



Factors influencing consumer trust in online shopping and its impact on online purchase decisions: A study in Vietnam



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ABSTRACT

Vietnam's rapidly growing e-commerce market continues to face challenges related to consumer trust. This study examines the factors influencing consumer trust and its effect on online purchase decisions among Vietnamese consumers. Using PLS-SEM with 414 valid responses, the study tests eleven hypotheses, focusing on a cue-to-experience mechanism in which supplier reputation and supplier size are examined both as direct cues of trust and as upstream cues whose effects may be mediated by website quality and perceived service quality. The bootstrapped specific indirect effects indicate significant mediation of the relationship between supplier reputation and trust through website quality and perceived service quality, as well as of the relationship between supplier size and trust through perceived service quality. However, the indirect effect of supplier size on trust through website quality is not significant at the 5% level. Website quality, perceived service quality, information security, and reference-group influence directly strengthen consumer trust, while trust positively influences online purchase decisions. This study contributes to the literature by showing that symbolic supplier cues do not automatically build consumer trust in the Vietnamese context; rather, much of their influence is realized through observable digital and service experiences. The findings provide practical guidance for online retailers on improving website transparency, live support, return and refund procedures, data-security communication, verified reviews, and after-sales service.

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1. Introduction

Vietnam's e-commerce sector is experiencing phenomenal growth, fueled by a robust economy, expanding trade, and a burgeoning middle class with a taste for online retail. Market research paints a promising picture, with projections indicating a surge in Vietnam's e-commerce market from \$13.9 billion USD in 2024 to \$23.65 billion USD by 2029. This growth is mirrored by a projected increase in e-commerce users, reaching an estimated 24.6 million by 2029. However, despite this optimistic outlook, a critical gap exists - consumer trust.

Unlike traditional brick-and-mortar stores, online platforms present inherent challenges. Consumers

lack the ability to physically assess products before purchase, a factor significantly amplifying the perceived risk associated with online shopping. This inherent risk is further compounded by the complexities of the online environment, including issues such as misleading information, the presence of cybercriminals, and the threat of malicious software compromising personal data.

The challenge of trust in Vietnamese e-commerce is further amplified by the cultural context. Traditional Vietnamese commerce revolves around physical inspection of goods, a stark contrast to online reliance solely on website information and visuals. The prevalence of counterfeit products further fuels consumer wariness, particularly when in-person examination is impossible. Consequently, Vietnamese consumers often prioritize purchases facilitated by personal relationships, leading to hesitation when engaging with unfamiliar online vendors.

For Vietnamese e-commerce to flourish, fostering consumer trust is paramount. This paper delves

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deeper into the factors influencing consumer trust in online shopping and analyzes its impact on purchasing decisions within the Vietnamese context.

Recent studies continue to identify online trust, security, delivery performance, service experience, and social information as central to e-commerce behavior, yet they also indicate that trust formation is context-sensitive across emerging and advanced markets (Handoyo, 2024; Jasil et al., 2022; Mofokeng, 2023; Quintus et al., 2024). The unresolved issue is therefore not simply whether supplier reputation and size matter, but how these relatively distal symbolic cues become credible to consumers under online uncertainty. This study addresses that gap by testing a cue-to-experience conversion mechanism: supplier reputation and supplier size are modeled simultaneously as direct antecedents of trust and as upstream cues transmitted through two observable consumer-experience mechanisms—website quality and perceived service quality. The inclusion of reference-group influence further captures socially validated trust formation that is especially relevant to a relational consumption environment, while avoiding the unsupported claim that culture itself is directly measured in the present model.

The study makes three specific contributions. First, it distinguishes direct trust effects from specific indirect effects rather than assuming that reputation or organizational size automatically creates trust. Second, it tests whether website quality and perceived service quality convert abstract supplier cues into concrete evidence of reliability, allowing the non-significant direct effects of reputation and size to be theoretically informative rather than treated merely as null findings. Third, it integrates experience-based and socially validated cues in one PLS-SEM model and interprets their relative roles in Vietnam, thereby providing a more mechanism-oriented contribution than a simple country replication.

2. Literature review

2.1. Online shopping

Häubl and Trifts (2000) defined online shopping as an online transaction made by a customer through a computer interface connected and interoperable with a retailer's digital stores or websites over a computer network. This definition emphasizes the role of technology in facilitating the buying process, where digital interfaces serve as the primary medium for transactions. Similarly, Monsuéré et al. (2004) considered online shopping as consumer behavior in making purchases through websites used for online purchases or online stores, highlighting the behavioral aspect of consumers engaging with digital retail environments.

Expanding on these definitions, Ha and Stoel (2009) proposed that online shopping persuades consumers to purchase by allowing them to perceive benefits and enjoyment during the purchase process.

This suggests that the experiential aspect of online shopping, including ease of navigation, interactive elements, and personalized experiences, plays a crucial role in encouraging purchase behavior. Furthermore, Cheung and Lee (2001) asserted that confidence in the quality of services or products, the reliability of information, and the robustness of the system are essential for customer satisfaction with online purchases. These factors underscore the importance of trust and reliability in online shopping environments.

Consumers shopping online must have access to the internet and a reasonable payment method to complete transactions. The accessibility and affordability of internet services are thus fundamental prerequisites for engaging in online shopping. Moreover, the education level and income of consumers positively influence their perception of online shopping. Educated and higher-income consumers are more likely to appreciate the convenience and variety offered by online platforms, and they are often more familiar with digital technologies.

Increasing consumers' exposure to technology enhances their positive attitude towards these new shopping channels. As consumers become more accustomed to using digital devices and online services in their daily lives, they are more likely to perceive online shopping as a convenient and efficient alternative to traditional retail.

The process of online shopping typically begins with consumers searching for products to buy. They can either go directly to the websites of retailers or use shopping search engines to explore alternative suppliers. Once consumers find the desired products, they use a shopping cart tool to accumulate multiple items and adjust quantities, mirroring the experience of picking items and placing them in a cart in a physical store. This digital shopping cart allows consumers to manage their selected items easily and proceed to checkout when ready.

During the checkout step, payment and shipping information is collected. Some stores offer the convenience of logging into a website with a permanent online account, which can expedite the checkout process by storing all necessary information. After completing the transaction, consumers typically receive a confirmation email. Payment methods vary, with credit cards being the most common. However, some online sales systems offer alternative payment methods such as mobile and landline payments, pay on delivery (COD), debit cards, cryptocurrencies, gift cards, postal money transfer, and other forms of money transfer.

2.2. Trust

Trust is a multifaceted concept that has been extensively explored in sociology, psychology, and business. Lewis and Weigert (1985) defined trust as confidence in the competence and responsibility of actors under conditions of risk. This definition highlights the inherent risk and expectation of

responsible behavior in trust relationships, emphasizing that trust involves a belief in the competence and reliability of others.

Mayer et al. (1995) provided a widely recognized definition, describing trust as the willingness of one party to be vulnerable to another party based on the expectation that the trustee will perform important actions beneficial to the trustor, irrespective of the trustor's ability to monitor or control the trustee. This definition has been influential in subsequent studies because it reflects two core components of trust: willingness to accept vulnerability and positive expectations about the trustee's behavior.

Expanding on these foundational definitions, Doney and Cannon (1997) conceptualized trust in buyer-seller relationships as perceived credibility and benevolence. This perspective introduces the idea that trust is not only about expectations but also about the fulfillment of those expectations through reliable exchange behavior.

Bhattacharya et al. (1998) conceptualized trust as the ability to predict and rely on others under uncertain and potentially risky circumstances. This definition underscores the predictive nature of trust, where past experiences and behaviors inform expectations about future actions.

2.3. Trust in online shopping

Trust plays a fundamental role in commerce, especially in the context of electronic transactions (Gefen et al., 2003; Lăzăroiu et al., 2020). It serves as the foundation upon which successful online business exchanges are built because transactions occur between consumers and sellers over the Internet without direct physical interaction. The success of these transactions therefore depends heavily on consumers' trust in the virtual environment. Researchers have offered diverse conceptualizations of trust in online shopping, reflecting the complex nature of this phenomenon:

- Belief in integrity, goodwill, and ability: Trust is perceived as a set of beliefs primarily focused on the integrity, goodwill, and ability of the parties involved (McKnight and Chervany, 2001; Tan and Sutherland, 2004). This perspective emphasizes confidence in the ethical conduct and capabilities of online sellers.
- Expectation of trustworthiness: Trust is defined as one party's belief that the other party can be trusted or as a party's willingness to be affected by the other party's actions (Gefen, 2000; McKnight et al., 1998). This viewpoint highlights the relational aspect of trust, where trust is built on the expectation of reliability and integrity in interactions.
- Confidence and security: Trust entails confidence and a sense of security when interacting with the other party (Suh and Han, 2003; Yoon, 2002). This perspective emphasizes the psychological dimension of trust, where consumers feel assured

and protected in their interactions with online sellers.

Rousseau et al. (1998) characterized trust as a psychological state comprising the intention to accept vulnerability based on positive expectations about another party's intentions and behaviors in an environment of risk and interdependence. In the online business environment, trust is indispensable due to anonymity, lack of control, uncertainty, and potential opportunism (Shankar et al., 2002). Lee and Turban (2001) further defined consumer trust in online shopping as a consumer's willingness to be influenced by a supplier's actions in an online purchasing transaction, based on the expectation that suppliers will act appropriately regardless of the consumer's ability to monitor and control them. Pavlou (2003) suggested that online trust allows consumers to accept the vulnerabilities of Internet sellers after considering seller characteristics, highlighting the adaptive nature of trust in online environments. More recent evidence confirms that online trust remains central but is shaped by multiple, context-dependent mechanisms. In an emerging-market study, Jadir et al. (2022) found that perceived supplier size and reputation can operate as trust cues, whereas Mofokeng (2023) showed that delivery performance, perceived security, product variety, and ease of use are important antecedents of online trust. Handoyo's (2024) meta-analysis further demonstrated the joint relevance of trust, perceived risk, perceived security, and electronic word-of-mouth to e-commerce purchasing decisions. Cross-market evidence also suggests that the antecedents and consequences of trust can differ between advanced and emerging markets (Quintus et al., 2024). These findings motivate a mechanism-based test of whether supplier cues in Vietnam work directly or are converted into trust through observable website and service experiences.

2.4. Hypothesis development

For H1, H2, H4, and H5, mediation is defined as a specific indirect effect along the stated path. Accordingly, support for these hypotheses requires the corresponding indirect effect to be statistically significant in bootstrapping; significance of the separate component paths alone is not treated as sufficient evidence of mediation.

2.4.1. Suppliers' reputation

Suppliers' reputation, defined as the perceived honesty and accountability of companies selling goods (Doney and Cannon, 1997), holds significant weight in the online business landscape, particularly in Vietnam where concerns about fraud and reliability are prevalent. A reputable supplier not only enhances consumer confidence but also serves as a signal of operational integrity, product quality, and service standards.

In contexts where consumers perceive legal protection in online transactions as limited, they may rely on supplier reputation to mitigate the risks associated with online shopping. Moreover, website quality serves as a crucial intermediary through which consumers perceive and evaluate suppliers' reputation. A well-designed and functional website signals professionalism, reliability, and trustworthiness, reinforcing positive perceptions of the supplier's reputation. Studies by [Agag and El-Masry \(2017\)](#), [Dolatabadi and Ebrahimi \(2010\)](#), [Jadil et al. \(2022\)](#), [Qalati et al. \(2021\)](#), and [Zhao et al. \(2020\)](#) underscored the significant impact of suppliers' reputation on consumer trust in online shopping, highlighting the importance of intermediary factors such as website quality in shaping consumer perceptions and behaviors. Therefore, the following hypothesis is proposed.

H1: Supplier reputation has a positive specific indirect effect on consumers' trust in online shopping through website quality (REP → WEQ → CTR).

In the context of online business in Vietnam, consumers rely on their experiences of service quality to evaluate the reputation of suppliers. Due to the lack of a comprehensive legal framework and the prevalence of fraudulent activities, consumers' trust in online shopping is intricately linked to their perceptions of the reliability and integrity of suppliers' services. Whether through timely delivery, responsive customer support, or hassle-free return policies, service quality serves as a tangible manifestation of a supplier's reputation.

Consumers without prior experience in online shopping often rely on updated information and feedback from other consumers on e-commerce platforms to gauge the trustworthiness of suppliers. Positive testimonials and reviews contribute to building trust and confidence among potential buyers, reinforcing the reputation of suppliers in the online marketplace. Evidence from Vietnam also indicates that reputation and security can shape cognitive trust in online shopping ([Tran and Nguyen, 2022](#)). However, the present study further examines whether reputation is translated into trust through the more experiential mechanism of perceived service quality. Thus, the following hypothesis is proposed.

H2: Supplier reputation has a positive specific indirect effect on consumers' trust in online shopping through perceived service quality (REP → PSQ → CTR).

The reputation of suppliers plays a pivotal role in shaping consumer trust in online shopping environments. In the absence of physical interaction, consumers rely heavily on the reputation of suppliers as a signal of reliability, credibility, and quality assurance. A positive reputation enhances consumers' confidence in the products and services

offered by online retailers, thereby fostering trust and loyalty.

Numerous studies have highlighted the strong correlation between supplier reputation and consumer trust in online shopping. Suppliers with a positive reputation are perceived as trustworthy and dependable, leading consumers to feel more secure in their online transactions. The reputation of suppliers serves as a form of social proof, reassuring consumers that they are making informed and reliable purchasing decisions.

A reputable supplier is often associated with high-quality products, excellent customer service, and ethical business practices. Consumers are more likely to trust suppliers with a proven track record of delivering on their promises and meeting customer expectations ([Grazioli and Jarvenpaa, 2000](#); [Wang et al., 2003](#)). Positive experiences with reputable suppliers contribute to building trust and confidence among consumers in the online shopping process.

Consumer trust in online shopping is closely linked to the perception of risk. A reputable supplier helps mitigate perceived risks such as product quality, delivery reliability, and data security, thereby alleviating consumer concerns and enhancing trust ([Lee and Turban, 2001](#)). By establishing a positive reputation, suppliers create a sense of reliability and dependability that encourages consumers to engage in online transactions with confidence.

Word-of-mouth communication, both offline and online, significantly influences consumer perceptions of supplier reputation ([Cheung and Lee, 2001](#); [Dellarocas et al., 2007](#)). Positive reviews, recommendations, and testimonials from satisfied customers contribute to enhancing supplier reputation and building trust among potential consumers. Conversely, negative feedback or poor reviews can undermine trust and deter consumers from engaging with a supplier. Thus, the following hypothesis is proposed.

H3: The reputation of suppliers directly and positively impacts consumers' trust in online shopping in Vietnam.

2.4.2. Suppliers' size

In addition to reputation, the size of suppliers plays a significant role in shaping consumers' trust in online shopping environments. Consumers often perceive larger companies as having greater resources and capabilities to meet their needs and uphold high standards of service and reliability ([Jarvenpaa et al., 2000](#)). [Koufaris \(2002\)](#) further suggested that customer confidence is likely to increase when dealing with larger companies due to perceptions of stability and accountability.

Empirical research supports the notion that the size of suppliers can influence consumer trust in online shopping. [Mao \(2010\)](#) found that supplier size explains a substantial portion of the variation in consumer trust, highlighting the importance of this

factor in shaping consumer perceptions and behaviors. Similarly, studies by [Agag and El-Masry \(2017\)](#) and [Jadil et al. \(2022\)](#) have demonstrated a significant positive impact of supplier-related cues on consumer trust in online shopping contexts. Hence, the following hypothesis is proposed:

H4: Supplier size has a positive specific indirect effect on consumers' trust in online shopping through website quality ($SS \rightarrow WEQ \rightarrow CTR$).

Vietnamese consumers' preference for larger companies in online shopping reflects their belief that these companies provide more attentive and reliable service compared to smaller counterparts. The perceived precision and accountability associated with larger companies instill confidence among consumers, who view them as trustworthy partners in the online shopping process.

Consumers' evaluation of supplier size is often influenced by their experiences of service quality, as well as by feedback and testimonials from other consumers on e-commerce platforms. Positive experiences and reviews contribute to reinforcing perceptions of trustworthiness and reliability associated with larger companies, thereby shaping consumer trust in the online shopping market.

Given these dynamics, evaluating the indirect impact of suppliers' size on consumer trust through website quality and perceived service quality variables offers a comprehensive approach to understanding the mechanisms underlying consumer trust formation in the context of online shopping in Vietnam. Thus, the following hypothesis is proposed.

H5: Supplier size has a positive specific indirect effect on consumers' trust in online shopping through perceived service quality ($SS \rightarrow PSQ \rightarrow CTR$).

The size of suppliers can significantly influence consumer trust in online shopping environments. Larger suppliers are often perceived as more established, reliable, and capable of meeting customer needs and expectations. As such, consumers may place greater trust in larger suppliers compared to smaller ones.

Larger suppliers often enjoy greater brand recognition and reputation compared to smaller ones. Consumers are more likely to trust well-known brands with a proven track record of delivering quality products and services. Brand recognition instills confidence and reassures consumers that they are dealing with a reputable and trustworthy supplier.

Larger suppliers typically have greater resources and infrastructure to support their operations. This includes robust logistics networks, advanced technology systems, and dedicated customer support teams. Consumers perceive larger suppliers as better equipped to handle orders, address customer inquiries, and resolve problems during the shopping process ([Sirdeshmukh et al., 2002](#)). The presence of

such resources enhances consumer trust in the reliability and efficiency of larger suppliers.

Larger suppliers often offer a wider range of products and services compared to smaller ones. Consumers value choice and convenience when shopping online, and larger suppliers are better positioned to meet diverse consumer preferences and needs ([Kim and Eastin, 2011](#); [Lee and Turban, 2001](#)). The availability of a comprehensive product assortment enhances consumer trust in the supplier's ability to fulfill consumer requirements and preferences.

The size of suppliers is often indicative of financial stability and longevity in the market. Consumers are more inclined to trust suppliers that demonstrate financial strength and sustainability over time ([Cheung and Lee, 2001](#); [Dellarocas et al., 2007](#)). Larger suppliers are perceived as less risky and more likely to honor their commitments, thereby instilling greater trust among consumers. Based on the above discussion, the following hypothesis is proposed.

H6: The size of suppliers directly and positively affects consumers' trust in online shopping in Vietnam.

2.4.3. Website quality

Website quality is a crucial determinant of consumer trust in online shopping environments. In the absence of physical interaction, consumers rely heavily on the quality of the website to evaluate the credibility and reliability of online suppliers. A well-designed website that provides accurate, detailed, and timely information enhances consumers' confidence in the products and services offered.

Key aspects of website quality include usability, functionality, and visual appeal. A user-friendly interface that is easy to navigate and search helps consumers find information quickly and complete transactions efficiently. Moreover, features such as secure payment options, clear return policies, and responsive customer support contribute to building trust and credibility.

Empirical research links website-related quality cues to online trust. [Mazaheri et al. \(2012\)](#) and [Qalati et al. \(2021\)](#) showed that website quality and usability can strengthen perceptions of reliability. More recent emerging-market evidence likewise indicates that ease of use and concrete digital cues contribute to online trust ([Jadil et al., 2022](#); [Mofokeng, 2023](#)), while cross-market work shows that trust formation varies across market contexts ([Quintus et al., 2024](#)).

In the context of Vietnam's online shopping market, where consumers may face unique challenges and concerns such as language barriers, payment security, and delivery reliability, website quality takes on added significance. A website that is optimized for Vietnamese consumers, with localized content, language options, and culturally relevant visuals, can enhance trust and engagement.

Furthermore, as mobile internet usage continues to rise in Vietnam, ensuring that websites are mobile-responsive and accessible across different devices is critical for reaching and engaging with a broader audience. Mobile-friendly design features, such as fast load times and intuitive navigation, contribute to a positive user experience and foster trust among mobile shoppers.

In conclusion, investing in website quality is essential for online retailers operating in Vietnam to build and maintain consumer trust. By providing a seamless and trustworthy online shopping experience, retailers can enhance their competitiveness and drive customer loyalty in this rapidly growing market. From the above argument, the study proposes the hypothesis:

H7: Website quality positively impacts consumers' trust in online shopping in Vietnam.

2.4.4. Perceived service quality

Perceived service quality plays a pivotal role in establishing trust and fostering long-term customer relationships in online shopping environments. Gefen (2002) and Kim et al. (2008) emphasized the importance of high-quality service delivery in building trust with customers, which encompasses various aspects such as warranties, customized service (Doney and Cannon, 1997), and responsive customer support.

Empirical research in similar contexts, such as China and Taiwan, has consistently demonstrated the significant impact of service quality on consumer trust in online shopping. A study by Mao (2010) found strong positive relationships between perceived service quality and consumer trust, with substantial impact ratios of 35.1% and 58.8%, respectively. These findings underscore the critical role that service quality plays in shaping consumer perceptions and behaviors in online shopping environments.

Moreover, studies by Hsu et al. (2018) and Qalati et al. (2021) support the role of perceived service quality in online trust. Recent evidence from an emerging market further shows that on-time delivery, perceived security, product variety, and ease of use are important trust antecedents, reinforcing the value of concrete service performance in online retailing (Mofokeng, 2023). By providing services that meet or exceed customer expectations, online retailers can enhance trust and strengthen longer-term customer relationships.

In the context of Vietnam, where consumer trust in online shopping may be influenced by factors such as language barriers, payment security, and delivery reliability, perceived service quality takes on added significance. Responsive and reliable customer support, clear and transparent warranty policies, and personalized service offerings can help alleviate concerns and build trust among Vietnamese consumers. Furthermore, in a competitive online marketplace, where consumers have a plethora of

options to choose from, perceived service quality can serve as a critical differentiator for online retailers. By consistently delivering superior service experiences, retailers can not only attract new customers but also retain existing ones, thereby fostering long-term trust and loyalty. Therefore, the study proposes the following hypothesis:

H8: Perceived service quality positively impacts consumers' trust in online shopping in Vietnam.

2.4.5. Information security

Information security is a critical concern for consumers engaging in online shopping activities. The exchange of personal information, including addresses, demographics, and payment details, necessitates a high level of trust between consumers and online retailers. Concerns about data privacy and security breaches can significantly impact consumers' willingness to engage in online transactions.

Research indicates that security is closely intertwined with trust and can serve as a fundamental competitive advantage in the online marketplace (Yang et al., 2001). Websites that prioritize and demonstrate a firm commitment to safeguarding customers' personal information are more likely to inspire trust and confidence among consumers (Yoon, 2002).

Empirical studies have consistently shown a positive relationship between information security and consumer trust in online shopping. Dolatabadi and Ebrahimi (2010) emphasized the role of privacy and security in trust formation. More recent evidence similarly shows that information confidentiality and integrity can strengthen consumers' trusting beliefs in e-commerce platforms (Singh et al., 2024), while Mofokeng (2023) identified perceived security as an important antecedent of online trust and Handoyo (2024) confirmed the broader relevance of perceived security and trust to e-commerce purchasing decisions.

In the context of Vietnam, where online shopping is experiencing rapid growth, concerns about information security are likely to be heightened among consumers. Given the prevalence of online scams and data breaches, Vietnamese consumers are increasingly vigilant about protecting their personal information when engaging in online transactions.

Online retailers in Vietnam can gain a competitive edge by implementing robust security measures and transparent data protection policies. Features such as secure payment gateways, SSL encryption, and clear privacy statements can help alleviate consumer concerns and foster trust in the online shopping experience. Moreover, educating consumers about the steps taken to ensure information security and providing avenues for feedback and recourse in the event of security incidents can further strengthen trust and loyalty among Vietnamese online shoppers. Hence, the study proposes the hypothesis:

H9: Information security positively impacts consumers' trust in online shopping in Vietnam.

2.4.6. Reference group

Reference groups, comprising family, friends, colleagues, and online forums, play a significant role in shaping consumer trust and behavior in online shopping environments. While previous research has primarily focused on the impact of third-party testimonials and external factors on consumer trust, such as legal frameworks and third-party recognition (Cheung and Lee, 2001), the influence of reference groups has gained increasing attention in recent studies.

In Taiwan, where online business has flourished, the effectiveness of legal systems and third-party support mechanisms has been demonstrated to positively impact consumer confidence in online transactions. However, in Vietnam, where online shopping activities are primarily driven by word-of-mouth recommendations and shared experiences within reference groups, the impact of these groups on consumer trust cannot be overlooked.

Empirical research by Hasslinger et al. (2007) underscored the role of social influence and peer information in online shopping. This mechanism is also consistent with recent meta-analytic evidence showing that electronic word-of-mouth is materially related to e-commerce purchasing decisions (Handoyo, 2024). Such findings highlight the importance of social validation and credible peer recommendations in shaping perceptions of trustworthiness and reliability in online transactions.

Given the reliance on reference groups for information and recommendations in the Vietnamese context, it is plausible to hypothesize that reference groups positively impact consumers' trust in online shopping. By leveraging social networks and fostering positive word-of-mouth referrals, online retailers in Vietnam can enhance trust, credibility, and ultimately, purchasing decisions among consumers.

In Vietnam's rapidly growing online shopping market, where consumers may face challenges such as language barriers, payment security concerns, and delivery reliability, the role of reference groups becomes even more pronounced. Personal recommendations and shared experiences within reference groups serve as valuable sources of information and assurance for Vietnamese consumers navigating the online shopping landscape. Moreover, the influence of reference groups extends beyond trust-building to encompass broader aspects of consumer behavior, including purchase decisions, brand loyalty, and post-purchase satisfaction. Understanding and harnessing the power of reference groups can enable online retailers to cultivate strong relationships with customers, drive engagement, and foster brand advocacy in the Vietnamese market. Therefore, the study proposes the hypothesis:

H10: Reference groups positively impact consumers' trust in online shopping in Vietnam.

2.4.7. Online purchase decision

Consumer trust is a crucial factor influencing purchasing decisions in online shopping environments. According to the five-stage buying decision model proposed by Kotler et al. (2009), consumers go through a series of steps, including need identification, information search, and evaluation of alternatives, before making a purchase decision. Within this framework, consumer trust emerges as a key determinant alongside perceived financial risk and uncertainty.

Empirical studies, such as those by Hidayat et al. (2021) and Handoyo (2024), have demonstrated a significant positive impact of consumer trust on online purchase decisions. Trust, in this context, reflects consumers' confidence in the reliability, credibility, and security of online shopping platforms and retailers. When consumers trust an online platform or retailer, they are more likely to proceed with their purchase decisions, overcoming concerns about potential risks or uncertainties.

Moreover, trust serves as a facilitator of online transactions, fostering a sense of assurance and confidence among consumers. By instilling trust, online retailers can mitigate perceived risks and uncertainties, thereby influencing consumers' willingness to make online purchases. In Vietnam's rapidly growing online shopping market, where consumers may face unique challenges such as language barriers, payment security concerns, and product authenticity issues, the role of trust becomes even more significant. Building and maintaining trust with consumers is essential for online retailers seeking to gain a competitive edge and drive purchase decisions. Furthermore, trust extends beyond individual transactions to encompass broader aspects of the consumer-brand relationship. A strong foundation of trust can lead to repeat purchases, brand loyalty, and positive word-of-mouth referrals, thereby contributing to long-term business success in the online marketplace. Therefore, the study proposes the hypothesis:

H11: Consumers' trust in online shopping positively impacts their online purchase decisions in Vietnam.

In summary, the research model of this study includes 11 hypotheses. Therefore, the proposed research model is as shown in Fig. 1.

3. Methodology

3.1. Data collection

This study employed a quantitative approach to examine the relationships among supplier reputation, supplier size, website quality, perceived service quality, information security, reference

groups, consumer trust, and online purchase decisions. The target population comprised Vietnamese online shoppers across various age groups (under 18, 19-25, 26-35, 36-45, and over 46) and product categories (fashion, perfumes and cosmetics, electronics, books, and documents).

A convenience sampling method was adopted due to its practicality in accessing participants. The minimum recommended sample size was established by considering the number of observed variables and the requirements of multivariate regression analysis (Hair et al., 2010). Given 29 observed variables, the minimum sample size was 145. To enhance analytical stability, approximately 500 questionnaires were distributed, resulting in 414 valid responses after screening incomplete and invalid questionnaires. Because recruitment relied on convenience access through online channels, the sample should not be interpreted as statistically representative of all Vietnamese online shoppers; this limitation is revisited explicitly in Section 5.2.

The data collection instrument was a two-section online questionnaire. Section 1 gathered demographic information, including age, gender, occupation, and income. Section 2 comprised 29 Likert-scale items (1 = Strongly Disagree, 5 = Strongly Agree) measuring the influence of six factors on consumer trust and its impact on online purchasing decisions. The questionnaire was structured to align with the predefined model and was piloted for clarity and comprehensibility among Vietnamese online shoppers.

The questionnaire was disseminated to Vietnamese online shoppers through social media platforms, personal networks, youth groups, and quick survey applications. The online format facilitated cost-effective recruitment, coding, and data entry. Data collection took place from early March 2023 to June 2024. Participation was voluntary and anonymous. All respondents provided informed consent before answering the questionnaire; for respondents under 18 years old, guardian consent and participant assent were required before completion.

3.2. Data analysis

Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS was employed to assess the measurement model and test the hypothesized relationships. PLS-SEM is appropriate for simultaneously estimating multiple latent-variable relationships with an emphasis on prediction and explained variance, and it is widely used for complex models in business and information-systems research (Hair et al., 2019).

The analysis evaluated outer loadings, Cronbach's alpha, composite reliability, average variance extracted (AVE), the Heterotrait-Monotrait (HTMT) ratio, and variance inflation factors (VIF) to assess indicator quality, internal consistency, convergent validity, discriminant validity, and multicollinearity (Hair et al., 2019; Nunnally, 1978). Direct effects

were assessed from SmartPLS bootstrapping output using path coefficients, bootstrap standard errors, t-values, and p-values. For H1, H2, H4, and H5, mediation was evaluated as the specific indirect effect itself rather than inferred from the significance of separate component paths. The retained output contained the original indirect effect estimate (O) and bootstrap standard deviation (STDEV), which functions as the bootstrap standard error. To provide an interval estimate without fabricating unavailable percentile or bias-corrected limits, an approximate 95% confidence interval was calculated as $O \pm 1.96 \times \text{STDEV}$. These intervals are reported explicitly as normal-approximation intervals based on bootstrap standard errors, not as percentile or BCa bootstrap intervals.

Structural-model assessment also considered R^2 and adjusted R^2 for endogenous constructs and the Standardized Root Mean Squared Residual (SRMR), where available, as complementary model diagnostics (Hair et al., 2014; Hair et al., 2019). Hypothesis decisions used a 5% significance threshold. Effects with $p > 0.05$ were not classified as supported; where substantively useful, results between 0.05 and 0.10 were described only as marginal evidence and not as confirmed effects.

4. Results

4.1. Descriptive statistics

The study recruited a sample of 414 valid participants. Table 1 presents the key demographic characteristics of the respondents.

4.2. Quality of observed variables

This section evaluates the quality of the observed variables used to operationalize the constructs within the proposed model. Measurement quality refers to the extent to which the chosen indicators accurately capture the underlying theoretical constructs they represent. Hair et al. (2010) suggested an outer loading coefficient greater than or equal to 0.708 as an indicator of good quality. While alternative perspectives on this threshold exist (Bagozzi and Yi, 1988), the 0.7 threshold remains widely used (Henseler et al., 2015). Observed variables with outer loadings below this threshold are typically removed to refine the measurement model. As shown in Table 2, all calculated outer loading values exceed 0.7, suggesting adequate measurement quality.

4.3. Reliability of the measurement scale

Reliability refers to the consistency and stability of a scale in producing the same results upon repeated administrations. Two primary indicators were used to evaluate the model's reliability: Cronbach's alpha and composite reliability (CR). Cronbach's alpha: Nunnally (1978) suggested a

Cronbach's alpha coefficient of 0.7 or higher for a reliable scale. Hair et al. (2019) similarly emphasized internal consistency alongside this threshold. However, for exploratory research, a value of 0.6

may be acceptable (Tavakol and Dennick, 2011). Higher Cronbach's alpha values indicate greater internal consistency within the scale.

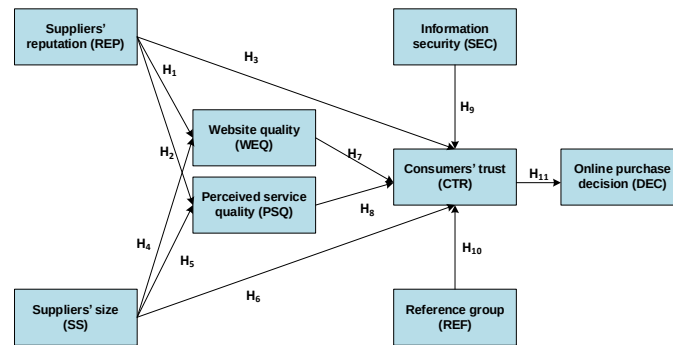


Fig. 1: Proposed research model

Table 1: Demographic characteristics

Characteristics		Frequency	Percent	Valid percent	Cumulative percent
Gender	Male	242	58.5	58.5	58.5
	Female	172	41.5	41.5	100.0
	Total	414	100.0	100.0	
Age	Under 18	27	6.5	6.5	6.5
	19 - 25	192	46.4	46.4	52.9
	26 - 35	161	38.9	38.9	91.8
	36 - 45	20	4.8	4.8	96.6
	Over 46	14	3.4	3.4	100.0
	Total	414	100.0	100.0	
Occupation	Student	47	11.4	11.4	11.4
	Teacher	103	24.9	24.9	36.2
	Officer	195	47.1	47.1	83.3
	Engineer	19	4.6	4.6	87.9
	Doctor	7	1.7	1.7	89.6
	Other	43	10.4	10.4	100.0
Income level	Total	414	100.0	100.0	
	Under 5 million	174	42.0	42.0	42.0
	5 - 9 million	168	40.6	40.6	82.6
	10 - 20 million	60	14.5	14.5	97.1
	>20 million	12	2.9	2.9	100.0
	Total	414	100.0	100.0	

Table 2: Quality of observed variables

No	Code	Item	Variable	Outer loadings
1	CTR1	This website offers competitive prices compared to other online stores.	Consumers' trust (CTR)	0.895
2	CTR2	I believe this website is a safe and reliable place to shop online.		0.940
3	CTR3	I am confident this website will fulfill its promises regarding product quality, delivery times, and return policies.		0.920
4	DEC1	I feel confident in my decision to purchase products from this website.	Online purchase decision (DEC)	0.869
5	DEC2	The process of making a purchase on this website is straightforward and easy.		0.905
6	DEC3	I am satisfied with my overall online shopping experience on this website.		0.864
7	DEC4	I am likely to make future purchases from this website.	Perceived service quality (PSQ)	0.897
8	PSQ1	Products displayed on the website are consistently available for purchase.		0.764
9	PSQ2	The website offers fast and efficient delivery services.		0.845
10	PSQ3	The payment methods provided by the website are highly reliable and secure.	Reference group (REF)	0.885
11	PSQ4	The products purchased from the website meet high-quality standards.		0.817
12	PSQ5	The company provides excellent after-sales service and support.		0.891
13	REF1	The opinions and experiences of my family make me feel more confident in online shopping.	Reputation (REP)	0.947
14	REF2	The opinions and experiences of my friends make me feel more confident in online shopping.		0.887
15	REF3	The opinions and experiences shared on online forums make me feel more confident in online shopping.		0.956
16	REP1	The website I have visited or purchased from is widely recognized.	Security (SEC)	0.941
17	REP2	This website is well-known and frequently used by many people for online shopping.		0.907
18	REP3	This website has a strong reputation for reliability and quality.		0.870
19	SEC1	The website clearly explains how my personal information will be used.	Suppliers' size (SS)	0.884
20	SEC2	The website actively ensures the security of my personal and account information.		0.937
21	SEC3	The customer support service handles information leak reports quickly, clearly, and professionally, making me feel safe when shopping online.		0.923
22	SEC4	The support services for refunds, returns, and consumer rights on this website make me feel safe when shopping online.	Website quality (WEQ)	0.913
23	SS1	The company that owns the website is perceived as a large enterprise.		0.938
24	SS2	The company that owns the website is one of the largest providers in the online business market.		0.936
25	WEQ1	The website has a user-friendly interface.		0.925
26	WEQ2	The website has a well-organized and logical layout.		0.955
27	WEQ3	The website is easy to navigate and use.		0.950
28	WEQ4	I can easily find the information I need on the website.		0.937
29	WEQ5	The website clearly displays the company's contact information.		0.874

Composite reliability (CR): Many researchers favor CR over Cronbach's alpha because it can provide more accurate reliability estimates in complex models (Chin, 1998). Chin (1998) proposed a CR threshold of 0.6 for exploratory research and 0.7 for confirmatory studies. This view is supported by Bagozzi and Yi (1988) and Henseler and Sarstedt (2013).

As shown in Table 3, all calculated Cronbach's alpha and composite reliability values exceed the recommended thresholds, indicating satisfactory reliability of the measurement model.

4.4. Convergent validity

Convergent validity refers to the extent to which the indicators of a construct truly reflect the underlying latent variable they are intended to measure (Fornell and Larcker, 1981). Convergent validity was assessed using the average variance extracted (AVE) index (Hair et al., 2014). According to Hock and Ringle (2010), an AVE value of 0.5 or higher indicates satisfactory convergent validity. This threshold suggests that, on average, at least half of the variance in each observed variable is explained by the latent construct.

If the initial AVE falls below the 0.5 threshold, measurement-model refinement typically involves iteratively reviewing items with low outer loadings and reassessing the AVE (Hair et al., 2019). In this

study, all constructs exceeded the recommended threshold, so no indicator was removed on this basis.

As shown in Table 3, all calculated AVE values exceed 0.5, suggesting that the measures used in this study demonstrate convergent validity.

Table 3: Reliability of the measurement scale

No	Variable	Cronbach's alpha	Composite reliability	AVE
1	CTR	0.907	0.942	0.844
2	DEC	0.907	0.935	0.781
3	PSQ	0.897	0.924	0.709
4	REF	0.922	0.951	0.865
5	REP	0.891	0.932	0.821
6	SEC	0.935	0.953	0.836
7	SS	0.862	0.935	0.878
8	WEQ	0.960	0.969	0.863

4.5. Discriminant validity

Discriminant validity assesses the extent to which a construct is distinct from other constructs within the research model (Hair et al., 2014). This ensures that the measures capture unique aspects of each construct. Henseler et al. (2015) recommend the Heterotrait-Monotrait (HTMT) ratio of correlations between latent variables to evaluate discriminant validity. An HTMT value less than 0.85 indicates strong discriminant validity (Kline, 2016). Following this benchmark (chosen due to its stringency), Table 4 presents the HTMT matrix. As all values fall below 0.85, discriminant validity is established for the constructs in this study.

Table 4: Heterotrait-Monotrait ratio matrix

Construct	CTR	DEC	PSQ	REF	REP	SEC	SS	WEQ
CTR								
DEC	0.683							
PSQ	0.557	0.493						
REF	0.574	0.482	0.520					
REP	0.500	0.511	0.546	0.430				
SEC	0.600	0.507	0.616	0.661	0.454			
SS	0.508	0.478	0.600	0.491	0.679	0.507		
WEQ	0.600	0.475	0.585	0.577	0.642	0.672	0.539	

4.6. Common method bias assessment

Because all constructs were measured using the same self-report questionnaire, common method bias (CMB) is a potential methodological concern. Following procedural recommendations in the common-method literature, the questionnaire used anonymous participation, neutral wording, and separation of items across construct groups to reduce evaluation apprehension and demand characteristics (Podsakoff et al., 2003). However, a formal ex post diagnostic such as Harman's single-factor test, a marker-variable procedure, or full-collinearity VIF was not included in the originally archived analysis workflow, and the item-level raw dataset needed to reconstruct such a test with a verifiable audit trail was not available in the present revision package. Therefore, no retrospective CMB statistic is invented or reported. The absence of a formal test is treated as a limitation—not as evidence that common method bias is absent—and the substantive findings are interpreted cautiously. Future studies should preregister and archive at

least one formal CMB diagnostic alongside the primary PLS-SEM analysis.

4.7. Model testing

Having established measurement reliability and validity, bootstrapping with 1,000 resamples and a 5% significance level was used to assess the hypothesized relationships. Among the seven direct-effect hypotheses reported in Table 5, H7, H8, H9, H10, and H11 are supported, whereas H3 (REP → CTR) and H6 (SS → CTR) are not supported. The mediation hypotheses were then evaluated from the bootstrapped specific indirect effects themselves (Table 6), rather than from separate component paths. H1, H2, and H5 are supported at the 5% level. H4 is not supported because $p = 0.067$ and its approximate 95% interval includes zero; it is interpreted only as marginal evidence at the 10% level. The explanatory power of the structural model was evaluated using the adjusted R-squared (R^2) index. This metric is preferred over the unadjusted R^2 because it accounts for model complexity. The R^2

value reflects the extent to which the independent variables explain variance in the dependent variable. It ranges between 0 and 1, with higher values

indicating stronger explanatory power. Table 7 presents the R^2 and adjusted R^2 values for the endogenous constructs.

Table 5: Bootstrapping analysis results of direct effect

Hypothesis	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T-statistics (O/STDEV)	P-values	Hypothesis testing conclusion
H11: CTR → DEC	0.623	0.625	0.048	12.931	0.000	Accepted
H8: PSQ → CTR	0.136	0.138	0.062	2.194	0.028	Accepted
H10: REF → CTR	0.190	0.189	0.061	3.120	0.002	Accepted
H3: REP → CTR	0.081	0.083	0.067	1.214	0.225	Rejected
H9: SEC → CTR	0.171	0.172	0.066	2.607	0.009	Accepted
H6: SS → CTR	0.076	0.073	0.054	1.420	0.156	Rejected
H7: WEQ → CTR	0.188	0.187	0.073	2.578	0.010	Accepted

Table 6: Bootstrapping results for specific indirect effects

Hypothesis	O	M	STDEV	O/STDEV	P-values	Hypothesis testing conclusion	Approx. 95% CI*
H2: REP → PSQ → CTR	0.038	0.038	0.019	1.993	0.047	Accepted	[0.001, 0.075]
H5: SS → PSQ → CTR	0.050	0.050	0.024	2.079	0.038	Accepted	[0.003, 0.097]
H1: REP → WEQ → CTR	0.088	0.087	0.035	2.527	0.012	Accepted	[0.019, 0.157]
H4: SS → WEQ → CTR	0.040	0.041	0.022	1.834	0.067	Not supported	[-0.003, 0.083]

*Approximate 95% confidence intervals were calculated from the retained bootstrap output as $0 \pm 1.96 \times \text{STDEV}$. They are normal-approximation intervals based on bootstrap standard errors and are not percentile or BCa bootstrap intervals

Table 7: R-squared matrix

Construct	R-squared	R-squared adjusted
CTR	0.440	0.432
DEC	0.388	0.386
PSQ	0.330	0.327
WEQ	0.384	0.381

The proposed model includes four endogenous variables: website quality (WEQ), perceived service quality (PSQ), consumers' trust (CTR), and online purchase decision (DEC). Reputation (REP) and supplier size (SS) are hypothesized to influence WEQ and PSQ. Consumer trust (CTR) is theorized to be influenced by information security (SEC), reference group (REF), WEQ, and PSQ. Finally, purchase decision (DEC) is determined by CTR. The analysis revealed the following adjusted R^2 values. WEQ: 0.381, indicating that REP and SS explain 38.1% of the variance in website quality perception. PSQ: 0.327, suggesting that REP and SS explain 32.7% of the variance in perceived service quality. CTR: 0.432, signifying that SEC, REF, WEQ, and PSQ collectively explain 43.2% of the variance in customer trust. DEC: 0.386, implying that CTR explains 38.6% of the variance in purchase decisions.

5. Discussion

5.1. Discussions and implications

The findings provide a more mechanism-oriented understanding of consumer trust in Vietnam's online shopping environment. Supplier reputation and supplier size did not exert significant direct effects on trust, but three of the four hypothesized specific indirect effects were significant: reputation operated through both website quality and perceived service quality, whereas supplier size operated through perceived service quality but not significantly through website quality at the 5% level. This pattern indicates that symbolic supplier cues are not uniformly converted into trust; their influence

depends on whether consumers encounter observable evidence that validates the cue.

This result is theoretically informative because it contrasts with Jadil et al. (2022), who found significant direct effects of perceived size and reputation on online trust in another emerging-market setting. The divergence suggests that supplier cues should not be assumed to have universal effects across emerging markets, a point consistent with cross-market evidence that trust formation varies by market context (Quintus et al., 2024). In Vietnam, consumers may discount abstract claims of being large or reputable when such claims are not corroborated by a functional website, reliable delivery, transparent information, responsive problem resolution, and satisfactory after-sales support. Because culture was not directly measured, this explanation should be treated as a context-sensitive interpretation rather than proof of a national cultural effect.

Website quality emerged as a significant antecedent of trust. This result indicates that consumers use the website not merely as a transaction channel but as observable evidence of competence and reliability. A site that is easy to navigate, logically organized, transparent about seller information, and convenient for product search can reduce uncertainty and strengthen confidence in the transaction. This interpretation is consistent with recent work emphasizing the importance of concrete online trust cues in emerging markets (Jadil et al., 2022; Quintus et al., 2024).

Perceived service quality also had a positive effect on trust. In the Vietnamese e-commerce context, delivery speed, product availability, payment reliability, return procedures, and after-sales support provide direct evidence of whether a seller can actually fulfill promises. This helps explain why service quality can transmit the effects of both reputation and supplier size. The finding is

consistent with Mofokeng (2023), who showed that concrete operational cues such as on-time delivery and perceived security are important to online trust formation.

Information security was another important determinant of trust. Consumers' willingness to transact depends partly on whether they believe personal and payment information is protected and whether remedies exist when problems occur. This finding aligns with recent evidence that security remains intertwined with trust and e-commerce purchasing behavior (Handoyo, 2024; Mofokeng, 2023). For Vietnamese retailers, security should therefore be visible and understandable rather than treated as a back-end technical feature only.

Reference groups also positively influenced trust. This result points to a socially validated pathway of trust formation: family, friends, colleagues, online communities, and credible reviews can reduce uncertainty when consumers cannot physically inspect products. The finding is consistent with recent evidence on the relevance of electronic word-of-mouth to e-commerce decisions (Handoyo, 2024). It also suggests a culturally plausible relational mechanism for Vietnam, but the present study does not claim to have measured relationship-based trust or a national cultural dimension directly.

The study further confirms that consumer trust positively affects online purchase decisions. Trust reduces perceived uncertainty and increases confidence in completing a transaction, returning to the same platform, and recommending it to others. The result is consistent with recent meta-analytic evidence on the central role of trust in digital purchasing (Handoyo, 2024) and reinforces trust as the mechanism linking platform-, service-, security-, and social-level cues to purchase behavior.

Theoretically, the study contributes in three ways. First, it separates distal symbolic cues (reputation and size) from proximal experiential cues (website and service quality), showing that the former do not necessarily create trust directly. Second, the significant specific indirect effects identify a cue-to-experience conversion mechanism rather than merely confirming another list of trust antecedents. Third, the joint significance of reference groups and experience-based cues suggests that online trust in Vietnam is simultaneously technologically grounded and socially validated. This mechanism-based interpretation clarifies the study's novelty while remaining cautious about unmeasured cultural explanations.

From a managerial perspective, Vietnamese online retailers should move beyond generic brand-building messages and translate trust into visible service routines. Recommended actions include: providing real-time live chat with a stated response-time standard; displaying Vietnamese-language privacy and security notices at checkout; publishing concise return, refund, and complaint procedures with clear deadlines; using verified-purchase reviews and visibly moderating fake reviews; showing legal seller identity and reachable contact

information; providing end-to-end order tracking; and documenting after-sales escalation channels. Smaller retailers, in particular, can compensate for weaker brand recognition by making these reliability signals highly visible and consistently delivering on them.

For platform operators and policymakers, the findings point to practical governance priorities: stronger seller verification, standardized disclosure of return and refund conditions, accessible dispute-resolution channels, clearer data-protection responsibilities, and systematic detection of fabricated reviews. Platforms can also publish service-quality indicators—such as verified fulfillment rates, complaint-resolution time, and refund completion rates—so that reputation is backed by observable performance rather than by popularity alone.

5.2. Limitations and future research

This study has several limitations. First, convenience sampling through online channels restricts generalizability. The sample is demographically uneven: 58.5% of respondents are male, and 47.1% are officers, so the results may not represent the full diversity of Vietnamese online shoppers, including consumers with different occupations, rural users, or less digitally engaged groups. Second, all variables were collected from the same self-report questionnaire. Although procedural remedies were used, no formal ex post CMB diagnostic was available in the archived analysis workflow; therefore, the study cannot rule out common method bias and should not imply that the absence of a test is evidence of absence. Third, the mediation conclusions are based on bootstrapped specific indirect effects, but the retained output did not preserve percentile or BCa confidence limits. The reported intervals are transparent normal approximations based on bootstrap standard errors and should be interpreted accordingly. Fourth, the study examines general online shopping rather than specific platforms or product categories. Fifth, relationship-based trust or a cultural variable was not directly measured; therefore, culturally oriented explanations of the reference-group result remain interpretive. Future research should use probability-based or stratified sampling, archive complete item-level data and bootstrap outputs, compare major platforms and product categories, and explicitly test culturally relevant constructs such as relationship-based trust, community endorsement, social-commerce engagement, or institutional trust.

6. Conclusion

This study examined how Vietnamese consumers build trust in online shopping and how trust influences purchase decisions. The central contribution is not simply that trust matters, but that different trust cues operate through different mechanisms. Supplier reputation and supplier size

did not have significant direct effects on trust. Instead, supplier reputation showed significant specific indirect effects through both website quality and perceived service quality, while supplier size showed a significant indirect effect through perceived service quality. The size → website quality → trust path was not supported at the 5% level ($p = 0.067$).

These results suggest that abstract signals such as being well known or large are insufficient on their own. Trust is strengthened when consumers encounter observable evidence of reliability through a usable and transparent website, consistent service performance, information security, and credible social validation. Website quality, perceived service quality, information security, and reference-group influence all contributed directly to trust, and trust in turn strongly predicted online purchase decisions.

For practice, Vietnamese online retailers should make trust operational and visible through live support, clear Vietnamese-language privacy notices, verified reviews, transparent return and refund rules, reliable order tracking, and professional after-sales service. For theory, the findings support a cue-to-experience conversion mechanism in which some symbolic supplier cues acquire trust value only when validated by concrete digital and service experiences.

Future research should test the model with more representative samples, preserve complete bootstrap confidence intervals and formal common-method diagnostics, and compare platforms and product categories. It should also directly measure culturally relevant constructs—such as relationship-based trust or community endorsement—before drawing stronger conclusions about culture.

List of abbreviations

AVE	Average variance extracted
BCa	Bias-corrected and accelerated
CI	Confidence interval
CMB	Common method bias
COD	Cash on delivery
CR	Composite reliability
CTR	Consumers' trust
DEC	Online purchase decision
HTMT	Heterotrait–Monotrait ratio
M	Sample mean
O	Original sample
PLS-SEM	Partial least squares structural equation modeling
PSQ	Perceived service quality
R^2	Coefficient of determination
REF	Reference group
REP	Supplier reputation
SEC	Information security
SEM	Structural equation modeling
SRMR	Standardized root mean squared residual
SS	Supplier size
SSL	Secure sockets layer
STDEV	Standard deviation
VIF	Variance inflation factor
WEQ	Website quality

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Compliance with ethical standards

Ethical considerations

This study received ethical approval from the Science and Training Council of Trade Union University, Vietnam (Ref. No. 1068/2026/STC-TUU). Participation was voluntary, and informed consent was obtained from all respondents. Participants' anonymity, privacy, and confidentiality were protected throughout the research process. Parental or guardian consent and participant assent were obtained for respondents under 18. The data were used exclusively for academic research purposes.

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

References

- Agag GM and El-Masry AA (2017). Why do consumers trust online travel websites? Drivers and outcomes of consumer trust toward online travel websites. *Journal of Travel Research*, 56(3): 347-369. <https://doi.org/10.1177/0047287516643185>
- Bagozzi RP and Yi Y (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16: 74-94. <https://doi.org/10.1007/BF02723327>
- Bhattacharya R, Devinney TM, and Pillutla MM (1998). A formal model of trust based on outcomes. *Academy of Management Review*, 23(3): 459-472. <https://doi.org/10.2307/259289>
- Cheung CM and Lee MK (2001). Trust in internet shopping: Instrument development and validation through classical and modern approaches. *Journal of Global Information Management*, 9(3): 23-35. <https://doi.org/10.4018/jgim.2001070103>
- Chin WW (1998). The partial least squares approach to structural equation modeling. In: Marcoulides GA (Ed.), *Modern methods for business research*: 295-336. Lawrence-Erlbaum, Mahwah, USA.
- Dellarocas C, Zhang X, and Awad NF (2007). Exploring the value of online product reviews in forecasting sales: The case of motion pictures. *Journal of Interactive Marketing*, 21(4): 23-45. <https://doi.org/10.1002/dir.20087>
- Dolatabadi HR and Ebrahimi H (2010). Factors influencing Iranian consumers' trust in Internet shopping. *European Journal of Social Sciences*, 16(2): 307-318.
- Doney PM and Cannon JP (1997). An examination of the nature of trust in buyer-seller relationships. *Journal of Marketing*, 61(2): 35-51. <https://doi.org/10.1177/002224299706100203>
- Fornell C and Larcker DF (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1): 39-50. <https://doi.org/10.1177/002224378101800104>
PMCID:PMC13390845

- Gefen D (2000). E-commerce: The role of familiarity and trust. *Omega*, 28(6): 725-737. [https://doi.org/10.1016/S0305-0483\(00\)00021-9](https://doi.org/10.1016/S0305-0483(00)00021-9)
- Gefen D (2002). Customer loyalty in e-commerce. *Journal of the Association for Information Systems*, 3(1): 2. <https://doi.org/10.17705/1jais.00022>
- Gefen D, Karahanna E, and Straub DW (2003). Trust and TAM in online shopping: An integrated model. *MIS Quarterly*, 27(1): 51-90. <https://doi.org/10.2307/30036519>
- Grazioli S and Jarvenpaa SL (2000). Perils of Internet fraud: An empirical investigation of deception and trust with experienced Internet consumers. *IEEE Transactions on Systems, Man, and Cybernetics - Part A: Systems and Humans*, 30(4): 395-410. <https://doi.org/10.1109/3468.852434>
- Ha S and Stoel L (2009). Consumer e-shopping acceptance: Antecedents in a technology acceptance model. *Journal of Business Research*, 62(5): 565-571. <https://doi.org/10.1016/j.jbusres.2008.06.016>
- Hair JF Jr, Black WC, Babin BJ, and Anderson RE (2010). *Multivariate data analysis*. 7th Edition, Prentice Hall, Upper Saddle River, USA.
- Hair JF Jr, Sarstedt M, Hopkins L, and Kuppelwieser GV (2014). Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. *European Business Review*, 26(2): 106-121. <https://doi.org/10.1108/EBR-10-2013-0128> **PMCID:PMC13669037**
- Hair JF, Risher JJ, Sarstedt M, and Ringle CM (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1): 2-24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Handoyo S (2024). Purchasing in the digital age: A meta-analytical perspective on trust, risk, security, and e-WOM in e-commerce. *Heliyon*, 10(8): e29714. <https://doi.org/10.1016/j.heliyon.2024.e29714> **PMid:38665587 PMCID:PMC11044045**
- Hasslinger A, Hodzic S, and Opazo C (2007). *Consumer behaviour in online shopping*. Kristianstad University, Kristianstad, Sweden.
- Häubl G and Trifts V (2000). Consumer decision making in online shopping environments: The effects of interactive decision aids. *Marketing Science*, 19(1): 4-21. <https://doi.org/10.1287/mksc.19.1.4.15178>
- Henseler J and Sarstedt M (2013). Goodness-of-fit indices for partial least squares path modeling. *Computational Statistics*, 28: 565-580. <https://doi.org/10.1007/s00180-012-0317-1>
- Henseler J, Ringle CM, and Sarstedt M (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43: 115-135. <https://doi.org/10.1007/s11747-014-0403-8>
- Hidayat A, Wijaya T, Ishak A, and Endi Catyanadika P (2021). Consumer trust as the antecedent of online consumer purchase decision. *Information*, 12(4): 145. <https://doi.org/10.3390/info12040145>
- Hock M and Ringle CM (2010). Local strategic networks in the software industry: An empirical analysis of the value continuum. *International Journal of Knowledge Management Studies*, 4(2): 132-151. <https://doi.org/10.1504/IJKMS.2010.030789>
- Hsu CL, Chen MC, and Kumar V (2018). How social shopping retains customers? Capturing the essence of website quality and relationship quality. *Total Quality Management & Business Excellence*, 29(1-2): 161-184. <https://doi.org/10.1080/14783363.2016.1171706>
- Jadil Y, Rana NP, and Dwivedi YK (2022). Understanding the drivers of online trust and intention to buy on a website: An emerging market perspective. *International Journal of Information Management Data Insights*, 2(1): 100065. <https://doi.org/10.1016/j.jjimei.2022.100065>
- Jarvenpaa SL, Tractinsky N, and Vitale M (2000). Consumer trust in an Internet store. *Information Technology and Management*, 1: 45-71. <https://doi.org/10.1023/A:1019104520776>
- Kim DJ, Ferrin DL, and Rao HR (2008). A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. *Decision Support Systems*, 44(2): 544-564. <https://doi.org/10.1016/j.dss.2007.07.001>
- Kim S and Eastin MS (2011). Hedonic tendencies and the online consumer: An investigation of the online shopping process. *Journal of Internet Commerce*, 10(1): 68-90. <https://doi.org/10.1080/15332861.2011.558458>
- Kline RB (2016). *Principles and practice of structural equation modeling*. 4th Edition, The Guilford Press, London, UK.
- Kotler P, Keller KL, Brady M, Goodman MRV, and Hansen T (2009). *Marketing management*. 1st Edition, Pearson Education Limited, Harlow, UK.
- Koufaris M (2002). Applying the technology acceptance model and flow theory to online consumer behavior. *Information Systems Research*, 13(2): 205-223. <https://doi.org/10.1287/isre.13.2.205.83>
- Lăzăroiu G, Neguriță O, Grecu I, Grecu G, and Mitran PC (2020). Consumers' decision-making process on social commerce platforms: Online trust, perceived risk, and purchase intentions. *Frontiers in Psychology*, 11: 890. <https://doi.org/10.3389/fpsyg.2020.00890> **PMid:32499740 PMCID:PMC7244253**
- Lee MK and Turban E (2001). A trust model for consumer internet shopping. *International Journal of Electronic Commerce*, 6(1): 75-91. <https://doi.org/10.1080/10864415.2001.11044227>
- Lewis JD and Weigert A (1985). Trust as a social reality. *Social Forces*, 63(4): 967-985. <https://doi.org/10.2307/2578601>
- Mao D (2010). A study of consumer trust in Internet shopping and the moderating effect of risk aversion in Mainland China. *Hong Kong Baptist University, Hong Kong, China*.
- Mayer RC, Davis JH, and Schoorman FD (1995). An integrative model of organizational trust. *Academy of Management Review*, 20(3): 709-734. <https://doi.org/10.2307/258792>
- Mazaheri E, Richard MO, and Laroche M (2012). The role of emotions in online consumer behavior: A comparison of search, experience, and credence services. *Journal of Services Marketing*, 26(7): 535-550. <https://doi.org/10.1108/08876041211266503>
- McKnight DH and Chervany NL (2001). What trust means in e-commerce customer relationships: An interdisciplinary conceptual typology. *International Journal of Electronic Commerce*, 6(2): 35-59. <https://doi.org/10.1080/10864415.2001.11044235>
- McKnight DH, Cummings LL, and Chervany NL (1998). Initial trust formation in new organizational relationships. *Academy of Management Review*, 23(3): 473-490. <https://doi.org/10.2307/259290> **PMid:33273867**
- Mofokeng TE (2023). Antecedents of trust and customer loyalty in online shopping: The moderating effects of online shopping experience and e-shopping spending. *Heliyon*, 9(5): e16182. <https://doi.org/10.1016/j.heliyon.2023.e16182> **PMid:37215762 PMCID:PMC10196867**
- Monswé TPY, Dellaert BG, and De Ruyter K (2004). What drives consumers to shop online? A literature review. *International Journal of Service Industry Management*, 15(1): 102-121. <https://doi.org/10.1108/09564230410523358>
- Nunnally JC (1978). *Psychometric theory*. 2nd Edition, McGraw-Hill, New York, USA.

- Pavlou PA (2003). Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. *International Journal of Electronic Commerce*, 7(3): 101-134. <https://doi.org/10.1080/10864415.2003.11044275>
- Podsakoff PM, MacKenzie SB, Lee JY, and Podsakoff NP (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5): 879-903. <https://doi.org/10.1037/0021-9010.88.5.879> **PMid:14516251**
- Qalati SA, Vela EG, Li W, Dakhan SA, Hong Thuy TT, and Merani SH (2021). Effects of perceived service quality, website quality, and reputation on purchase intention: The mediating and moderating roles of trust and perceived risk in online shopping. *Cogent Business & Management*, 8(1): 1869363. <https://doi.org/10.1080/23311975.2020.1869363>
- Quintus M, Mayr K, Hofer KM, and Chiu YT (2024). Managing consumer trust in e-commerce: Evidence from advanced versus emerging markets. *International Journal of Retail & Distribution Management*, 52(10-11): 1038-1056. <https://doi.org/10.1108/IJRDM-10-2023-0609>
- Rousseau DM, Sitkin SB, Burt RS, and Camerer C (1998). Not so different after all: A cross-discipline view of trust. *Academy of Management Review*, 23(3): 393-404. <https://doi.org/10.5465/amr.1998.926617> **PMCID:PMC7486136**
- Shankar V, Urban GL, and Sultan F (2002). Online trust: A stakeholder perspective, concepts, implications, and future directions. *The Journal of Strategic Information Systems*, 11(3-4): 325-344. [https://doi.org/10.1016/S0963-8687\(02\)00022-7](https://doi.org/10.1016/S0963-8687(02)00022-7)
- Singh N, Misra R, Quan W, Radic A, Lee SM, and Han H (2024). An analysis of consumer's trusting beliefs towards the use of e-commerce platforms. *Humanities and Social Sciences Communications*, 11: 899. <https://doi.org/10.1057/s41599-024-03395-6>
- Sirdeshmukh D, Singh J, and Sabol B (2002). Consumer trust, value, and loyalty in relational exchanges. *Journal of Marketing*, 66(1): 15-37. <https://doi.org/10.1509/jmkg.66.1.15.18449>
- Suh B and Han I (2003). The impact of customer trust and perception of security control on the acceptance of electronic commerce. *International Journal of Electronic Commerce*, 7(3): 135-161. <https://doi.org/10.1080/10864415.2003.11044270>
- Tan FB and Sutherland P (2004). Online consumer trust: A multi-dimensional model. *Journal of Electronic Commerce in Organizations*, 2(3): 40-58. <https://doi.org/10.4018/jeco.2004070103>
- Tavakol M and Dennick R (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2: 53-55. <https://doi.org/10.5116/ijme.4dfb.8dfd> **PMid:28029643**
- Tran VD and Nguyen TD (2022). The impact of security, individuality, reputation, and consumer attitudes on purchase intention of online shopping: The evidence in Vietnam. *Cogent Psychology*, 9(1): 2035530. <https://doi.org/10.1080/23311908.2022.2035530>
- Wang YS, Wang YM, Lin HH, and Tang TI (2003). Determinants of user acceptance of Internet banking: An empirical study. *International Journal of Service Industry Management*, 14(5): 501-519. <https://doi.org/10.1108/09564230310500192>
- Yang Z, Peterson RT, and Huang L (2001). Taking the pulse of Internet pharmacies. *Marketing Health Services*, 21: 4-10.
- Yoon SJ (2002). The antecedents and consequences of trust in online-purchase decisions. *Journal of Interactive Marketing*, 16(2): 47-63. <https://doi.org/10.1002/dir.10008>
- Zhao Y, Wang L, Tang H, and Zhang Y (2020). Electronic word-of-mouth and consumer purchase intentions in social e-commerce. *Electronic Commerce Research and Applications*, 41: 100980. <https://doi.org/10.1016/j.elerap.2020.100980>