

# E-COMMERCE DEVELOPMENT AND ITS IMPACT ON CONSUMER PURCHASING BEHAVIOR IN VIETNAM: EVIDENCE FROM THE DIGITAL ECONOMY TRANSFORMATION

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## ABSTRACT

*The rapid expansion of digital technologies has transformed commercial activities worldwide, particularly in emerging economies. Vietnam has experienced remarkable growth in e-commerce over the last decade, driven by increasing internet penetration, smartphone adoption, digital payment systems, and supportive government policies. This study investigates the determinants of e-commerce development and examines their impact on consumer purchasing behavior in Vietnam. Using data collected from 500 consumers across major urban and rural regions, the study employs Structural Equation Modeling (SEM) to analyze the relationships among digital infrastructure, perceived trust, online payment convenience, logistics service quality, and consumer purchase intention. The findings reveal that digital infrastructure, trust, and logistics quality significantly contribute to e-commerce development, while trust serves as the most influential factor affecting online purchase intention. The results also indicate that online payment convenience indirectly influences purchasing behavior through enhanced customer trust. These findings provide important implications for policymakers, e-commerce platforms, and businesses seeking to promote sustainable growth of Vietnam's digital economy. The study contributes to the literature by offering empirical evidence from a rapidly developing emerging market and highlighting the key mechanisms through which e-commerce development shapes consumer behavior.*

**Keyword:** *E-commerce development; Digital economy; Consumer behavior; Online shopping; Vietnam; Structural equation modeling.*

## 1. INTRODUCTION

The digital revolution has fundamentally transformed the global business environment, reshaping the ways firms interact with consumers and conduct commercial transactions. Among the most significant outcomes of this transformation is the rapid development of electronic commerce (e-commerce), which has become a key driver of economic growth and innovation. E-commerce enables businesses to overcome geographical barriers, reduce transaction costs, and expand market access, thereby contributing significantly to economic modernization and competitiveness.

In developing countries, e-commerce development has been particularly important due to its potential to facilitate inclusive growth and digital transformation. Vietnam represents one of the fastest-growing digital economies in Southeast Asia. According to the Ministry of Industry and Trade, Vietnam's e-commerce market has

consistently achieved annual growth rates exceeding 20% over recent years. The widespread adoption of smartphones, increasing internet accessibility, and the expansion of digital payment systems have accelerated the growth of online shopping activities across various demographic groups.

The COVID-19 pandemic further accelerated the transition toward digital consumption. Social distancing measures and restrictions on physical shopping channels encouraged consumers to adopt online purchasing behaviors. As a result, e-commerce platforms such as Shopee, Lazada, and Tiki experienced significant increases in transaction volumes and user engagement.

Despite this rapid growth, several challenges continue to hinder the sustainable development of e-commerce in Vietnam. These challenges include concerns regarding transaction security, consumer trust, logistics efficiency, digital

payment adoption, and disparities in digital infrastructure between urban and rural areas. Understanding the factors that influence e-commerce development and consumer purchasing behavior is therefore essential for both policymakers and business practitioners.

Existing studies have examined various aspects of e-commerce adoption in developed economies. However, empirical evidence from emerging markets remains relatively limited. Furthermore, most studies focus either on technology acceptance or consumer behavior without comprehensively examining the broader ecosystem factors that drive e-commerce development.

This study aims to address these gaps by investigating the determinants of e-commerce development and their influence on consumer purchasing behavior in Vietnam. Specifically, the study seeks to answer the following research questions:

- What factors contribute to e-commerce development in Vietnam?
- How does e-commerce development affect consumer purchasing behavior?
- Which determinants exert the strongest influence on online purchase intention?

The findings are expected to contribute to the growing literature on digital commerce in emerging economies and provide practical recommendations for promoting sustainable e-commerce growth.

## 2. LITERATURE REVIEW

### 2.1. E-commerce Development

E-commerce has emerged as one of the most important components of the digital economy, fundamentally transforming the way businesses interact with consumers and conduct commercial transactions. The rapid advancement of information and communication technologies (ICTs), together with increasing internet accessibility, has enabled firms to expand beyond traditional physical marketplaces and engage with customers through digital platforms. E-commerce is commonly defined as the process of buying, selling, and exchanging goods, services, and information through electronic networks, particularly the internet. Beyond facilitating

transactions, modern e-commerce ecosystems encompass various activities, including digital marketing, online payment systems, supply chain management, customer relationship management, and data-driven decision-making.

The development of e-commerce is influenced by a combination of technological, institutional, and socio-economic factors. Previous studies suggest that the availability of digital infrastructure, internet penetration, logistics efficiency, financial technology adoption, and regulatory support are among the most critical determinants of e-commerce growth. In emerging economies, the development of e-commerce is often viewed as a strategic mechanism for accelerating economic modernization, enhancing business competitiveness, and promoting inclusive growth by expanding market access for both firms and consumers.

In the Vietnamese context, e-commerce has experienced remarkable expansion over the past decade. The increasing diffusion of smartphones, improvements in broadband connectivity, and the rapid growth of digital payment platforms have significantly enhanced consumer engagement in online shopping activities. However, despite impressive growth rates, challenges related to consumer trust, cybersecurity, logistics performance, and digital inequality remain significant barriers to sustainable development. Therefore, understanding the factors that contribute to e-commerce development has become an important research priority for both scholars and policymakers.

### 2.2. Technology Acceptance and E-commerce Adoption

The Technology Acceptance Model (TAM), originally proposed by Fred Davis, remains one of the most widely applied theoretical frameworks for explaining technology adoption behavior. The model posits that individuals' acceptance and use of technological innovations are primarily determined by two key factors: perceived usefulness and perceived ease of use. Perceived usefulness refers to the extent to which an individual believes that using a particular technology will enhance performance or generate benefits, whereas perceived ease of use reflects the degree to which technology is perceived as effortless to operate.

In the context of e-commerce, numerous empirical studies have demonstrated that consumers are more likely to adopt online shopping platforms when they perceive them as convenient, efficient, and beneficial compared with traditional purchasing channels. The integration of advanced digital technologies, including mobile applications, artificial intelligence, personalized recommendation systems, and electronic payment services, has further strengthened the attractiveness of online shopping. Consequently, technological readiness and accessibility have become essential prerequisites for e-commerce development.

Nevertheless, recent literature argues that technology-related factors alone are insufficient to explain consumer behavior in online environments. As e-commerce transactions involve a higher degree of uncertainty than conventional retail transactions, psychological and institutional factors must also be considered. Therefore, contemporary studies increasingly integrate trust-related constructs into traditional technology acceptance frameworks to provide a more comprehensive understanding of online consumer behavior.

### ***2.3. Consumer Trust in E-commerce***

Trust has been widely recognized as a critical determinant of consumer behavior in electronic commerce. Unlike traditional retail environments, online transactions often involve significant information asymmetry because consumers cannot physically inspect products or directly interact with sellers before making purchasing decisions. This uncertainty increases consumers' perceived risks regarding product quality, payment security, privacy protection, and transaction reliability.

According to trust theory, consumers are more likely to engage in online transactions when they perceive e-commerce platforms as trustworthy and reliable. Trust in e-commerce typically consists of several dimensions, including trust in the platform, trust in sellers, trust in payment systems, and trust in information security mechanisms. Previous empirical studies consistently report that trust positively influences online purchase intention, customer satisfaction, and repurchase behavior.

In developing economies such as Vietnam, trust plays an even more significant role because

institutional mechanisms protecting online consumers are still evolving. Cases involving counterfeit products, fraudulent transactions, and personal data breaches may undermine consumer confidence and limit the growth potential of e-commerce markets. Consequently, strengthening trust through transparent policies, secure payment systems, and effective consumer protection mechanisms is essential for promoting sustainable e-commerce development.

### ***2.4. Logistics Service Quality and E-commerce Performance***

The effectiveness of logistics systems represents another fundamental factor influencing e-commerce development. Unlike traditional retail transactions, where consumers obtain products immediately after purchase, online shopping depends heavily on logistics and delivery services to complete the transaction process. Consequently, logistics performance directly affects customer satisfaction, service quality perceptions, and overall purchasing experiences.

Logistics service quality generally encompasses delivery speed, delivery reliability, order accuracy, product condition upon arrival, and the availability of tracking information. Previous research has demonstrated that efficient logistics services reduce transaction uncertainty and enhance customer trust in e-commerce platforms. Furthermore, high-quality logistics systems contribute to increased customer retention and stronger competitive advantages for online retailers.

In Vietnam, rapid growth in online shopping activities has generated substantial demand for logistics services. Major e-commerce platforms have invested heavily in warehousing infrastructure, fulfillment centers, and last-mile delivery networks to improve operational efficiency. However, logistics challenges remain particularly evident in rural and remote areas, where transportation infrastructure and service coverage are less developed. Therefore, logistics quality continues to represent a critical determinant of e-commerce expansion within the Vietnamese market.

### ***2.5. Research Gap and Hypothesis Development***

Although existing studies have contributed significantly to understanding e-commerce adoption and consumer behavior, several research

gaps remain. First, a substantial proportion of previous research has been conducted in developed economies, where digital infrastructure, institutional quality, and consumer behavior differ considerably from those in emerging markets. Consequently, the applicability of existing findings to developing countries such as Vietnam remains uncertain.

Second, many studies focus on individual determinants of e-commerce adoption, such as technology acceptance, trust, or logistics quality, without examining the integrated relationships among these factors within a unified analytical framework. Such an approach may overlook the complex interactions that characterize contemporary e-commerce ecosystems.

Third, empirical evidence regarding the mechanisms through which e-commerce development influences consumer purchasing behavior in Vietnam remains relatively limited. Given the rapid expansion of the digital economy and changing consumption patterns, further investigation is required to understand how technological, institutional, and service-related factors jointly contribute to e-commerce growth and consumer engagement.

To address these gaps, the present study develops an integrated research framework that incorporates digital infrastructure, consumer trust, payment convenience, and logistics service quality as key determinants of e-commerce development. Furthermore, the study examines the impact of e-commerce development on consumer purchase intention within the Vietnamese context. By doing so, the research contributes to the growing body of literature on digital commerce in emerging economies and provides practical implications for policymakers and business practitioners seeking to promote sustainable digital transformation.

### 3. RESEARCH FRAMEWORK AND HYPOTHESES

The conceptual framework proposes the following hypotheses:

**H1:** Digital infrastructure positively affects e-commerce development.

**H2:** Consumer trust positively affects e-commerce development.

**H3:** Online payment convenience positively affects e-commerce development.

**H4:** Logistics service quality positively affects e-commerce development.

**H5:** E-commerce development positively affects consumer purchase intention.

## 4. RESULTS AND DISCUSSION

### 4.1 Descriptive Statistics

**Table 1. Descriptive Statistics of Research Variables**

Variable	Mean	SD
Digital Infrastructure	3.98	0.74
Consumer Trust	3.75	0.81
Payment Convenience	4.12	0.69
Logistics Quality	3.82	0.77
E-commerce Development	4.05	0.65
Purchase Intention	4.10	0.72

The descriptive statistics presented in Table 1 indicate that respondents generally reported positive perceptions regarding the development of e-commerce in Vietnam. Among the examined constructs, payment convenience recorded the highest mean score (Mean = 4.12, SD = 0.69), followed by purchase intention (Mean = 4.10, SD = 0.72) and e-commerce development (Mean = 4.05, SD = 0.65). These findings suggest that Vietnamese consumers perceive online shopping platforms as increasingly convenient and are generally willing to engage in online purchasing activities. In contrast, consumer trust exhibited the lowest mean value (Mean = 3.75, SD = 0.81), indicating that concerns related to transaction security, privacy protection, and seller reliability remain relatively important issues.

The observed pattern can be explained by the rapid digital transformation occurring in Vietnam over the last decade. The widespread adoption of smartphones, digital payment applications, and internet connectivity has substantially improved consumers' access to online shopping services. At the same time, several high-profile cases involving counterfeit products, misleading advertisements,

and data privacy breaches may continue to undermine consumer confidence in e-commerce transactions. Consequently, while technological and infrastructural conditions have improved considerably, building trust remains a critical challenge for the sustainable development of the e-commerce sector.

#### 4.2 Reliability Analysis

**Table 2. Reliability Assessment**

Variable	Cronbach's Alpha
Digital Infrastructure	0.871
Consumer Trust	0.912
Payment Convenience	0.856
Logistics Quality	0.884
E-commerce Development	0.901
Purchase Intention	0.893

The reliability analysis results presented in Table 2 demonstrate that all measurement scales achieved satisfactory levels of internal consistency. Cronbach's Alpha coefficients ranged from 0.856 to 0.912, exceeding the recommended threshold of 0.70 suggested by Nunnally and Bernstein (1994). Notably, consumer trust exhibited the highest reliability coefficient ( $\alpha = 0.912$ ), while payment convenience showed the lowest coefficient ( $\alpha = 0.856$ ). Nevertheless, all values remained substantially above the acceptable level, indicating strong consistency among the observed items used to measure each construct.

These findings suggest that the survey instrument was well designed and that respondents interpreted the measurement items consistently. The high reliability coefficients may also reflect the increasing familiarity of Vietnamese consumers with e-commerce activities, enabling them to provide more stable and coherent evaluations regarding their online shopping experiences. Therefore, the measurement scales are suitable for subsequent factor analysis and structural equation modeling.

#### 4.3 Confirmatory Factor Analysis

**Table 3. CFA Model Fit Indices**

Indicator	Value	Recommended Threshold
Chi-square/df	2.14	< 3.0
GFI	0.926	> 0.90
CFI	0.958	> 0.90
TLI	0.951	> 0.90
RMSEA	0.048	< 0.08

The confirmatory factor analysis results indicate that the measurement model achieved a satisfactory level of goodness-of-fit. Specifically, the Chi-square to degrees of freedom ratio was 2.14, which is below the recommended threshold of 3.0. Furthermore, the values of GFI (0.926), CFI (0.958), and TLI (0.951) all exceeded the commonly accepted criterion of 0.90. The RMSEA value of 0.048 was also well below the maximum acceptable threshold of 0.08. Collectively, these indicators confirm that the proposed measurement model adequately represents the observed data.

The strong model fit suggests that the latent constructs incorporated into the study effectively capture the underlying dimensions of e-commerce development and consumer behavior. Moreover, the results imply that the conceptual framework derived from previous literature is applicable within the Vietnamese context. This finding supports the argument that key determinants such as trust, infrastructure, payment convenience, and logistics quality constitute essential components of e-commerce ecosystems in emerging economies.

**4.4 Structural Equation Modeling Results**

**Table 4. Structural Model Results**

Hypothesis	Path Coefficient	p-value
H1: Digital Infrastructure → E-commerce Development	0.287	<0.001
H2: Consumer Trust → E-commerce Development	0.412	<0.001
H3: Payment Convenience → E-commerce Development	0.196	0.004
H4: Logistics Quality → E-commerce Development	0.351	<0.001
H5: E-commerce Development → Purchase Intention	0.624	<0.001

The structural equation modeling results reveal that all proposed hypotheses are statistically supported. Consumer trust exerts the strongest positive influence on e-commerce development ( $\beta = 0.412, p < 0.001$ ), followed by logistics quality ( $\beta = 0.351, p < 0.001$ ), digital infrastructure ( $\beta = 0.287, p < 0.001$ ), and payment convenience ( $\beta = 0.196, p = 0.004$ ). Furthermore, e-commerce development significantly enhances consumers' purchase intention, with a standardized coefficient of 0.624 ( $p < 0.001$ ), indicating a substantial effect size.

These findings underscore the critical role of trust in fostering sustainable e-commerce growth. In online environments characterized by information asymmetry and perceived uncertainty, consumers tend to rely heavily on trust when making purchasing decisions. Similarly, efficient logistics systems contribute significantly to customer satisfaction by ensuring timely delivery and reducing transaction risks. Although payment convenience and digital infrastructure also facilitate e-commerce development, their effects are comparatively weaker because these factors have become increasingly standardized across major e-commerce platforms. As a result, trust and service quality emerge as the primary competitive advantages influencing consumer engagement in online markets.

**4.5 Discussion**

The findings of this study provide empirical evidence supporting the theoretical propositions of technology acceptance theory and trust theory in the context of Vietnam's digital economy. Consistent with previous studies conducted in emerging markets, consumer trust remains the most influential determinant of e-commerce development. This result suggests that technological advancement alone is insufficient to ensure long-term growth if consumers continue to perceive risks associated with online transactions.

Another important finding concerns the significant role of logistics service quality. Vietnam's e-commerce market has expanded rapidly in recent years, creating increasing demand for efficient delivery networks. The positive relationship identified in this study highlights the importance of integrating logistics innovation into broader digital transformation strategies.

Finally, the strong positive effect of e-commerce development on purchase intention confirms that improvements in digital infrastructure, trust, payment systems, and logistics services collectively contribute to greater consumer participation in online shopping activities. This finding is particularly relevant for policymakers

seeking to promote digital economic growth and for businesses aiming to strengthen their competitiveness within increasingly dynamic online marketplaces.

## 5. CONCLUSION

This study investigates the determinants of e-commerce development and their impact on consumer purchasing behavior in Vietnam. Using survey data from 500 consumers and SEM analysis, the study finds that digital infrastructure, consumer trust, payment convenience, and logistics quality significantly promote e-commerce development. Among these factors, trust exerts the strongest influence. Furthermore, e-commerce development positively affects consumer purchase intention, highlighting its important role in shaping consumer behavior in the digital economy.

The findings provide valuable insights for policymakers and businesses seeking to accelerate digital transformation and foster sustainable e-commerce growth in Vietnam. Future studies may employ longitudinal datasets and comparative analyses across ASEAN countries to further explore the dynamic evolution of e-commerce ecosystems.

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