the questions of the customers."	
Empathy (EM)	EMI: "The logistics service provider devotes individual attention to every user"	[27]
	EM2: "The employees of the logistics service provider devote personal attention to customers."	
	EM3: "The logistics service provider will focus its attention on what is best for the customers."	
	EM4: "The employees of the logistics service provider understand the specific needs of the customers."	
	EM5: "The business hours of the logistics service provider suit the needs of all customers."	
Customer Satisfaction (CS)	CS1: "I am satisfied with the overall service quality of the logistics service providers."	[29]
	CS2: "I am satisfied with the processes or operations of the logistics service provider."	
	CS3: "I am satisfied with the facilities and physical infrastructure of the logistics service provider."	
	CS4: "I am satisfied with the management and employees of the logistics service providers."	
	CS5: "I am delighted with our relationship with the logistics service provider."	
Customer Loyalty (CL)	CL1: "I am committed to the relationship with the logistics service provider."	[2,29]
	CL2: "I will likely recommend the logistics service provider to others."	
	CL3: "I will continue the relationship with the logistics service provider as long as possible."	
	CL4: "I consider this logistics service supplier my first choice to use these services."	
	CL5: "If all the other attributes are similar (price, service, quality, ...), I will always use the logistics services provided by the supplier."	

An initial online pilot survey was conducted from October to November 2024 to assess the feasibility of the questionnaire. The survey was directly distributed to 50 respondents via email, communication apps (such as Zalo, Viber, and Messenger), and online interviews. The results indicated that all participants comprehended the questions. Then, the official questionnaire was distributed from November to December 2024. A total of 450 questionnaires were collected, out of which 409 were valid, resulting in a response rate of 90.89%. The questionnaire was distributed through email and communication applications to facilitate data collection.

4 Results and discussion

4.1 Respondents' profiles

As seen in Table 2, the survey participants were nearly equally divided by gender, with 48.41% female and 51.59% male. The largest age group of respondents was 18-30 years old, making up 67.72% of the sample. The remaining respondents were divided between 31-40 years old (18.58%) and those 41 or older (13.69%). Students represent the largest occupational segment at 42.79%, followed by office staff and businessmen at 28.36% and 15.16% respectively. The income distribution reveals a significant proportion of respondents earning less than 5 million VND, accounting for 32.03%. Regarding logistics service usage frequency, the majority, at 36.92%, utilize the service between 2 to 4 times, indicating a regular engagement with the service provided.

Table 2 Profile of survey respondents

Characteristics	Observations	Frequency n = 409	Percentage
Gender	Female	198	48.41%
	Male	211	51.59%
Age	18-30 years old	277	67.73%
	31-40 years old	76	18.58%
	41 years old and above	56	13.69%
Occupation	Businessman	62	15.16%
	Student	175	42.79%
	Official staff	116	28.36%
	Others	56	13.69%
Income	Less than 5 million VND	131	32.03%
	From 5 to less than 10 million VND	113	27.63%
	From 10 to less than 20 million VND	91	22.25%
	20 million VND and avove	74	18.09%
Frequency of service usage	Once a month	214	52.32%
	2-4 times per month	151	36.92%
	More than 5 times per month	44	10.76%

4.2 Evaluating the measurement model

The primary objective of assessing the measurement model is to evaluate the suitability of the latent variables and their indicators. Specifically, this stage involves testing various aspects such as indicator reliability, internal consistency, convergent validity, and discriminant validity. The corresponding data are presented in Table 3. This study assessed construct reliability using Cronbach's alpha and Composite Reliability coefficients. Hair et al. [30] suggest that outer loading values exceeding 0.7 indicate good indicator reliability. In Table 3, both Cronbach's alpha and Composite Reliability coefficients surpassed the recommended threshold. However, while the overall measurement model demonstrated good construct reliability, eight items from various factors were excluded from further analysis. These items (EM1, FA1, FA5, RE4, RE5, CL4, and CL5) exhibited outer loading values below the recommended threshold of 0.7. This exclusion helps ensure the accuracy and robustness of the remaining measures.

Convergent validity, assessed by using Average Variance Extracted (AVE), was confirmed in this study. Hair et al. [30] suggest an AVE threshold of 0.50 for satisfactory convergent validity. The AVE values in this study ranged from 0.594 to 0.753, exceeding the recommended threshold and thus, confirming the convergent validity (as indicated in Table 3).

Discriminant validity examines the uniqueness of the measured construct, showing it is distinct from other constructs. The most common correlation technique used for this assessment is the Fornell-Larcker criterion. Discriminant validity is affirmed if the square root of each measured construct's Average Variance Extracted (AVE) exceeds its correlation with any other measured construct [30]. In this study, the Fornell and Larcker criterion was applied to assess discriminant validity, with the results presented in Table 4. The diagonal values in Table 4 represent the square root of the AVE, and they surpass the off-diagonal values, indicating no correlation between any two measured constructs. Therefore, this confirms the discriminant validity of the research model.

Table 3 Reliability and AVE

Constructs	Measurement	Outer loadings	Cronbach's Alpha	CR	AVE
Tangibles (TA)	TA1	0.756	0.860	0.898	0.639
	TA2	0.821			
	TA3	0.840			
	TA4	0.803			
	TA5	0.774			
Fairness (FA)	FA2	0.807	0.836	0.902	0.753
	FA3	0.848			
	FA4	0.826			
Reliability (RE)	RE1	0.764	0.825	0.894	0.737
	RE2	0.803			
	RE3	0.811			
Responsiveness (RES)	RES1	0.763	0.829	0.880	0.594
	RES2	0.813			
	RES3	0.792			
	RES4	0.770			
	RES5	0.712			
Assurance (AS)	AS1	0.732	0.846	0.897	0.686
	AS2	0.852			
	AS3	0.844			
	AS4	0.812			
Empathy (EM)	EM2	0.749	0.784	0.856	0.599
	EM3	0.789			
	EM4	0.760			
	EM5	0.773			
Customer satisfaction (CS)	CS1	0.751	0.835	0.884	0.604
	CS2	0.802			
	CS3	0.816			
	CS4	0.795			
	CS5	0.716			
Customer Loyalty (CL)	CL1	0.825	0.830	0.898	0.746
	CL2	0.858			
	CL3	0.860			

Table 4 Fornell-Larcker criterion

	AS	CL	CS	EM	FA	RE	RES	TA
AS	**0.828**							
CL	0.345	**0.863**						
CS	0.440	0.644	**0.777**					
EM	0.288	0.408	0.626	**0.774**				
FA	0.108	0.336	0.495	0.284	**0.868**			
RE	0.201	0.037	0.225	0.189	0.113	**0.859**		
RES	0.380	0.425	0.624	0.454	0.311	0.262	**0.771**	
TA	0.167	0.190	0.338	0.271	0.191	0.132	0.254	**0.799**

4.3 Evaluating the structural model

The next analysis tests the hypotheses within the structural model (Figure 2). As detailed in Table 5, six out of seven proposed hypotheses were supported. Six dimensions of service quality demonstrated significant positive influences on customer satisfaction: Tangibility ($\beta = 0.089$, $p < 0.05$), Fairness ($\beta = 0.271$, $p < 0.05$), Responsiveness ($\beta = 0.291$, $p < 0.05$), Assurance ($\beta = 0.187$, $p < 0.05$) and Empathy ($\beta = 0.338$, $p < 0.05$). In other words, the hypotheses H1, H2, H4, H5, and H6 were supported. Furthermore, the findings revealed that Empathy possessed the strongest positive impact on customer satisfaction among the six constructs investigated. Similarly, customer satisfaction ($\beta = 0.644$, $p < 0.05$) also exerted a significant positive effect on customer loyalty, confirming the direct effect hypothesis (H7). Nevertheless, one

dimension of logistics service quality did not impact customer satisfaction: Reliability (β = 0.005, p > 0.05). Thus, the hypothesis H3 was rejected (β = 0.005, p = 0.887).

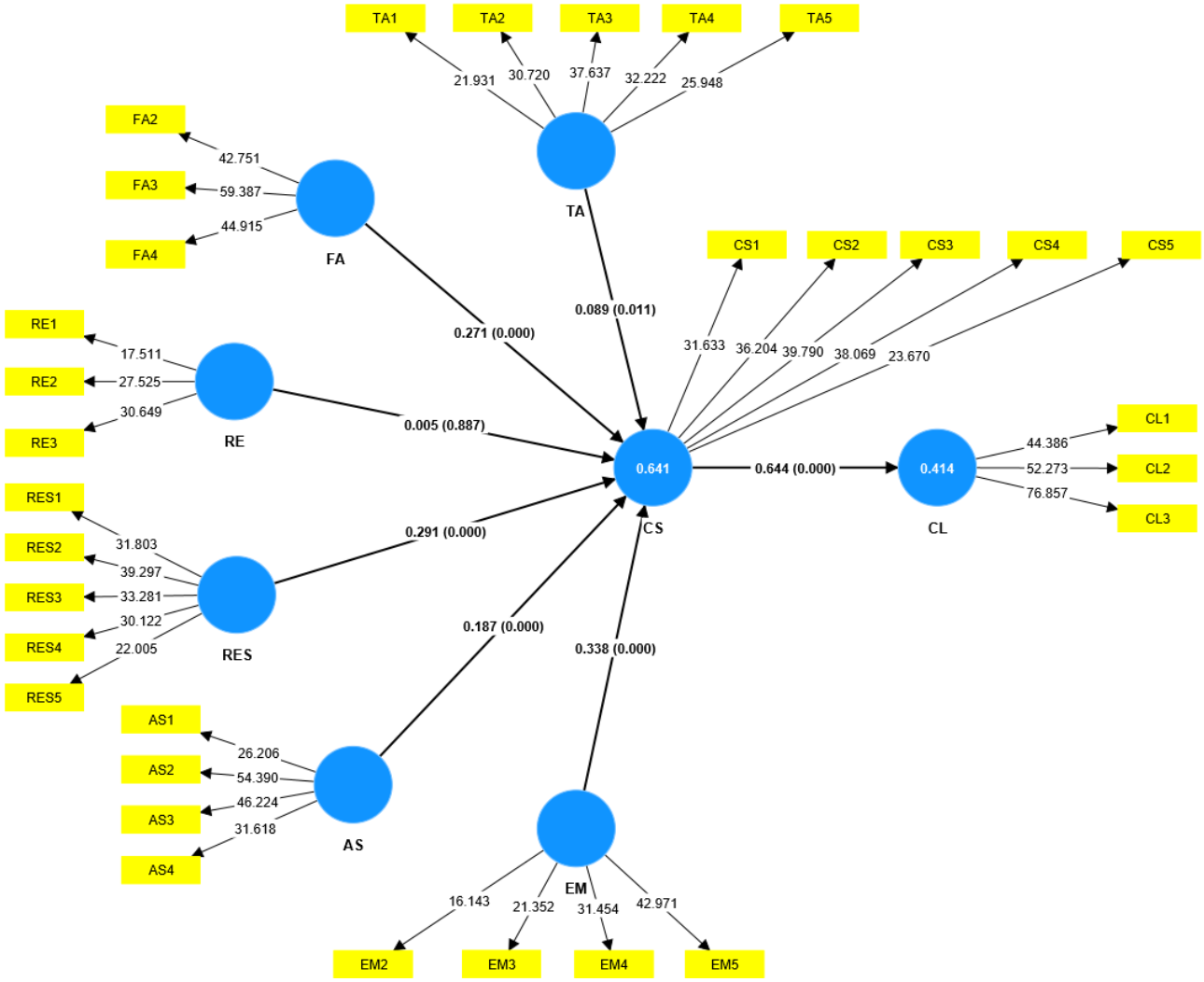

Figure 2 The results of the structural model analysis

This study also evaluated the effect sizes of the hypothesized relationships using the f^2 statistic. The f^2 indicates the proportion of variance in an endogenous variable that can be attributed to a specific exogenous variable. As detailed in Table 5, the calculated f^2 values were 0.02, 0.15, and 0.35, corresponding to weak, moderate, and strong effects, respectively. Empathy, fairness, and responsiveness exerted a medium effect on customer satisfaction, while assurance and tangibles exhibited a small effect. These findings provide valuable insights into the relative impact of each factor on customer satisfaction.

Table 5 Structural path analysis

Hypotheses	Coefficients	f^2	P values	Conclusion
H1: Tangibles → Customer satisfaction	0.089	0.020	0.011	Accepted
H2: Fairness → Customer satisfaction	0.271	0.177	0.000	Accepted
H3: Reliablity → Customer satisfaction	0.005	0.000	0.887	Rejected
H4: Responsiveness → Customer satisfaction	0.291	0.158	0.000	Accepted
H5: Assurance → Customer satisfaction	0.187	0.081	0.000	Accepted
H6: Empathy → Customer satisfaction	0.338	0.233	0.000	Accepted
H7: Customer satisfaction → Customer loyalty	0.644	0.707	0.000	Accepted

4.4 Discussion

This study investigates the determinants of customer satisfaction and loyalty with logistics service companies in HCMC, Vietnam. Five dimensions - tangibles, reliability, responsiveness, assurance, empathy, and fairness - are positively related to customer satisfaction. As shown in Table 5, the path coefficient of empathy is the strongest predictor (0.338). This factor plays the most crucial role in customer satisfaction. The second strongest predictor for customer satisfaction is responsiveness, with a coefficient of 0.291, which is compatible with [31]. Assurance and tangibles also significantly affect customer satisfaction, supporting [32]. Besides that, the result reveals that service fairness also impacts customer satisfaction, which confirms the recent research by Kwortnik & Han [33] and Seider & Berry [12]. By incorporating fairness into their service strategies, logistics companies can go beyond simply meeting basic service needs to build stronger customer relationships, as mentioned in Seider & Berry [12]. It can be concluded that research across various areas has consistently highlighted the significant correlations and direct impacts of service quality on customer satisfaction [34].

There is no doubt that the service quality of logistics providers significantly enhances customer satisfaction, which in turn fosters customer loyalty. Our findings provide further evidence to support previous research, such as Slack et al. [35]. The authors identified a significant and positive relationship between service quality and both customer satisfaction and loyalty. They further revealed that service quality has a direct impact on loyalty, and also an indirect impact mediated by customer satisfaction.

Contrary to our expectations, the hypothesis H3 was rejected. This suggests that reliability did not exhibit a significant association with customer satisfaction in Ho Chi Minh City. The disconnection between reliability and customer satisfaction in Ho Chi Minh City likely stems from several reasons specific to the city's context. As a busy metropolis and a major economic hub in Vietnam, Ho Chi Minh City might have different customer preferences and expectations compared to other areas. This could lead to a different perception of reliability among Ho Chi Minh City customers. Additionally, the logistics landscape in Ho Chi Minh City may present unique challenges or features that diminish the importance of traditional reliability measures. For instance, logistical complexities in terms of traffic congestion, inefficient infrastructure, or complex supply chains might make strict adherence to timelines less significant for customers in urban areas like Ho Chi Minh City. Furthermore, cultural or industry-specific aspects within Ho Chi Minh City's logistics sector could influence how customers perceive reliability compared to other areas or industries. Recognizing these specific details is crucial for accurately determining the factors that truly drive customer satisfaction in Ho Chi Minh City's logistics scene.

5 Conclusion

Building upon the SERVQUAL framework, the study extends the model by incorporating fairness, which is shown to enhance its explanatory power. Furthermore, integrating fairness into the model provides a theoretical foundation for understanding how users engage with logistics services. The study operationalizes the SERVQUAL dimensions specifically within the context of services offered by logistics companies and examines their conceptual influence on customer satisfaction and customer loyalty. This study contributes to the existing body of research by replicating previous findings on the significant influences of service quality on customer satisfaction and loyalty. In other words, the results validate the positive and significant impacts of these factors on customer satisfaction and loyalty within the logistics industry.

Drawing from the research findings, the author suggests several managerial strategies for logistics companies in Ho Chi Minh City to elevate customer satisfaction. Firms are advised to focus on enhancing tangible aspects, such as upgrading facilities and standardizing employee uniforms, to foster a professional atmosphere. Additionally, to promote fairness, meticulous recruitment and comprehensive training are essential to equip staff with the skills necessary for exceptional customer care. The implementation of AI tools on company websites can enhance responsiveness, providing prompt information to clients when staff availability is limited. Assurance can be strengthened by transparent communication of procedures, thereby cultivating trust in the services offered. Empathy can be further developed by refining customer service skills. Furthermore, fostering customer loyalty involves regular engagement and the offering of promotional incentives that keep the brand at the forefront of customers' preferences.

This research, similar to many prior studies, has limitations that need further exploration. First, the sample size of 409 participants recruited solely from Ho Chi Minh City limits the generalizability of the findings. Future research should consider expanding the sample size and diversifying the study scope to obtain a more representative overview. Second, while the study focuses on service quality factors, brand reputation and pricing also contribute to customer satisfaction. Future research should consider incorporating these elements for a more comprehensive understanding. Finally, the construct of reliability did not significantly impact customer satisfaction in this study. This discrepancy might be attributed to a mismatch between the survey instrument and the specific context of Ho Chi Minh City logistics services. Therefore, future studies should refine, validate, and potentially enhance the questionnaire to better reflect the local environment. By addressing these limitations, future studies can build upon this research to provide a more robust and generalizable understanding of customer satisfaction in the Ho Chi Minh City logistics landscape.

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References

[1] MURFIELD, M., BOONE, C.A., RUTNER, P., THOMAS, R.: Investigating logistics service quality in omni-channel retailing, *International Journal of Physical Distribution and Logistics Management*, Vol. 47, No. 4, pp. 263-296, 2017. https://doi: 10.1108/IJPDLM-06-2016-0161
[2] SAURA, G.I., SERVERA FRANCES, D., BERENGUER CONTRI, G., FUENTES BLASCO, M.: Logistics service quality: A new way to loyalty, *Industrial Management and Data Systems*, Vol. 108, No. 5, pp. 650-668, 2008. https://doi: 10.1108/02635570810876778
[3] MENTZER, J.T., DEWITT, W., KEEBLER, J.S., MIN, S., NIX, N.W., SMITH, C.D., ZACHARIA, Z.G.: Defining supply chain management, *Journal of Business Logistics*, Vol. 22, No. 2, pp. 1-25, 2001. https://doi.org/10.1002/j.2158-1592.2001.tb00001.x
[4] RAFELE, C.: Logistic service measurement: A reference framework, *Journal of Manufacturing Technology*, Vol. 15, No. 3, pp. 280-290, 2004. https://doi.org/10.1108/17410380410523506
[5] THAI, V.V.: Logistics service quality: Conceptual model and empirical evidence, *International Journal of Logistics Research and Applications*, Vol. 16, No. 2, pp. 114-131, 2013. https://doi.org/10.1080/13675567.2013.804907
[6] PARASURAMAN, A., ZEITHAML, V.A., BERRY, L.S.: A multiple–item scale for measuring consumer perceptions. *Journal of Service Quality Retailing*, Vol. 64, pp. 12-40, 1988.
[7] ARABELEN, G., KAYA, H.T.: Assessment of logistics service quality dimensions: a qualitative approach, *Journal of Shipping and Trade*, Vol. 6, pp. 1-13, 2021. https://doi.org/10.1186/s41072-021-00095-1
[8] COYLE, J.J.: *Future manufacturing, markets, and logistics needs*, Proceedings, International Symposium on Motor Carrier Transportation, Williamsburg, Va., 1993, National Academy Press, Washington, D.C., 1994.
[9] RAFIQ, M., JAAFAR, H.S.: Measuring customers' perceptions of logistics service quality of 3PL service providers, *Journal of Business Logistics*, Vol. 28, No. 2, pp. 159-175, 2007. https://doi.org/10.1002/j.2158-1592.2007.tb00062.x
[10] KAHNALI, R.A., ESMAEILI, A.: An integration of SERVQUAL dimensions and logistics service quality indicators (A case study), *International Journal of Services and Operations Management*, Vol. 21, No. 3, pp. 289-309, 2015. https://doi: 10.1504/IJSOM.2015.069650
[11] RESTUPUTRI, D.P., MASUDIN, I., SARI, C.P.: Customers perception on logistics service quality using Kansei engineering: empirical evidence from Indonesian logistics providers, *Cogent Business and Management*, Vol. 7, No. 1, 1751021, pp. 1-25, 2020. https://doi.org/10.1080/23311975.2020.1751021
[12] SEIDERS, K., BERRY, L.L.: Service fairness: What it is and why it matters, *Academy of Management Perspectives*, Vol. 12, No. 2, pp. 8-20, 1998. https://doi.org/10.5465/ame.1998.650513
[13] ASERES, S.A., SIRA, R.K.: An exploratory study of ecotourism services quality (ESQ) in Bale Mountains National Park (BMNP), Ethiopia: using an ECOSERV model, *Annals of Leisure Research*, Vol. 23, No. 3, pp. 386-406, 2020. https://doi.org/10.1080/11745398.2019.1642769
[14] FAMIYEH, S., KWARTENG, A., ASANTE-DARKO, D.: Service quality, customer satisfaction and loyalty in automobile maintenance services: Evidence from a developing country, *Journal of Quality in Maintenance Engineering*, Vol. 24, No. 3, pp. 262-279, 2018. https://doi.org/10.1108/JQME-10-2016-0056
[15] HORSU, E.N., YEBOAH, S.T.: Influence of Service Quality on Customer Satisfaction: A Study of Minicab Taxi Services in Cape Coast, Ghana, *International Journal of Economics, Commerce and Management*, Vol. 3, No. 5, pp. 1451-1464, 2015.
[16] MUNUSAMY, J., CHELLIAH, S., MUN, H.W.: Service quality delivery and its impact on customer satisfaction in the banking sector in Malaysia, *International Journal of Innovation, Management and Technology*, Vol. 1, No. 4, pp. 398-404, 2010.
[17] MAHAMAD, O., RAMAYAH, T.: Service quality, customer satisfaction and loyalty: A test of mediation, *International Business Research*, Vol. 3, No. 4, pp. 72-80, 2010. https://doi.org/10.5539/ibr.v3n4p72
[18] SIDDIQI, K.O.: Interrelations between Service Quality Attributes, Customer Satisfaction and Customer Loyalty in the Retail Banking Sector in Bangladesh, *International Journal of Business and Management*, Vol. 6, No. 3, pp. 12-36, 2011. https://doi.org/10.5539/ijbm.v6n3p12
[19] FURUHATA, M., DESSOUKY, M., ORDÓÑEZ, F., BRUNET, M.E., WANG, X., KOENIG, S.: Ridesharing: The state-of-the-art and future directions, *Transportation Research Part B: Methodological*, Vol. 57, pp. 28-46, 2013. https://doi.org/10.1016/j.trb.2013.08.012
[20] RUST, R.T., KANNAN, P.K., PENG, N.: The customer economics of internet privacy, *Journal of the Academy of Marketing Science*, Vol. 30, No. 4, pp. 455-464, 2002. https://doi.org/10.1177/009207002236917

[21] PIZAM, A.: Is empathy essential for high-quality customer service?, *International Journal of Hospitality Management*, Vol. 49, pp. 149-150, 2015. https://doi.org/10.1016/j.ijhm.2015.08.001
[22] SHARMA, K., DAS, S.: Service Quality and Customer Satisfaction - With Special focus on the Online Cab Industry in India, *International Journal of Business and Management*, Vol. 12, No. 7, pp. 192-200, 2017. https://doi.org/10.5539/ijbm.v12n7p192
[23] GUIMARAES, T., PARANJAPE, K.: Testing cloud computing for customer satisfaction and loyalty, *International Journal of Electronic Customer Relationship Management*, Vol. 8, No. 1-3, pp. 72-86, 2014. https://doi.org/10.1504/IJECRM.2014.066885
[24] KASSIM, N., ABDULLAH, N.A.: The effect of perceived service quality dimensions on customer satisfaction, trust, and loyalty in e-commerce settings: A cross-cultural analysis, *Asia Pacific Journal of Marketing and Logistics*, Vol. 22, No. 3, pp. 351-371, 2010. https://doi.org/10.1108/13555851011062269
[25] GORONDTSE, A.H., HILMAN, H.: Mediation effect of customer satisfaction on the relationships between service quality and customer loyalty in the Nigerian foods and beverages industry: Sobel test approach, *International Journal of Management Science and Engineering Management*, Vol. 9, No. 1, pp. 1-8, 2014. https://doi.org/10.1080/17509653.2013.812337
[26] VAN LIEROP, D., EL-GENEIDY, A.: Enjoying loyalty: The relationship between service quality, customer satisfaction, and behavioral intentions in public transit, *Research in Transportation Economics*, Vol. 59, pp. 50-59, 2016. https://doi.org/10.1016/j.retrec.2016.04.001
[27] KILIBARDA, M., NIKOLICIC, S., ANDREJIC, M.: Measurement of logistics service quality in freight forwarding companies: A case study of the Serbian market, *International Journal of Logistics Management*, Vol. 27, No. 3, pp. 770-794, 2016. https://doi.org/10.1108/IJLM-04-2014-0063
[28] BHATT, K.: Measuring service fairness and its impact on service quality and satisfaction: a study of Indian Banking Services, *Journal of Financial Services Marketing*, Vol. 25, No. 1, pp. 35-44, 2020. https://doi.org/10.1057/s41264-020-00069-7
[29] GUPTA, A., SINGH, R.K., MATHIYAZHAGAN, K., SURI, P.K., DWIVEDI, Y.K.: Exploring relationships between service quality dimensions and customers satisfaction: empirical study in context to Indian logistics service providers, *The International Journal of Logistics Management*, Vol 34, No. 6, pp. 1858-1889, 2023. https://doi-org.uwe.idm.oclc.org/10.1108/IJLM-02-2022-0084
[30] HAIR, J.F., RISHER, J.J., SARSTEDT, M., RINGLE, C.M.: When to use and how to report the results of PLS-SEM, *European Business Review*, Vol. 31, No. 1, pp. 2-24, 2019. https://doi.org/10.1108/EBR-11-2018-0203
[31] BAKI, B., SAHIN BASFIRINCI, C., MURAT AR, I., CILINGIR, Z.: An application of integrating SERVQUAL and Kano's model into QFD for logistics services: A case study from Turkey, *Asia Pacific Journal of Marketing and Logistics*, Vol. 21, No. 1, pp. 106-126, 2009. https://doi.org/10.1108/13555850910926272
[32] KOCHOVSKI, P., DROBINTSEV, P.D., STANKOVSKI, V.: Formal quality of service assurances, ranking and verification of cloud deployment options with a probabilistic model checking method, *Information and Software Technology*, Vol. 109, pp. 14-25, 2019. https://doi.org/10.1016/j.infsof.2019.01.003
[33] KWORTNIK, R.J., HAN, X.: The influence of guest perceptions of service fairness on lodging loyalty in China, *Cornell Hospitality Quarterly*, Vol. 52, No. 3, pp. 321-332, 2011. https://doi.org/10.1177/1938965511409005
[34] UZIR, M.U.H., AL HALBUSI, H., THURASAMY, R., HOCK, R.L.T., ALJABERI, M.A., HASAN, N., HAMID, M.: The effects of service quality, perceived value and trust in home delivery service personnel on customer satisfaction: Evidence from a developing country, *Journal of Retailing and Consumer Services*, Vol. 63, No. November, 102721, 2021. https://doi.org/10.1016/j.jretconser.2021.102721
[35] SLACK, N., SINGH, G., SHARMA, S.: The effect of supermarket service quality dimensions and customer satisfaction on customer loyalty and disloyalty dimensions, *International Journal of Quality and Service Sciences*, Vol. 12, No. 3, pp. 297-318, 2020. https://doi.org/10.1108/IJQSS-10-2019-0114

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