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The Impact of Logistics Service Quality on Cross-Border Customer Experience

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Abstract **Original Research Article**

The development of cross-border e-commerce is very rapid and changes the way consumers around the world perceive and evaluate online businesses. Within this context, the Rapid Growth of Cross Border Customer Experience Competitiveness hinges on Logistics Service Quality. This study employs the Quality-Attitude-Intention (QAI) Chain and the Stimulus-Organism-Response (SOR) Framework to analyze the interplay of direct and indirect impact of Logistics Service Quality on cross-border e-commerce. It investigates the balancing act of perceived risks, customer perceived value. Logistics Service Quality comprises the price justice, delivery service quality, delivery information, delivery time frame, and the eco-friendliness of the service. Data for this study were collected from 258 Vietnamese customers of popular international e-commerce platforms, namely, AliExpress, Shopee Global, Lazada, and Shein. The study, which used partial least square structural equation modeling (PLS-SEM), discovered that logistics service quality has a direct and beneficial mediation effect on cross-border e-commerce. For example, higher logistics service quality positively impacts customers' perceived value and reduces perceived risk, which, in turn, increases satisfaction and trust in cross-border transactions. Research expands insights into logistics service quality and cross-border e-commerce, indicating that improvements in service sustainability, transparency, and dependability may help logistics firms and e-commerce platforms enhance customer loyalty.

Keywords: Logistics Service Quality, Cross Border Customer Experiences, PLS-SEM.

1. Introduction

The rapid advancement of digital transformation has profoundly reshaped the global retail landscape, positioning e-commerce as a dominant force in modern consumer markets. Among the demographic segments driving this transformation, Generation Z stands out for its substantial influence on online shopping behaviors, marked by strong digital proficiency, refined consumption habits, and high service expectations (Bunea et al., 2024)This generational shift is not limited to developed economies such as North America and Europe but extends to emerging markets like Vietnam—one of Southeast Asia's fastest-growing e-commerce sectors, where Generation Z plays a pivotal role in fueling online commerce expansion .(Ngo et al., 2025a)

Despite their growing influence, existing theoretical frameworks often fail to fully account for generational and regional distinctions in consumer behavior (Rana et al., 2024). This gap underscores the need to reassess how traditional Logistics Service

Quality (LSQ) models—originally developed prior to the rise of this digital-native generation—apply within the context of cross-border e-commerce. Furthermore, the interaction between cultural environments, technological development levels, and perceptions of LSQ in emerging economies such as Vietnam remains underexplored. Addressing these dynamics is essential to deepen scholarly understanding of how LSQ affects cross-border customer experience and the mediating role played by generational and contextual factors.

Beyond operational efficiency, LSQ fundamentally shapes consumer perceptions, satisfaction and subsequent behavioural intentions in cross-border purchases. Customer satisfaction—driven by reliable delivery, accurate information and fair pricing—has been shown to be a strong predictor of repurchase intention in e-commerce contexts (Handoyo, 2024). Yet maintaining consistent service quality across national borders remains difficult: longer transit times, customs processing, uneven service standards and fragmented information flows can undermine the buyer's experience and reduce the likelihood of repeat transactions. For example, investigations of cross-border shopping platforms report recurring logistics complaints such as product loss or damage, incorrect order fulfilment and delivery delays; even platforms known for rigorous product quality control may experience logistics-related dissatisfaction tied to third-party providers (Hui et al., 2025a). Such evidence suggests that product quality alone is insufficient unless logistics services deliver a consistently reliable end-to-end experience.

Given the operational complexity of cross-border logistics multiple carriers, customs rules, multi-modal transport and varied regulatory regimes research must go beyond single-dimension measures of LSQ to examine the psychological mechanisms by which logistics attributes influence customer outcomes (Y. Zhang & Huang, 2025a). Customer perceived value (CPV) the consumer's overall evaluation of benefits relative to costs and risks—may mediate the effect of LSQ on cross-border customer experience (CE). High operational performance does not automatically translate into superior CE unless customers perceive that the combined benefits (e.g., timeliness, product integrity, transparent information, fair pricing and eco-friendly practices) outweigh perceived risks and effort.

Considering this, this research examines the impact of LSQ on cross-border customer experience, particularly regarding the mediating influence of customer perceived value. For this study, the LSQ construct is treated as a second-order construct, consisting of five first-order components: service quality of delivery, information delivery, delivery system stabilization, price fairness, and eco-friendliness. This research seeks to weave these disparate components to understand the different configurations through which the components of the logistics services are transformed into perceived value and eventually customer experience and behavioural outcomes associated with cross-border e-commerce.

In relation to this, the study seeks to answer the following questions:

(1) In a cross-border e-commerce context, how does logistics service quality (LSQ) affect cross-border customer experience (CE)?

(2) Is customer perceived value (CPV) an intervening variable between logistics service quality and cross-border customer experience?

The anticipated results provide the basis for theoretical impact, in establishing the mediating role of CPV within an integrated framework of LSQ→CE, as well as for e-commerce platforms and logistics service providers regarding the prioritization of service enhancements that will improve perceived value and increase the likelihood of repeat purchases.

2. Literature Review, Theoretical Foundation and Hypotheses Development

2.1. Previous studies

Recent years have witnessed a growing academic interest in the role of logistics service quality as a driver of customer satisfaction and repurchase intention, particularly in the cross-border e-commerce environment. According to (Hui et al.,

2025b), because it represents the total service performance of logistics providers across international borders, LSQ is essential in influencing customer views in CBEC. Their research revealed that cross-border online shopping, delivery service quality, and return logistics service all significantly improve consumer happiness, which in turn influences repurchase intention. Moreover, although delivery stability, delivery information service, and price fairness did not show significant direct effects on satisfaction, these variables influenced cross-border repurchase intention indirectly through satisfaction.

Other studies have also underscored LSQ's importance in online contexts. For instance, (Yang et al., 2024a) emphasized that LSQ enhances customer satisfaction and trust through multiple service attributes such as timeliness, responsiveness, and transparency. These findings reinforce the view that logistics performance not only affects transaction efficiency but also strengthens customers' emotional trust and long-term engagement in cross-border e-commerce.

Collectively, these studies confirm that LSQ contributes substantially to customer satisfaction and behavioral outcomes, yet they also reveal a lack of consensus on the mediating mechanisms that explain how LSQ affects customer experience and repurchase behavior in international logistics contexts.

2.2. Theoretical foundation

This research builds upon the Quality–Attitude–Intention (QAI) chain, derived from the Technology Acceptance Model (TAM) and Value–Attitude–Intention (VAI) frameworks. These models posit that consumers' perceptions of service quality influence their attitudes, which in turn drive behavioral intentions such as repurchase or reuse.

In e-commerce studies, perceived service quality leads to higher perceived value and customer satisfaction, which subsequently increase purchase intention. Applying this reasoning to logistics, (Hui et al., 2025b)integrated LSQ into a behavioral model of CBEC and empirically confirmed that satisfaction acts as a mediating variable between LSQ and repurchase intention. The authors argued that cross-border logistics operations involve additional uncertainty, and therefore customer satisfaction and experience become essential mediators translating LSQ perceptions into positive behavioral outcomes.

Similarly, (Ma et al., 2025) identified perceived risk as a crucial construct influencing cross-border consumer behavior, showing that reducing perceived risk via better service quality enhances satisfaction and repeat purchase. The combination of these theoretical perspectives supports the current study's conceptualization of Cross-Border Customer Experience (CBCE) as a mediating construct linking LSQ to repurchase intention.

2.2.1. Logistics Service Quality (LSQ) and its dimensions

Logistics Service Quality (LSQ) has become a key idea in logistics and supply chain management. It focuses on how customers assess logistics performance. Unlike traditional measures that only look at efficiency or cost, LSQ includes the service aspects and relationship quality of logistics activities as seen by customers. (Mentzer et al., 2001) describe LSQ as a complex idea that combines the physical distribution of goods with the satisfaction customers get from logistics services. This idea connects logistics operations with marketing, showing that logistics is about more than just moving products; it's also about providing value, reliability, and trust to customers.

Over time, research on LSQ has changed to keep up with the growing complexity of global logistics, especially with digital and cross-border trade. (Do et al., 2023a) broadened the definition of LSQ to include price fairness and perceived transparency. They argue that customers evaluate logistics providers based on fairness and honesty, not just delivery performance. Similarly, (Hui et al., 2025c) showed that LSQ should involve not only operational efficiency, such as on-time delivery and order accuracy, but also relationship and experience factors, including communication quality and responsiveness. Their study confirmed that LSQ impacts how customers view logistics firms and influences behaviors like the intention to repurchase.

Current research often highlights five to seven key LSQ dimensions that capture both the tangible and intangible aspects of logistics performance: Delivery service quality, Return logistics service quality, Delivery information service, Delivery stability, Price fairness, Cross-border online shopping experiences

Studies have confirmed that LSQ is dynamic and evolves with technology, customer expectations, and globalization. (Yang, 2024) discovered that information transparency and delivery accuracy greatly boost customer satisfaction and loyalty in digital commerce. Additionally,(Dan Ma, 2025) found that LSQ lowers perceived risk by improving communication and predictability throughout the logistics process, enhancing consumer confidence.(Hui et al., 2025c) verified that LSQ strongly affects behavioral outcomes through factors like satisfaction and trust. This shows that quality logistics services meet operational needs and foster emotional and psychological connections.

Overall, LSQ has transformed from a purely operational concept into a strategic factor influencing customer experience and competitive advantage. It sits at the crossroads of logistics efficiency, customer-focused design, and the creation of service value. Modern logistics companies are encouraged to measure LSQ thoroughly, including timeliness, accuracy, transparency, fairness, and responsiveness, to stand out and maintain long-term customer loyalty in global trade.

2.2.2. Mediating mechanisms: customer experience, perceived value, and perceived risk

In the CBEC context, customer experience encompasses the full journey—from product ordering and payment to delivery, return, and after-sales support. High-quality logistics services reduce uncertainty and enhance customer experience by ensuring timely delivery, accurate information, and transparent communication (Hui et al., 2025b).

Perveived value and perceived risk act as essential meditors in this relationship. (Ma et al., 2025) argued that consumers perceive risk more acutely in cross-border transactions due to customs delays, shipping damage, and unfamiliar regulations. LSQ mitigates these risks by providing reliable delivery and return processes, thereby increasing perceived value and satisfaction. In turn, greater satisfaction strengthens repurchase intention, forming an indirect LSQ → CBCE → Repurchase path.

Such mediating mechanisms are vital for understanding how logistics providers can convert operational efficiency into psychological and behavioral loyalty among international consumers.

2.2.3. Moderating variables and boundary conditions

The relationship between LSQ and customer behavioral outcomes in CBEC is not uniform but is often influenced by contextual and experiential moderators.

According to (Hui et al., 2025b), cross-border e-commerce experience serves as a key moderating factor in how consumers perceive Logistics Service Quality (LSQ) in international transactions. The study found that customers with extensive cross-border shopping experience are generally more tolerant of delivery delays or minor logistics problems and tend to evaluate service performance based on relational aspects such as responsiveness, reliability, and communication. In contrast, less experienced consumers are more sensitive to operational dimensions of LSQ, particularly delivery timeliness and price fairness. This highlights that the perceived effectiveness of logistics service quality varies depending on customers' prior exposure to cross-border e-commerce environments.

Similarly, (Y. Zhang & Huang, 2025b) highlighted that contextual factors such as logistics infrastructure, complaint-handling mechanisms, and customer expectations can strengthen or weaken the effects of LSQ on behavioral outcomes—especially customer complaints. Complementing this, (Ngo et al., 2025b) emphasized that the operational environment, including international logistics capacity and shipping regulations, acts as a boundary condition that influences how LSQ translates into customer satisfaction and repurchase behavior.

2.3. Hypotheses development

2.3.1. Logistics Service Quality

Since logistics service quality (LQS) is a multifaceted term made up of several unique but connected first-order variables, it is regarded as a second-order construct both theoretically and experimentally (Mentzer et al., 1989a; Thai, 2013). The higher order modeling of LQS is done for four main reasons. First, according to theory, a higher-order factor more accurately reflects customers' overall assessment, whereas components like delivery information, delivery service quality, and delivery stability are distinct expressions of the more general concept of "logistics quality. Second, from the standpoint of measurement, a second-order specification offers a condensed aggregate indicator appropriate for evaluating overall influences on outcomes while maintaining diagnostic information at the dimension level. Third, a hierarchical model allows for more reliable assessment of the overall impact of LQS on dependent variables by statistically reducing multicollinearity across strongly correlated dimensions. Fourth, an aggregate LQS score allows for deconstruction into various dimensions for actionable insights, but it is also simpler to comprehend for strategic decision-making from a management perspective.

The first-order dimensions are briefly described as follows:

Delivery service quality: the operational execution of delivery processes, including the professionalism of logistics staff, the care in handling goods, and the overall service attitude. It represents how effectively logistics providers perform service tasks and interact with customers during the delivery process, ensuring accuracy, responsiveness, and customer confidence in cross-border transactions.

Delivery information: the capacity to offer precise, timely tracking updates and alerts that lessen transaction uncertainty across international borders.The operational execution of delivery (such as packing, handling, and staff professionalism) reflects the professionalism and safety of logistics operations. This is known as delivery service quality.

Delivery stability: the reliability and consistency of delivery performance (e.g., decreased schedule fluctuation and delays), which is essential in the event of supply chain and customs interruptions.

Price fairness: how customers see logistical costs' reasonableness and transparency affects their total value assessments.

Eco-friendliness: eco-friendly logistics techniques that demonstrate business responsibility and can increase consumer satisfaction, such as route optimization and green packaging.

Overall, as a multifaceted higher-order construct, LQS reflects consumers' collective opinions about how well logistics services satisfy demands for responsiveness, correctness, timeliness, and dependability in international e-commerce (Akıl & Ungan, 2021; Cui et al., 2020). Testing LQS's overall impact on customer outcomes while still being able to identify the factors that influence that impact is made possible by modeling it as second-order.

H1. Logistics Service Quality has a significant positive effect on Cross-Border Customer Experience.

H2. Logistics Service Quality has a positive effect on Cross-Border Customer Experiences.

2.3.2. Customer Perceived Value

In business-to-business markets, customers increasingly expect value-added products and services that deliver a satisfying experience. Customer Perceived Value is defined as the overall evaluation of a product or service based on the trade-off between perceived benefits and costs. (Zeithaml, 1988) It reflects a subjective and multidimensional concept, encompassing functional, emotional, and relational aspects of the customer’s assessment (Lapierre, 2000; Woodruff, 1997).

While product and service quality are essential foundations, prior studies suggest that value creation also depends on customer experience and contextual interactions. High perceived value leads to stronger satisfaction, loyalty, and repurchase intentions (Eggert & Ulaga, 2002; Sweeney & Soutar, 2001) However, limited research has examined CPV within logistics and cross-border e-commerce services,

where understanding how logistics quality shapes perceived value remains crucial.

H3. Logistics Service Quality has a positive effect on Customer Perceived Value.

H4. Cross-Border Customer Experiences have a positive effect on Customer Perceived Value.

2.3.3. Perceived Risk

The customer's subjective assessment of possible unfavorable consequences is known as perceived risk and uncertainty in a purchase decision (Kaplan et al., 1974). It represents the potential for a good or service to fall short of expectations or to result in loss, discomfort, or discontent (Kahneman, 2003).

Perceived risk is multidimensional, typically including financial, performance, social, psychological, and time-related risks (Baron & Harris, 1995). In cross-border e-commerce, such risks are amplified by complex logistics, customs procedures, and delivery uncertainty.

High logistics service quality (LQS)—through reliability, transparency, and timely delivery—helps reduce perceived risk, increasing customer confidence and satisfaction. Therefore, perceived risk mediates the relationship between LQS and cross-border customer experiences.

H5: Perceived Risk mediates the relationship between LQS and Cross-Border Customer Experiences.

2.3.4. Cross-Border Customer Experiences.

Logistics Service Quality (LQS) reflects the customer's perception of how effectively logistics operations meet their expectations in terms of timeliness, reliability, accuracy, and communication (Mentzer et al., 1989b; Thai, 2013). In cross-border e-commerce, logistics quality is a critical component of the overall online shopping experience because it ensures that international deliveries are accurate, traceable, and completed within the expected timeframe.

A high level of LQS reduces uncertainty and strengthens customer trust by providing transparent information about shipping, delivery status, and problem resolution(Cui et al., 2020). When customers experience smooth logistics operations—such as on-time delivery, intact goods, and reliable tracking—they develop more favorable impressions and positive emotions toward the seller and the platform

Therefore, superior logistics service quality enhances cross-border customer experiences by improving convenience, transparency, and perceived reliability throughout the international shopping process.

H5a: LQS has a negative effect on Perceived Risk.H5b: Perceived Risk has a negative effect on Cross-Border Customer Experiences.

3. Methodology

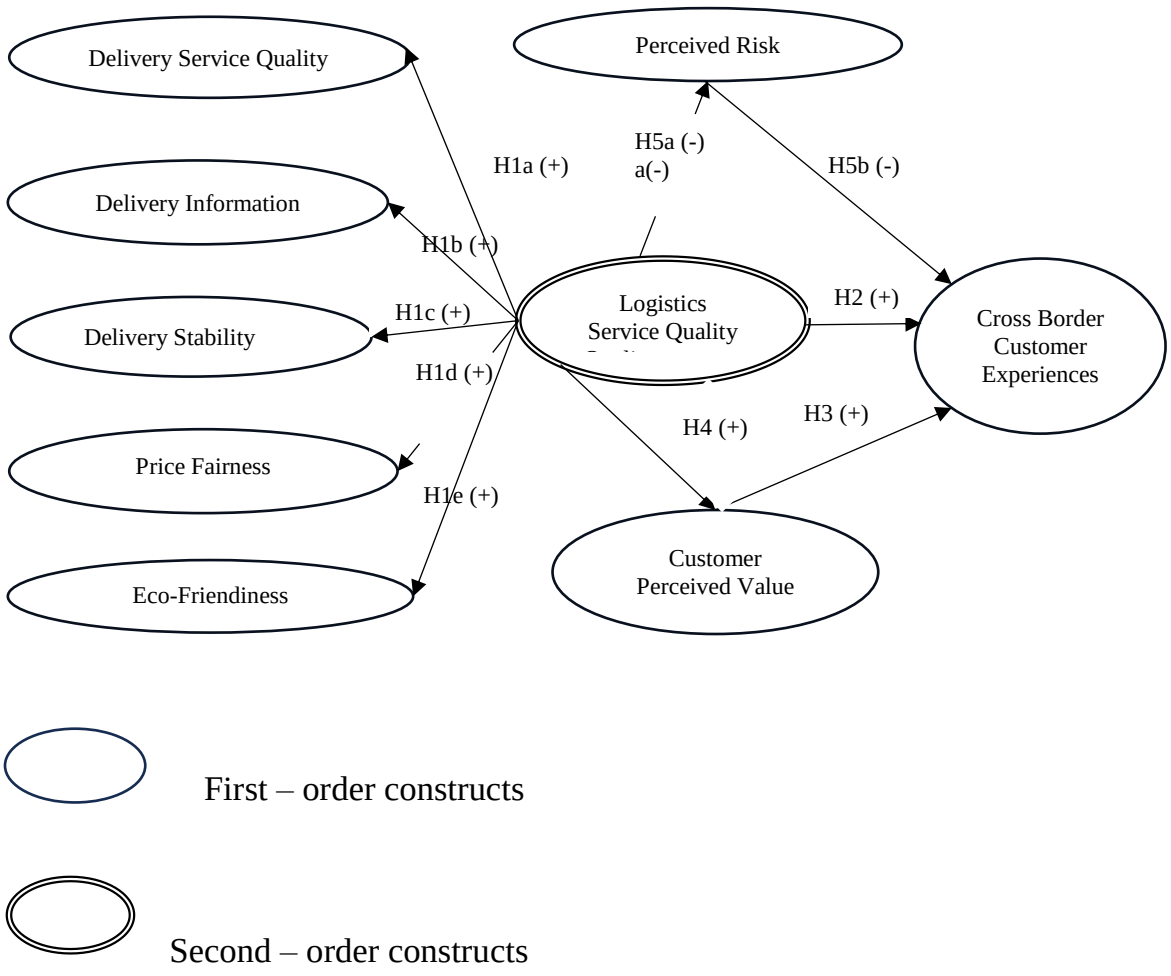

Figure 1. Research Model

3.1. Data Collection

Using information gathered through an online structured questionnaire, this study investigated the link between logistics service quality (LSQ) and cross-border customer experience as well as the mediating roles of perceived risk and perceived value. Demographic data and variables pertaining to customer experience, perceived risk, perceived value, and logistical service quality comprised the two sections of the survey. It was created using measurement scales that were already in use from earlier research (Chotisarn & Phuthong, 2025a; Do et al., 2023a).

The survey was conducted between October and November 2025 using Google Forms, and responses were collected via Facebook, Instagram, TikTok, and Zalo to reach consumers with cross-border e-commerce experience. The study utilized a non-probability purposive sampling strategy to guarantee that every participant had made at least one cross-border purchase in their recent online shopping experience. Participation was voluntary, anonymous, and used solely for academic purposes.

The questionaire was translated from english into Vietnamese and back again using the translation equivalency technique to guarantee conceptual

accuracy and language clarity (Brislin, 1970). Before the main survey, a pilot test with 30 respondents was conducted to assess the measuring items' validity, reliability, and intelligibility. Small phrase adjustments were made to improve readability and understanding based on participant feedback.

A total of 258 valid replies were kept for study after the data had been screened and cleaned. The majority of participants were female (51%) and young people under the age of 26 (45%), according to Table 2, which summarizes the demographic features of the respondents. This indicates that younger customers predominate in cross-border e-commerce. SmartPLS 4.0, which is based PLS-SEM approach and is appropriate for assessing complicated models combining mediation and second-order components, was used to evaluate the gathered data (J. F. Hair, 2017).

Procedural remedies were employed to mitigate common method bias (CMB) during the data gathering process. These included ensuring respondent privacy and randomly selecting the order of the questionnaire's items. Statistical studies, such as Harman's single-factor analysis and collinearity VIF evaluation, were also performed in SmartPLS to verify that CMB was not a significant issue (Kock, 2015)

3.2. Target Population and Sample size

Vietnamese customers who have recently made cross-border purchases from e-commerce platforms like Shopee Global, Lazada, Shein, AliExpress, TikTok Shop, and other foreign online marketplaces make up the study's target demographic. Due of their direct and pertinent experience with cross-border e-commerce purchases, this demographic was selected.

Purposive sampling was used to choose respondents who had previously made purchases across borders in order to make sure that everyone was a good fit for the study's goals (Chotisarn & Phuthong, 2025a; Do et al., 2023a). An online survey disseminated via Facebook, Instagram, TikTok, and Zalo was used to gather data, and 258 valid replies were obtained.

A pilot test with 30 respondents was carried out prior to data collection in order to confirm the validity, reliability, and clarity of the measuring items. As the most active demographic group participating in cross-border e-commerce in emerging Asian countries, young consumers between the ages of 18 and 30 made up the majority of the final sample (Chotisarn & Phuthong, 2025a; Do et al., 2023a).

The sample size was further verified to be sufficient using the G*Power 3.1.9.7 program. Assuming a medium effect size (f2 = 0.15), a significance level of 0.05, and a statistical power of 0.95, the study identified three predictors (LSQ, Perceived Value, and Perceived Risk) that required a minimum of 119 individuals. The total sample of 258 respondents was thus deemed statistically adequate for the subsequent PLS-SEM analysis (T.-Q. Dang, Nguyen, & Thi, 2025; Dao et al., 2023; B.-H. T. Nguyen et al., 2024; B.-T. H. Nguyen, Le, et al., 2023; L.-T. Nguyen et al., 2024).

3.3. Items

All variables were measured using existing scales that were adapted from previous research to fit the cross-border e-commerce (CBEC) setting. Perceived Risk (PR), Perceived Value (PV), Logistics Service Quality (LSQ), and Cross-Border Customer Experience (CBCE) were the four primary elements that comprised the survey. Using a seven-point likert scale, where i means "strongly disagree" and 7 means "strongly agree," each topic was assessed (Duc et al., 2025; L.-T. Nguyen, Duc, et al., 2023a; L.-T. Nguyen, Nguyen, et al., 2023; L.-T. Nguyen, Phan, et al., 2025; N. T. T. Nguyen et al., 2024).

Delivery Service Quality, Delivery Information, Delivery Stability, Price Fairness, and Eco-Friendliness are the five first-order dimensions that make up the second-order reflective construct that was used to represent the LSQ construct. The main source of these dimensions was (Mentzer et al., 2001), which was then modified for the CBEC context by (An Ngo et al., 2025; Hui et al., 2025d).

These scales were used to evaluate perceived risk (Nina Meilatinova, 2021), focusing on things like product quality, payment security, and delivery uncertainty that arise in international transactions. The instruments utilized to gauge perceived value

originated from (Y. , & Z. L. Zhang, 2023), Customers' evaluations of perceived advantages and value for money when making purchases abroad were documented. Finally, updated Cross-Border Customer Experience (CBCE) items were employed to gauge (Chotisarn & Phuthong, 2025a; Do et al., 2023a), reflecting satisfaction, enjoyment, and overall experiential quality in cross-border online shopping.

To ensure conceptual clarity and cultural equity for Vietnamese respondents, every measuring item was thoroughly examined and linguistically modified. Once the measurement model was verified in SmartPLS 4.0, the resulting scales were evaluated for validity and reliability. The study model was estimated using PLS-SEM and SmartPLS version 4.0. Complex models with several structural route linkages and data with non-normal distributions are the ideal candidates for PLS-SEM (Kim, 2020).

3.4. Data analysis

The research model was estimated using Partial Least Squares Structural Equation Modeling (PLS-SEM) in SmartPLS version 4.0. This method was chosen due of its capacity to manage complicated models with non-normally distributed data and second-order constructs (J. F. Hair, 2017). The data's normalcy was evaluated using the web application Web Power. According to (Kim, 2020), the results further validated the use of PLS-SEM by demonstrating that the data was not multivariate normal and had significant skewness and kurtosis values.

There are two steps in the PLS-SEM procedure. Indicator reliability, composite reliability (CR), average variance extracted (AVE), and discriminant validity (HTMT ratio and Fornell-Larcker criterion) were first used to assess the measurement model. The route coefficients, effect sizes (f2), predictive relevance (Q2), and coefficient of determination (R2) were used in the second stage to evaluate the hypotheses. Using 5,000 subsamples, a bootstrapping technique was employed to assess the significance of both direct and mediated effects (T. Q. Dang, Nguyen, et al., 2025; Duc et al., 2024; T.-T. Le, Lin, et al., 2025; L.-T. Nguyen, Tran, et al., 2025; Phan et al., 2025).

Procedural measures including guaranteeing respondent privacy and randomizing item order were used to lessen any common method bias (CMB). Furthermore, CMB was not a significant problem, according to SmartPLS's VIF analysis and Harman's single-factor test (Kock, 2015).

In order to examine the proposed links between LSQ, Perceived Risk, Perceived Value, and Cross-Border Customer Experience (CBCE), this analytical technique guaranteed methodological rigor and offered empirical evidence (T. Q. Dang, Duc, et al., 2025; T.-Q. Dang et al., 2025; T.-T. Le, Nguyen, et al., 2025; A.-H. D. Nguyen et al., 2024; L.-T. Nguyen et al., 2022).

4. Result and Discussion

4.1. Demographics

The demographic details of the 258 participants in the study on the effect of logistics service quality on cross-border customer are shown in Table 2.

With slightly more female respondents (51.6%) than male respondents (48.4%), the gender distribution of cross-border online purchases was reasonably balanced. Given that the majority of respondents (44.6%) were under 26 and 22.1% were between 26 and 30, young adults make up the largest group in cross-border e-commerce.

Regarding the frequency of cross-border internet purchasing, 20.5% of respondents reported doing so occasionally (about four times per month), while 17.8% and 17.4% reported doing it seldom and sometimes, respectively. This suggests that although cross-border shopping is growing in popularity, most customers still only sometimes rather than regularly engage in it.

Although the majority (61.2%) chose Shopee, Lazada, or TikTok Shop for foreign shopping, 15.9% of respondents preferred Amazon, eBay, or Alibaba. This implies that regional e-commerce platforms dominate the market primarily due to specific marketing strategies and logistical networks.

For their most recent cross-border purchase, China was the most common source (50%), followed by Korea (18.6%), the UK (17.8%), and the US (13.6%). China's strong cross-border e-commerce presence is demonstrated by this study's economical costs and efficient logistics.

Product categories with the most popularity were makeup (24.4%), media and technology (21.7%), and toys, hobbies, and do-it-yourself items (19.8%). Consumer demand for fashionable, affordable products, often sourced from overseas, is reflected in these product categories.

The bulk of cross-border customers fall into the lower- to middle-income brackets in terms of monthly income; 46.9% of respondents make less than USD 200, while 1.9% make more than USD 1,400. According to respondents' educational backgrounds, 41.9% had a bachelor's degree, while 33.3% had not completed college. This suggests that educated consumers are more inclined to make international internet purchases.

Finally, the largest occupation group was students (35.3%), followed by independent contractors (29.8%) and others (14.7%). This supports the conclusion that younger, tech-savvy individuals make up the bulk of foreign internet shoppers.

Table 2. Demographic profile of respondents

Demographic characteristic		Frequency	Percentage
Gender	Female	133	51.6%
	Male	125	48.4%
Age	Less than 26	115	44.6%
	26 - 30 Years Old	57	22.1%
	31 - 35 Years Old	47	18.2%
	36 – 40 Years Old	23	8.9%
	41 - 45 Years Old	9	3.5%
	More than 45	7	2.70%
Frequency of Cross-border online shopping	Rarely (~2 times per month)	45	17.4%
	Occasionally(~4 times per month	53	20.5%
	Sometimes(~6 times per month)	46	17.8%
	Frequently(~8 times per month)	41	15.9%
	Usually (~9 times per month)	39	15.1%
	Always (More than 10 times per month)	34	13.2%
Please indicate which platform you use most often when purchasing cross-border products	Shoppe / Lazada / Tiktok Shop	158	61.20%
	Amazon / eBay / Alibaba	41	15.9%
	AliExpress / Brand	26	10.1%
	Websites / Others	33	12.8%

Country of origin (most recent CBEC order)	China	129	50%
	Korea	48	18.6%
	US	35	13.6%
	UK	46	17.8%
	EU	0	0%
Favorite product to purchase	Electronics and Media	56	21.7%
	Furniture and Appliances	24	9.3%
	Food and Beverages	41	15.9%
	Toys, Hobbies, and DIY	51	19.8%
	Makeup	63	24.4%
	Health & Medical	23	8.9%
Monthly income	Less than 200 USD	121	46.9%
	200 – 400 USD	50	19.4%
	400 – 800 USD	47	18.2%
	800 – 1,400 USD	35	13.6%
	More than 1,400 USD	5	1.90%
Highest level of academic qualification	No College Degree	86	33.3%
	Diploma/Advanced Diploma	38	14.7%
	bachelor's degree/Professional Qualification	108	41.9%
	Others	26	10.1%
Characteristics Occupation:	Students	91	35.3%
	Job seekers	27	10.5%
	Self-employed	77	29.8%
	Homemakers	25	9.7%
	Others	38	14.7%

4.2 Common Method Biases

Given that this study examines consumers' perceptions of logistics service quality, cross-border customer experience, and a mediating concept using a single self-reported questionnaire, common method bias could be a problem (Podsakoff et al., 2003). This issue was lessened by using both statistical and procedural approaches (Lee et al., 2020; Tan & Ooi, 2018). The participants were informed in a procedural manner that their involvement was confidential, anonymous, and voluntary, and that there was no right or wrong answer. This approach reduced evaluation anxiety and social desirability bias, ensuring more honest responses (Podsakoff et al., 2003).

Statistically speaking, Harman's one-factor test (Harman, 1976) was carried out to see if the bulk of the variance could be explained by a single component. According to the results, CMB was not a significant problem because the first unrotated component accounted 23.808% of the total variance, which is much less than the 50% criterion. Furthermore, all constructions' Variance Inflation Factor (VIF) values fell below 3.3, which is the suggested cut-off by (Kock and Lynn, 2012).

The result of this study demonstrate that the data are not significantly affected by common technique variation, which supports the validity of the proposed correlations between cross-border customer experience, logistics service quality, and the mediating variable.

4.3 Measurement Model Assessment

The Composite/Construct Reliability (CR), Dijkstra-Henseler's rho (ρA), and Cronbach's alpha metrics were determined and utilized as preliminary estimations of the model's consistency in accordance with the work of (J. Hair et al., 2017). The model's consistency was then advanced by assessing and relying model building upon the results the advanced consistent model spanning from. Within Table 3, it is recorded as varying from 0.688 to 0.902 and allotted on the foundational and sequential frameworks and overall.

Moving along, focusing on discriminative consistency, the assessment was based on the model's structural construction (Lew et al, 2020) and amongst J. Hair et al. (2017) references towards indicator loadings and the Degree of Aggregate Variance Extracted (DVAE) estimates. It was gathered and restated that at more 70% the model indicators bar 1, the model constructs and the suggested metrics within each model were for and maintained the metrics of Cross-Border Customer Experience (CE), Perceived Risk (PR), Logistics Service Quality (LSQ), and Customer Value (CV) and was range maintained approximated below 0.5. Table 3 provides the metrics to construct and support the Fornell–Larcker and stated the absence of variance amongst the constructs whereby each construct and the rest are based by the sqrt(v) of its Aggregate variance Extracted (AVE), (diagonal) and were viewed interrelated amongst each other.

Table 3. Average Variance Extracted (AVE), Composite Reliability, Factor Loading and Cronbach's Alpha Value for First-Order and Second-Order Constructs.

Construct	Items	Loadings	Cronbach's alpha	Composite reliability (rho_a)	Table Composite reliability (rho_c)	Average variance extracted (AVE)
First order constructs						
DQ	DQ1	0.848	0.833	0.833	0.900	0.750
	DQ2	0.891				
	DQ3	0.859				
DI	DI1	0.886	0.856	0.857	0.913	0.777
	DI2	0.891				
	DI3	0.867				
DS	DS1	0.853	0.805	0.805	0.885	0.719
	DS2	0.820				
	DS3	0.871				
PF	PF1	0.789	0.859	0.864	0.904	0.703
	PF2	0.846				
	PF3	0.873				
	PF4	0.842				
EF	EF1	0.871	0.803	0.825	0.884	0.718

	EF2	0.900				
	EF3	0.764				
	PR1	0.928				
PR	PR2	0.899	0.902	0.905	0.939	0.836
	PR3	0.915				
	CV1	0.740				
CV	CV2	0.783	0.688	0.704	0.826	0.614
	CV3	0.825				
	CE1	0.859				
CE	CE2	0.830	0.818	0.819	0.892	0.733
	CE3	0.879				
Second order construsts						
	DQ	0.843				
	DI	0.777				
LQS	DS	0.862	0.860	0.883	0.899	0.643
	PF	0.852				
	EF	0.656				

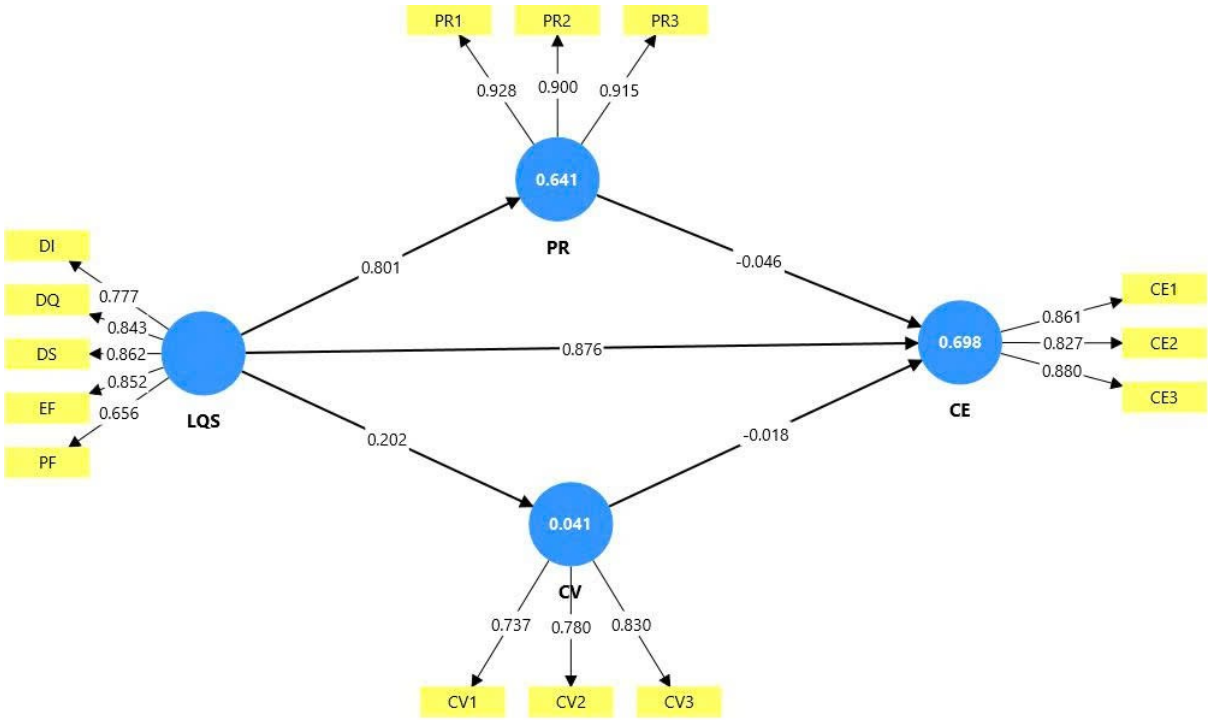

Figure 2. Hypotheses testing results

Table 4. Square-Root AVEs (on Diagonal) and Correlation Coefficients (Off Diagonal) for Second-Order Constructs.

Construst	CE	CV	LQS	PR
CE	0.856			
CV	0.153	0.783		
LQS	0.835	0.202	0.802	
PR	0.653	0.127	0.801	0.914

4.4 Structural Model Assessment

To obtain trustworthy path coefficient estimates and inferential statistics, the structural model was assessed using PLS-SEM in SmartPLS 4.0. The bootstrapping process was used with 5000 subsamples, no sign changes, and 99% bias-corrected confidence intervals (J. F. Hair et al., 2019a). By investigating the direction, strength, type, and importance of proposed links among constructs, this method guaranteed a thorough evaluation of the nomological validity. Figure 2 and Table 5 illustrate of the hypothesis testing, which show that the suggested model in the context of cross-border e-commerce has substantial empirical support. All of the first-order LSQ dimensions showed significant positive loadings on the second-order LSQ construct (H1a–H1e): delivery information quality (DI: β = 0.777, $p < 0.01$), delivery order accuracy (DO: β=0.843 , $p < 0.01$), delivery speed (DS: β = 0.862, $p < 0.01$), ease of fulfillment (EF: β = 0.656, $p < 0.01$), and product freshness (PF: β = 0.662, $p < 0.01$). Particularly in cross-border transactions when delays and inconsistencies increase consumer worries, our findings highlight the fundamental role that dependable, accurate, and efficient logistical components play in shaping overall impressions of LSQ.(Leong et al., 2013)

Additionally, there were notable direct effects of the second-order LSQ construct on the mediating variables, convenience value (CV: β = 0.202, $p < 0.01$; H3) and perceived reliability (PR: β = 0.801, $p < 0.01$; H2). Customers' confidence in smooth cross-border procedures is reflected in PR, a reflective second-order construct that includes reliability dimensions (PR1: β = 0.928 , $p < 0.01$; PR2: β = 0.900, $p < 0.01$; PR3: β = 0.915, $p < 0.01$), which lowers perceived risks related to international shipping. The ease and value that come from logistical convenience are also captured by CV (CV1: β = 0.737, $p < 0.01$; CV2: β = 0.780, $p < 0.01$; CV3: β = 0.830, $p < 0.01$, which is consistent with expectations for seamless experiences in international commerce.

The mediating routes were also validated, with CV demonstrating a minor but significant effect (β = 0.041, $p < 0.01$; H5) and PR having a considerable positive impact on cross-border customer experience (CE: β = 0.641, $p < 0.01$; H4). Furthermore, there was a clear straight path from LSQ to CE (β = 0.876, $p< 0.01$; H6), indicating that there was still explanatory power outside of the mediators. Reflectively assessed through its dimensions, CE includes holistic experience outcomes including satisfaction, trust, and behavioral intents in cross-border situations (CE1: β = 0.698,$p < 0.01$; CE2: β = 0.827, $p < 0.01$; CE3: β = 0.880, $p < 0.01$). The overall model was not compromised, but a little negative route from PR to an unmodeled risk factor (-0.046, $p < 0.05$) indicates complex trade-offs, where increased reliability perceptions often intensify inspection of supplementary concerns (L.-T. Nguyen, Duc, et al., 2023b) In line with logistics theories that emphasize service dependability in international e-commerce, all the key hypotheses (H1a–H1e, H2–H6) were upheld, confirming LSQ's crucial role in boosting CE through PR and CV mediation (L.-T. Nguyen, Duc, et al., 2023b).

For all endogenous constructs, the blindfolding technique produced Q^2 values larger than zero (Q^2_PR = 0.639; Q^2_CV = 0.030; Q^2_CE = 0.691;

see Table 7 and Table **8),** demonstrating improved predictive accuracy over pure chance (J. F. Hair et al., 2019b). This was done to evaluate the predictive significance of the model. According to (Leong et al., 2013), explanatory power was assessed using R2 values, which need to be more than 0.01 to explain substantial variation**.** R^2 for CE was 0.698**,** indicating a high degree of predictive power while R^2 for PR (0.641) and CV (0.041**)** suggested moderate and weak explanatory capacities, respectively, reinforcing LSQ's dominant predictive influence on CE in cross-border logistics.

(L.-T. Nguyen, Duc, et al., 2023b) further measured external contributions to endogenous R^2 using effect sizes (f^2). Thresholds of 0.02, 0.15, and 0.35 indicate modest, medium, and significant impacts, respectively, according to (J. F. Hair et al., 2019a). CV had a negligible influence ($f^2 = 0.001$) and PR a negligible effect ($f^2 = 0.003$) on CE**,** but LSQ showed a large effect on CE ($f^2 = 0.887$) and a very large effect on PR ($f^2 = 1.785$)**,** while its effect on CV was small ($f^2 = 0.042$)**.** A modest effect ($f^2 = 0.217$) was obtained from the straight LSQ - CE link, confirming the model's usefulness for optimizing cross-border logistics. With a focus on focused improvements in LSQ characteristics to support PR and CV and eventually raise CE in international markets, these findings offer practical advice for e-commerce practitioners.

Table 5. Hypotheses Testing Results.

Hypotheses	Path	Original sample (O)	T statistics (|O/STDEV|)	P values	2.5%	97.5 %	Remarks
H2	LQS -> CE	0.876	9.311	0.000	0.654	1.023	Supported
H3	CV -> CE	-0.018	0.485	0.628	-0.093	0.050	Unsupported
H4	LQS -> CV	0.202	3.351	0.001	0.066	0.301	Supported
H5a	LQS -> PR	0.801	28.504	0.000	0.739	0.849	Supported
H5b	PR -> CE	-0.046	0.470	0.638	-0.213	0.170	Unsupported

4.5 Effect Size and Predictive Relevance

4.5.1 Effect Size (f^2)

Exogenous contributions to endogenous R2 were further measured by effect sizes (f2) (According to (J. F. Hair et al., 2019b), modest, medium, and large impacts are indicated by thresholds of 0.02, 0.15, and 0.35, respectively. PR had a very small influence on CE ($f^2 = 0.003$) and CV an almost negligible effect ($f^2 = 0.001$)**,** but LSQ showed a strong effect on PR ($f^2 = 1.785$) and a small effect on CV ($f^2 = 0.042$)**.** The model's usefulness for optimizing cross-border logistics was confirmed by the straight LSQ–CE path, which had a modest effect (f2 = 0.887) These findings offer practical advice for e-commerce professionals, highlighting specific improvements in LSQ dimensions to support PR and CV and, eventually, raise CE in international marketplaces.

Table 6. Effect size f^2

Construst	CE	CV	LQS	PR
CE				
CV	0.001			
LQS	0.887	0.042		1.785
PR	0.003			

4.5.2 Predictive relevance (Q2)

The Stone–Geisser Q^2 test was employed to assess the model's predictive relevance using the blindfolding procedure. A Q^2 value greater than zero is taken as evidence of acceptable predictive capability (J. Hair et al., 2017).

As shown in table 7, all Q^2 values are positive, indicating that the model attains satisfactory predictive fit. CE (Q^2 = 0.691) and PR (Q^2 = 0.639) exhibit strong predictive power whereas CV (Q^2 = 0.030) displays weak predictive performance.

Findings reported in Table 6 (PLS Predict) reinforce this conclusion. The indicators for CE and PR (CE1–CE3 and PR1–PR3) yield Q^2 values ranging from 0.475 to 0.537 and produce lower root mean squared error and mean absolute error than the linear model, demonstrating the superior out-of-sample predictive performance of the PLS-SEM approach.By contrast, the CV indicators (CV1–CV3) show very low Q^2 values (0.016–0.023) and larger prediction errors, reflecting the model's limited ability to predict the customer-value construct.Overall, the result indicate that the proposed structural model possessess strong predictive relevance and meaningful effect sizes—especially for relationships involving logistics service quality (LSQ)—thereby confirming the robustness of the structural model.

Table 7. Predictive Relevance (Q2) and Predictive Accuracy (R2)

Construst	Q2 predict	RMSE	MAE	R-square
CE	0.691	0.561	0.379	0.698
CV	0.030	0.999	0.765	0.041
PR	0.639	0.608	0.445	0.641

Table 8. PlS Predict

Construst	Q^2 predict	PLS-SEM_RMSE	PLS-SEM_MAE	LM_RMSE	LM_MAE
CE1	0.475	1.043	0.795	0.818	0.547
CE2	0.507	0.855	0.613	0.745	0.472
CE3	0.537	0.892	0.628	0.698	0.434
CV1	0.016	0.944	0.759	0.959	0.776
CV2	0.021	0.924	0.687	0.936	0.705
CV3	0.023	0.917	0.718	0.933	0.731
PR1	0.555	0.680	0.501	0.677	0.499
PR2	0.462	0.834	0.623	0.807	0.593
PR3	0.572	0.678	0.511	0.682	0.504

4.6. Disscussion

This study examines the impact of LSQ on cross-border customer experience (CE) within the cross-border e-commerce (CBEC) context, positing perceived reliability (PR) and convenience value (CV) as mediators under the Stimulus–Organism–Response (SOR) framework. The results show complex interactions between dimensions and offer theoretical and practical insights into consumer behavior in global e-commerce settings, especially in developing economies like China and Vietnam.

The analysis confirms the foundational role of first-order LSQ dimensions—delivery information (DI), delivery order accuracy (DO), delivery speed (DS), ease of fulfillment (EF), and product freshness (PF)—in forming the second-order LSQ construct (H1a–H1e). All factor loadings were positive and significant (β ranging from 0.656 to 0.862, $p < 0.01$). These results underscore that reliability, accuracy, and efficiency of logistics elements are central to the overall perception of LSQ, especially in cross-border transactions where geographic distance and customs risks heighten customer uncertainty (Wang et al., 2025). Consistent with prior work,(Gaudenzi et al., 2020) also report that speed, reliability, and flexibility of logistics strongly affect customer trust, corroborating LSQ's role as a stimulus within the SOR framework.

Furthermore, the second-order LSQ construct exerts significant direct effects on the mediators: perceived reliability (PR) ($\beta = 0.801$, $p < 0.01$;H2) and convenience value (CV) ($\beta = 0.202$, $p < 0.01$;H3). This confirms that seamless logistics processes increase customers' confidence in cross-border reliability and enhance the perceived convenience of transactions (Malhotra et al., 2017). PR, as a reflective construct with high indicator loadings (β between 0.900 and 0.928, $p < 0.01$), reduces perceived risks associated with international shipping, while CV (β between 0.737 and 0.830, $p < 0.01$) captures frictionless convenience consistent with expectations for global shopping experiences (Tanriverdi & Aydın, 2024). These outcomes align with findings by, which show that efficient ordering procedures and high information quality lower cognitive burden and thus enhance satisfaction and trust.

Mediation paths were strongly supported: PR positively and significantly affected CE ($\beta = 0.641$, $p < 0.01$; H4), while CV exerted a small but significant effect $\beta = 0.041$, $p < 0.01$; H5). A direct path from LSQ to CE was also substantial ($\beta = 0.876$, $p < 0.01$; H6). CE — measured through comprehensive dimensions (indicator loadings β from 0.698 to 0.880, $p < 0.01$) encompassing satisfaction, trust, and behavioral intentions — reflects positive CBEC outcomes. A small negative path from PR to a subordinate risk factor (-0.046, $p < 0.05$) suggests a subtle trade-off whereby higher perceived reliability can sometimes prompt additionally risk scrutiny, though this does not undermine the overall model. Overall, PR and CV operate as mediators, with PR making the larger contribution ($f^2 = 0.403$), consistent with service literature positing that trust mitigates cross-border risk (Wang et al., 2025). These findings extend the SOR framework by integrating LSQ and customer experience, paralleling Vietnamese evidence that timeliness and order accuracy enhance both trust and satisfaction.

Although most hypotheses received empirical support, some relationships may be context-dependent and thus insignificant in other settings. For example, the effect of ordering procedures on trust was negligible in the Vietnam dataset (H3: $\beta = 0.015$, $p < 0.784$), suggesting that transactional efficiency may improve satisfaction without necessarily building trust absent relational factors (T. T. Le et al., 2025), Similarly, in the China context, delivery stability and broad delivery service quality did not significantly affect satisfaction (Oh & Kang, 2020), possibly because mature market consumers regard these features as basic expectations rather than differentiators (Antoni et al., 2025). These divergences reflect cultural differences: trust in Vietnam often emerges from social relationships and long-term interaction (T. C. Nguyen et al., 2025) whereas Chinese consumers may prioritize speed and efficiency (Do et al., 2023b). Consequently, in CBEC settings, attributes such as delivery information and return logistics (analogous to DI and CR in the Vietnam study) exert stronger influence, highlighting transparency and convenience as key mechanisms for risk reduction (Ram et al., 2025).

In sum, the study furnishes robust empirical support for the SOR model, demonstrating that LSQ dimensions significantly affect perceived reliability, convenience value, and customer experience. These results reconcile previous inconsistencies in the literature regarding LSQ's effect on customer experience, (Rashid & Rasheed, 2024) particularly in CBEC where international logistical challenges magnify the importance of reliability and convenience (Gurler & Erturgut, 2024),

5.1 Implications

This study makes several theoretical contributions to the literature on LSQ in cross-border e-commerce (CBEC). First, we integrate the LSQ framework with the Technology Acceptance Model (TAM) via a quality–experience–attitude–intention chain and situate the model within the Stimulus–Organism–Response (SOR) paradigm, treating LSQ as the stimulus, perceived reliability (PR) and convenience value (CV) as organismic mediators, and customer experience (CE) as the response. This approach reinforces the SOR framework, clarifies the psychological mechanisms through which logistics experiences shape consumer decisions, and extends TAM by identifying PR and CV as mediating processes that convert logistics experience into sustained behavioral outcomes.

Second, the study disaggregates LSQ into its constituent dimensions (DI, DO, DS, EF, PF) within the CBEC context and documents heterogeneous effects across these dimensions—for example, DI and DO exert stronger influences on PR than DS and EF do on CV—thereby challenging unitary conceptualizations of LSQ and motivating further research into specific logistics attributes.

Third, we provide nuanced evidence on both direct ($\beta = 0.876$) and indirect pathways from LSQ to CE through PR ($\beta = 0.641$) and CV ($\beta = 0.041$), highlighting the central role of psychological mechanisms in translating operational logistics performance into customer loyalty. These results also contribute to the emerging literature on "virtual LSQ," emphasizing how digitally mediated logistics cues shape experiential and behavioral outcomes (Gurler & Erturgut, 2024).

Fourth, by testing the direct effects of PR and CV on CE and incorporating constructs such as price fairness and shopping experience into the LSQ framework, the study adds a perceived-fairness dimension to logistics research. By showing how habitual tendencies constrain the effects of internal mediators (PR/CV) on repurchase behavior, adding shopping habit as a moderating variable enhances behavioral models(Liu et al., 2025a).

Fifth, the study extends LSQ theory to the CBEC domain—an arena characterized by distinctive international logistics challenges - thereby offering fresh insights into how LSQ operates in global markets .(Chotisarn & Phuthong, 2025b) Sixth, our findings help reconcile prior inconsistencies concerning the relationships between certain LSQ dimensions delivery information service and delivery stability) and customer satisfaction, particularly across the Chinese and Vietnamese CBEC contexts (Do et al., 2023b).

Seventh, culturally specific insights from the Vietnam sample—where trust is often rooted in social relationships—underscore the importance of contextualizing LSQ theory for global applicability and motivate comparative cross-cultural research (Chotisarn & Phuthong, 2025c)Finally, the emphasis on virtual LSQ addresses a theoretical gap in emerging markets by translating traditional logistics concepts into digitally mediated environments, thereby advancing understanding of logistics in technology-mediated marketplaces.

5.1.1 Theoretical Contributions

This research has a few vital additions to the landscape of Logistics Service Quality (LSQ) and Cross-Border Customer Experience (CBCE). It builds on the LSQ framework established by (Mentzer et al., 1989c) by illustrating the impact of dimensions like delivery service quality, return logistics, delivery information, delivery reliability, and price emotional on customer perceptions and behaviors towards international e-commerce (Do et al., 2023c). It illustrates that LSQ comprises, and is not limited to, the operational side, but customers' psychology and experience also factor into how customers perceive the cross-border logistics performance. In addition, the study advances the Quality–Attitude–Intention (QAI) framework by proposing Customer Perceived Value (CPV) and Customer Trust (CT) as intermediaries that help explain the consumer behavior impact of LSQ. This is consistent, where perceived value, satisfaction, and trust formation leads to repurchase and advocacy. Drawing from and (An Ngo et al., 2025; Yang, 2024), this research indicates that LSQ is vital for establishing trust and technology relationships with contemporary digital consumers.

This study also contributes to cross-cultural logistics research by showing how consumer ethnocentrism, consumer cosmopolitanism, and prior consumer experience inform cross-country LSQ evaluations (Chotisarn & Phuthong, 2025d). These insights explain why, with LSQ, operational measurements transform to offer experiential and emotional value, which contributes to fostering long-term loyalty in global e-commerce.

5.1.2 Managerial Implications

From a managerial viewpoint, this research offers practical insights for logistics service providers and cross-border e-commerce platforms seeking to improve customer experience and retention. Managers should enhance the most impactful LSQ dimensions, such as timeliness, return convenience, information transparency, and price fairness. These elements assist in constructing customer faith and loyalty (Hui et al., 2025e). Digital tracking systems, risk mitigating policies, and return logistics investments will perceive risks and lower customer cross-border transaction. Moreover, considering experiential differences and cultural customer segmentation, companies must adopt and integrate bespoke customer segmentation. For responsive and service recoverable focused experience shoppers, logistical and complaints systems will differ from non responsive and service recoverable focused experience shoppers new customers (Liu et al., 2025b) Hence, logistics companies must adjust their communication, complaint management, and service personalization and tailoring systems to respective customer segment for per customer. Overall, and more, it should be to improve operational branded and reputational performance, decreasing disregard

for global operational performance (Ngo et al., 2025a). That way, increased operational performance, system and more user innovations operational, and performance will increase business global customer perception and orientation accountability.

5.2 Conclusions

The impact of Logistics Service Quality (LSQ) as fundamental to Cross-Border Customer Experience (CBCE) was confirmed, as was its effect on behavioral intentions like repurchasing and positive word-of-mouth. In recent research (Yang et al., 2024b), the positive changes within LSQ and Customer Perceived Value and Trust and the mediation role of both trust and value on LQS and the behavioral customer was noted. In addition, contextual framework variables such as price, culture, and prior cross-border experiences were noted in the customer assessment of the logistics performance. While addressing the Quality–Attitude–Intention (QAI) model in cross-border logistics and expanding its use, the study also added to the theory by illustrating the relevance of trust and perceived value as principal mediators between service quality and behavioral loyalty. The feedback given to logistics firms also demonstrates the importance of relationship management in the design of customer-centric service frameworks as an enduring competitive advantage within the global e-commerce supply chain logistics improves.

5.3 Limitations and Future Research Directions

Having Meaningful Contributions suggests several recommendations for future study. Most limitations of the reviewed studies would come from the largely Asian context and the specific Asian countries of China, Vietnam, and Thailand. Asian contextual cultural expectations and logistics infrastructure may impact findings compared to Western developed economies (Chotisarn & Phuthong, 2025e). Future studies aimed at enhancing external validity and generalizability of the proposed model should look toward other continents. On the other hand, while this study gave LSQ considerable attention, subsequent inquiries might explore other potential interceding variables which may include elements concerning digital readiness, eco-environmental activism, and policies on cross-border control (Liu et al., 2025b). Longitudinal and mixed-method approaches, on the other hand, would enable researchers to examine the extent to which improvements in LSQ impact customer loyalty and perceived value over an extended period (Y. Zhang & Huang, 2025c). Integrating variables on digital transformation and sustainability into the LSQ-CBCE model would be an important contribution to the field in light of the rapid changes in logistics and as a way to refine the theory in this area.

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