



How does trust impact e-commerce adoption among Vietnamese vendors: PLS-SEM approach

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ABSTRACT

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With the explosion of Industry 4.0, e-commerce plays a pivotal role in developing vendors in Vietnam, especially since the demand for online shopping is rapidly increasing and becoming familiar to customers. Extending the Technology Acceptance Model (TAM) framework, a widely accepted theoretical framework in technology adoption, this study investigates the significant determinants of adopting e-commerce platforms among Vietnamese vendors. The research identifies Perceived Usefulness (PU), Perceived Ease of Use (PE), Trust (TR), and Data Security (DS) as the determinants shaping adoption behavior by focusing on their effects on PU and PE. The collected data was analyzed using a quantitative approach, employing Partial Least Squares Structural Equation Modeling (PLS-SEM) data from 515 Vietnamese vendors. The study presents the results by measuring the intention to use e-commerce, analyzing the data, and adjusting the scale of the intention to use e-commerce by surveying the research subjects with four factors and twenty observed variables. This process involved rigorous statistical analysis and validation techniques to ensure the reliability and validity of the findings. The results indicate that Trust is a vital mediating factor in the relationship between PU, PE, and DS, as well as behavioral intention, emphasizing its centrality in e-commerce adoption. Trust acts as a bridge that enhances the perceived usefulness and ease of use of e-commerce platforms while mitigating data security concerns. Data security emerges as a major driver that gains Trust and simultaneously reduces the perception of fraud and data breaches. Policymakers, platform providers, and business leaders can leverage the insights from this research to foster Trust, ensure data security, and enhance regulatory knowledge for sustainable e-commerce adoption. By integrating external factors into the TAM framework, this study significantly contributes to the literature on e-commerce adoption, paving the way for open innovation in e-commerce in Vietnam and other emerging markets in Asia.

Contribution/Originality: Extending the Technology Acceptance Model (TAM) framework, this study investigates the significant determinants of adopting E-commerce among Vietnamese vendors. The results show that Perceived Usefulness (PU), Perceived Ease of Use (PE), Trust (TR), and Data Security (DS) are the determinants shaping the adoption by focusing on their effects on PU and PE.

1. INTRODUCTION

As the global economy has developed since the early 1990s, the Internet has brought about remarkable changes in almost all areas of society, especially in the business market. With rapid technological innovation, the global

economy has begun to change the nature of commerce to E-commerce (E-C). E-commerce is used in many business sectors as an innovation strategy to increase companies' competitiveness (Peffer, 1998).

According to Watson, Zinkhan, and Pitt (1998), e-commerce involves using information technology to improve communication and transactions with all organizational stakeholders, such as customers, suppliers, and the public. E-commerce has also transformed business operations, especially for online vendors (Passachon, Siriram, & Poon, 2015; Shah Alam, Ali, & Mohd Jani, 2011).

EC provides vendors with novel options for growth, operational efficiency, and enhanced consumer engagement. Internet use grew rapidly; from 2015 to 2024, 2.9 billion people became new Internet users, increasing from 2.9 billion in 2015 to 5.35 billion people (Xavier, 2024). Nowadays, there is no hesitation in using the Internet socially, and over two billion Asians currently use e-commerce. More than 60 percent of the adult online population in Thailand, Malaysia, and South Korea shop online every week or more (Truong, 2024). Furthermore, social media has fostered e-commerce and social commerce. China, India, and Southeast Asia are increasingly interested in shopping in areas that social media can reach. According to Nguyen Thi et al. (2022), online websites and apps have increasingly become a way for consumers to shop in Vietnam. Many businesses have realized that this surge in demand has necessitated them to start selling their products online, either through their e-shops or, if they already exist, finding a reason to engage with popular marketplaces and platforms. Owing to unrivaled convenience and competitive prices due to economies of scale and broader reach, e-commerce platforms have become the first port of call for Vietnamese consumers and a strategic marketing channel for Vietnamese businesses. Nearly half of the country's total e-commerce sales went to leading e-commerce platforms in Vietnam in 2023, meaning that e-commerce platforms are still firmly in the driver's seat for the country's exponential e-commerce growth (VnEconomy, 2023).

According to the General Statistics Office of Vietnam, vendors represent over 97% of all businesses and contribute over 40% to the Vietnamese GDP (General Statistics Office of Vietnam, 2022). Mordor Intelligence reports that the Vietnam e-commerce market will reach USD 14.70 billion in 2024 and grow to USD 23.77 billion by 2029, with a CAGR of 10.09% for 2024-2029. It increased dramatically to about 50,000 sites compared to 2018, which had 30,000 sites. Some examples of successful vendors in e-commerce in Vietnam are Biti's, Kym Việt, and Hoa Ban +. They are transforming the trading model into one that combines trading with influencing consumer attraction and sales through many e-commerce platforms. However, while there are positive impacts of e-commerce, the extent of e-commerce adoption by Vietnamese vendors remains irregular. Many internal and external factors broadly influence vendors' adoption of these platforms in Vietnam. Hence, understanding the barriers of culture, legal systems, economic circumstances, communication infrastructure, and financial systems is an area where developing countries, including Vietnam, have lagged behind in the adoption and development of e-commerce solutions (Kurnia, Karnali, & Rahim, 2015; Rahayu & Day, 2016).

Thus, e-commerce can still generate no benefits for developing countries (Kshetri, 2007). It leads to the potential for Vietnamese vendors to grow and develop to sustain the nation's economy (Le Van Huy, Tho, & Tuan, 2012). Technology, commonly known as the tools, techniques, or methods used to support the buying and selling of goods, has been given prominence by numerous studies in various areas, including technology, management, business, and marketing (Hashim & Noor, 2014).

Due to its low diffusion among the vendors, many studies have been conducted. In these studies, it has been found that the level of e-commerce being adopted and used by vendors is significantly lower than that of large organizations. Fillis, Johansson, and Wagner (2003) examined vendors' proactive adoption of e-commerce. They concluded that an increase in overall e-commerce adoption would help vendors gain enhanced access to the market, which relates to better market performance for vendors.

Adopting the acceptance of the Technology Acceptance Model by Davis (1989), several scholars relying on numerous extensions of the main model have developed generations of the intention to use e-commerce, such as Rezaee, Jafarzadeh, and Ghorbani (2010) and Moqbel, Nevo, and Kock (2013).

Two attitude components defined by [Ajzen \(1991\)](#) and [Rezaee et al. \(2010\)](#) resolve these issues in analysing the adoption of e-commerce by Vietnamese vendors: perceived usefulness and perceived ease of use. Recent work from [Moqbel et al. \(2013\)](#) reveals that perceived usefulness and ease of use influence users' attitudes toward e-commerce, and risk aversion is a significant factor. The findings of the literature review on perceived usefulness and perceived ease of use for the adoption of e-commerce among Vendors in Vietnam were extended into this study. Several researchers have used the Technology Acceptance Model (TAM) introduced by [Davis \(1989\)](#) to predict intention to use e-commerce, including [Rezaee et al. \(2010\)](#) and [Moqbel et al. \(2013\)](#). [Rezaee et al. \(2010\)](#) have shown that two attitudinal components, defined by [Ajzen \(1991\)](#) — perceived usefulness and perceived ease of use — can influence the adoption of e-commerce by Vietnamese vendors. Recent research by [Moqbel et al. \(2013\)](#) demonstrated that perceived usefulness and perceived ease of use, in addition to risk aversion, affect the intention to adopt e-commerce. This study investigates the effects of perceived usefulness and ease of use on Vietnamese vendors as described in the literature review. In addition, most businesses today have access to state-of-the-art tools enabled by rapid technological development. The most obvious example of this change is how e-commerce platforms transform traditional business methods, especially for Vietnamese vendors. Vietnamese businesses can capitalize on the middle class by tapping into new markets and building closer customer relationships through online shopping. With the increasing penetration of the Internet and smartphones, the Vietnamese market has grown rapidly, estimated to be USD 16.4 billion by 2023 ([An, Ngo, Tran, & Nguyen, 2024](#)). However, providers are also facing some difficulties. E-commerce adoption among Vietnamese vendors is erratic as there are recurring issues, such as data security concerns, Trust and limited resources. The main factors behind this practice include consumer fraud schemes, privacy and data security concerns, and financial limitations. Commercial vendors lack the funds to build stronger digital infrastructure to boost Trust in e-commerce platforms. Financial constraints are a primary factor determining the adoption of e-commerce barriers ([Nguyen, Tran, & Le, 2023](#)). E-commerce barriers separate vendors from large business groups, so vendors face additional challenges when accessing e-commerce opportunities. Recent research into Vietnamese vendor e-commerce adoption shows an important knowledge deficiency regarding the Technology Acceptance Model framework (TAM) because this model does not address the particular economic and social conditions of Vietnamese vendors. [Moqbel et al. \(2013\)](#) established that the scientific understanding of internal driving forces, including perceived usefulness plus ease of use, remains limited in combination with external factors encompassing Trust and data security that led business groups toward e-commerce decisions ([Le Van Huy et al., 2012](#); [Moqbel et al., 2013](#)). Research exploring vendor e-commerce platform adoption in Vietnam focuses on the mutual impacts of perceived usefulness, ease of use, trust, and data security because these elements have become essential study issues. The research delivers operational guidelines that guide policymakers and business executives to break through e-commerce barriers, thus sparking growth through innovation while establishing lasting customer security systems for sustainable e-commerce adoption among vendors.

2. LITERATURE REVIEW

Academic interest in small and medium-sized enterprises (vendors) adopting e-commerce platforms has increased asymmetries, given the transformative potential of these platforms for economic growth, particularly in a developing economy. The Technology Acceptance Model (TAM) proposed by [Davis \(1989\)](#) is one of the most widely used frameworks for analysing technology acceptance, with two main factors: perceived usefulness and perceived ease of use. Their purposes indicate the extent to which a user believes the technology will improve their productivity and the effort it takes to use the technology efficiently. Some research conducted by [Rezaee et al. \(2010\)](#) and [Moqbel et al. \(2013\)](#) has proved that these factors firmly explain behavioural intentions to adopt e-commerce in the context of technology. However, the utility of the TAM framework has been limited because it only focuses on intrinsic factors.

Extrinsic factors such as trust, data security, and regulatory factors, which play an important role in the case of vendors in developing countries such as Vietnam, were not captured.

Trust (TR) serves as a chain for addressing and mediating technology adoption in a highly threatening and insecure digital environment. [Nguyen et al. \(2023\)](#) emphasised that Trust is a platform to assess the trustworthiness, transparency, and ability to conduct secure transactions. Therefore, Trust is considered a mediator of PU, PE, and behavioural intention. [Zhang, Luximon, and Song \(2019\)](#) presented recent research confirming that trust is a fundamental factor in e-commerce adoption, especially in these regions' absence of legal frameworks. These crucial factors, such as transparent and robust platforms, as well as good customer support, are addressing the fear of technology adoption from vendors. [Tran et al. \(2024\)](#) also highlight the financial management regulatory legal role in improving privacy, consumer rights, and accountability trust, mitigating risk, and improving adoption intentions.

Data security (DS) is a critical determinant in trust but also impacts adoption behaviors in tandem with trust. Data security measures, such as encryption and payment gateway security, directly reduce perceived risk and increase user confidence in the platform ([Lee, Kim, & Park, 2024](#)). In particular, Vietnamese vendors are more sensitive to security concerns: 63% highlighted data security as a primary roadblock to e-commerce adoption ([Choi & Mai, 2018](#)). [Kaspersky \(2022\)](#) also substantiates this by reporting that Vietnam is among the top ten countries most at risk from cyberattacks. As a result, the functional necessity of data security is exceeded to become a strategic enabler of Trust. Platforms that do not just portray security protocols but have the means to alleviate user illusions about security and put forth themselves as the safeguards for digital commerce.

Trust and data security are only two of many factors influencing e-commerce adoption; cultural and organizational factors are also equally important. In the case of Vietnamese vendors, [Nguyen, Nguyen, and Tran \(2024\)](#) examined the effect of cultural attitudes and organizational readiness on the organization's adoption behavior. According to their findings, more open to innovation and more digitally literate organizations have higher adoption rates. In addition, [Tran et al. \(2024\)](#) pointed out that organizational readiness is even more critical, and top management support reinforces readiness by creating an innovative culture and dedicating resources to e-commerce integration. These results suggest that individual perceptions play a role, but are not the only factors acting in the adoption decisions of the organization.

Another important external element affecting the acceptability of e-commerce is the regulatory surroundings. [Tran et al. \(2024\)](#) have found that regulatory clarity is mostly responsible for Trust and adoption in emerging economies, including Vietnam, particularly when legislative gaps cause uncertainty and a lack of confidence. Vendors and consumers often fear protection and security when using e-commerce without a comprehensive legal framework for consumer rights and data protection. Therefore, accepting a new business environment is difficult for them. The study also points out that regulatory reform should focus on transparency and accountability to create a favourable environment for the growth of e-commerce. Although e-commerce is a potential vendor resource, many barriers prevent them from adopting and using it as usual. [Nguyen et al. \(2023\)](#) indicate that digital literacy is also an obstacle to using e-commerce platforms, especially in rural areas. According to [Kaspersky \(2022\)](#) vendors also have scepticism towards online transactions due to data intrusion and fraud concerns. They are afraid that these threats always exist during their use. Besides, cybersecurity threats from investing in security changes are becoming increasingly sophisticated. Furthermore, the lack of financial management regulations exacerbates these obstacles and creates further uncertainty during the use and adoption of e-commerce. To overcome these barriers, the authors add factors such as regulatory clarity, data security, and trust to the expanded Technology Acceptance Model (TAM), proving that the relationship between them improves e-commerce adoption among vendors. Perceived Usefulness (PU), Perceived Ease of Use (PE), data security, and regulatory support are critical for trust and mediate their effects on adoption intention. Their findings are consistent with those of [Zhang et al. \(2019\)](#), who argue that Trust in a platform is a dynamic state determined by platform attributes and external factors. [Lee et al. \(2024\)](#) show that Trust is enhanced substantially by visible security measures. [Tran et al. \(2024\)](#) illustrate regulatory support, cultural

perceptions and organisational preparedness to work together to gain Trust and adoption. They suggest future research studies on e-commerce adoption longitudinally to see how updates in Trust develop over time and how these impact sustained adoption.

Detailed comparison across different sectors could also reveal the heterogeneity of adoption behaviours, such as retail and manufacturing. In addition, the interplay between regulatory frameworks, cultural dynamics, and organisational readiness could inform potential policymakers, platform developers, and smaller and growing enterprises (Vendors). These research directions deepen our theoretical understanding of e-commerce adoption and provide practical directions to advance e-commerce adoption strategies in Vietnam's rapidly changing digital market. This literature review synthesises multilayered factors that mould e-commerce adoption among Vietnamese vendors. This synthesises the barriers and opportunities in e-commerce adoption by extending TAM to address these external factors. These findings emphasize the multi-faceted approach to adoption, as well as both the intrinsic and extrinsic determinants. This work opens the way for more robust approaches to aid the digital transformation of vendors in Vietnam and advance the country's broader economic modernizing ambit.

3. METHOD

This study extends the Technology Acceptance Model (TAM) to include the factors of Trust (TR) and Data Security (DS), which are the most important factors for Vietnamese vendors to accept an e-commerce platform. For the conceptual framework, the direct impact of Perceived Usefulness (PU), Perceived Ease of Use (PE), and Data Security (DS) on Trust (TR) is analyzed, and the analysis is correlated with the intention factor (IF). TR mediates the PU, PE and DS. To address the specific problems of Vietnamese vendors, this all-encompassing approach targets these problems. The proposed model provides a comprehensive framework for understanding the critical factors for e-commerce adoption and can serve as a source of information for policymakers and e-commerce platform providers in developing targeted policies. Figure 1 illustrates the relationship between the extended TAM model and a key mediator, which is Trust, towards the intention of adoption by Vietnamese vendors.

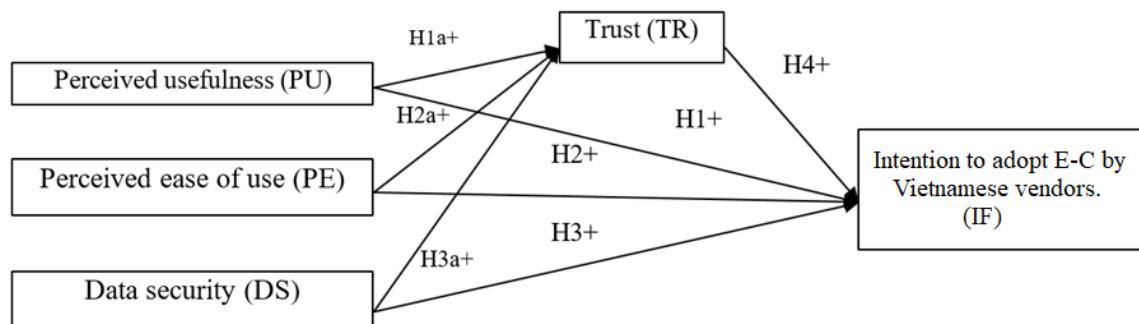


Figure 1. Proposed research model.

Based on the literature review and the extended research model, the following hypotheses are proposed:

H₁: Perceived Usefulness (PU) positively affects Vietnamese vendors' intention to adopt E-commerce.

H_{1a}: Trust (TR) mediates the relationship between Perceived Usefulness (PU) and intention to adopt E-commerce by Vietnamese vendors (IF).

H₂: Perceived Ease of Use (PE) positively affects Vietnamese vendors' intention to adopt E-commerce.

H_{2a}: Trust (TR) mediates the relationship between Perceived Ease of Use (PE) and the intention to adopt E-commerce by Vietnamese vendors (IF).

H₃: Data Security (DS) positively affects Vietnamese vendors' intention to adopt E-commerce.

H_{3a}: Trust (TR) mediates the relationship between Data Security (DS) and intention to adopt E-commerce by Vietnamese vendors (IF).

H₁: Trust (TR) positively affects Vietnamese vendors' intention to adopt E-commerce.

The survey method used in this study was an online questionnaire. The online questionnaire was chosen because it has several advantages, such as being cheaper, better (concerning response rate), faster, and more straightforward than conventional methods (Fricker & Schonlau, 2002). The questionnaire was divided into two parts. The first part of the questionnaire addressed different demographic factors such as age, education, gender, income, and access to digital payments. The second relates to Vietnamese vendors' current e-commerce adoption: Perceptions of benefits, compatibility, security, complexity, costs, readiness, innovativeness, government support, and willingness to engage with competitors, customers, and e-commerce. Respondents were asked about their perceptions of the 30 opinions on e-commerce (see Table 1) in this section, where respondents answered from 1 (strongly disagree) to 5 (strongly agree) on a five-point Likert scale. In this study, respondents are online vendors in Vietnam. The authors obtained 710 responses, but only 515 qualified for sampling, and 195 were disqualified for incomplete responses. The respondents were owners of Vendors, top managers, and employees. A total of 600 questionnaires were sent to respondents via email. Table 1 shows the profiles of the vendors involved in this study. In total, N = 515 vendors were included in the final sample.

Descriptive statistics and structural equation modelling (SEM) were performed using SmartPLS software 4.0. It was used because the PLS-SEM approach can identify the complete model of the relationships and the latent variables (Byrne, 2016). This analysis was primarily focused on confirmatory factor analysis (CFA) and the resulting regressions, with published significance levels of $p < .05$ in line with standard practice. Participating in the study was an unpaid activity for the respondents. The questionnaire was self-completed and developed by the researcher. The factor analysis method was used to analyze Cronbach's alpha to test the reliability of the questionnaire. Values above 0.8 were obtained, indicating that the results are near perfect.

Table 1. The profiles of Vietnamese vendors (n=515).

| Characteristics | Percentage |
|--------------------------------|------------|
| Gender | |
| Female | 36.9% |
| Male | 63.1% |
| Experience in using E-commerce | |
| Yes | 98.4% |
| No | 1.6 % |
| Age | |
| Under 25 | 6.4% |
| 25 – 35 | 45.2% |
| 36 – 45 | 30.5% |
| 46 – 55 | 10.5% |
| Above 55 | 7.4% |
| Income | |
| Under 15 million | 0.8% |
| 15-30 million | 32.4% |
| 30-50 million | 50.3% |
| Above 50 million | 16.5% |
| Education | |
| High School | 24.5% |
| Undergraduate | 59.2% |
| Postgraduate | 16.3% |
| Company size | |
| 1-10 billion | 17.1% |
| 10-30 billion | 23.3% |
| 30-50 billion | 35.1% |
| 50-70 billion | 22.3% |
| 70-100 billion | 2.1% |

4. RESULTS

4.1. Measurement Model Assessment

It was evaluated rigorously to ensure the reliability, validity, and goodness-of-fit of the measurement model, which lends a well-founded model for subsequent analysis. Reliability was measured with Cronbach's Alpha and Composite Reliability (CR), in which all constructs exceeded 0.7 (Hair, Black, Babin, Anderson, & Tatham, 2014), showing good internal consistency. The findings of the measurement model test are illustrated in Table 2. All the constructs, Perceived Usefulness (PU), Perceived Ease of Use (PE), Trust (TR), Data Security (DS), and Behavioral Intention (BI), had Cronbach's alpha values between 0.88 and 0.92 and CR values between 0.90 and 0.94. The research results replicate findings from Nguyen et al. (2023), who establish reliability as essential for creating reliable studies about retailer e-commerce adoption. Results demonstrate that the average variance extraction (AVE) criteria reached levels above 0.5, as Fornell and Larcker (1981) set for all constructions. The constructs achieved convergence validity at their respective dimensions based on AVE values with PU at 0.71, PE at 0.68, TR at 0.75, DS at 0.72, and BI at 0.73. Lee et al. (2024) explain how AVE is an essential method for construct validation when studying e-commerce adoption in dynamic settings. Table 3 summarizes the results of discriminant validity. The Fornell-Larcker criterion supports the individual distinctiveness of measures since the square root of the constructs' AVE exceeds the correlations between constructs, demonstrating discriminant validity. The validity measurement technique matches the method Tran et al. (2024) applied to differentiating constructs within complex models such as TAM. The measurement model fit was verified due to the Standardized Root Mean Residual (SRMR) value of 0.06 below 0.08 (Henseler, Ringle, & Sinkovics, 2015). The valid measurement model confirms the validity through its strong model fit statistics. The adopted constructs are valid tools to measure genuine e-commerce adoption drivers for Vietnamese vendors. The established standards provide essential conditions for empirical and theoretical validity in analyzing this study's outcome, which supports appropriate structural model assessments.

Table 2. The text shows the construct validity and reliability.

| Variables | Cronbach's alpha | Composite reliability (rho_c) | AVE |
|----------------------------|------------------|-------------------------------|-------|
| Perceived usefulness (PU) | 0.879 | 0.911 | 0.672 |
| Perceived ease of use (PE) | 0.920 | 0.940 | 0.757 |
| Data security (DS) | 0.829 | 0.879 | 0.594 |
| Trust (TR) | 0.914 | 0.936 | 0.745 |
| Intention factor (IF) | 0.886 | 0.916 | 0.686 |

Table 3. Shows the discriminant validity (Fornell-Larcker criterion).

| Variables | DS | IF | PE | PU | TR |
|-----------|-------|-------|-------|-------|-------|
| DS | 0.771 | | | | |
| IF | 0.333 | 0.829 | | | |
| PE | 0.283 | 0.389 | 0.870 | | |
| PU | 0.278 | 0.481 | 0.520 | 0.820 | |
| TR | 0.237 | 0.490 | 0.531 | 0.566 | 0.863 |

4.2. Structural Model Assessment

If the measurement model is deemed reliable and valid, then the evaluation of the structural model would then follow. To assess the significance of the path coefficients, the bootstrap resampling technique was used with 5000 replicates in the current study with 515 cases (Hair, Hult, Ringle, & Sarstedt, 2017). Table 4 shows the R² value, representing the variation of the endogenous latent variables explained by the exogenous latent variables (Cohen, 1988). The authors of the study concluded that it is relevant that the extent of variation of the internal constructs is as described in the external constructs. SRMR should also not be used alone; other fit measures, such as R-squared and Q-squared, should also be used with SRMR to evaluate the model fit. SRMR is the average of the squared difference between the observed and the predicted covariance, with a value closer to 0 indicating a better fit (Hair et

al., 2017). The value was almost equal to zero, pointing to the correct fit of the tested model. The above measures in Table 4 summarize the PLS-SEM model's goodness of fit.

Table 4. Shows the Coefficients of determination (R^2).

| Variables | R-square | R-square adjusted | SRMR |
|-----------------------|----------|-------------------|-------|
| Trust (TR) | 0.398 | 0.395 | 0.063 |
| Intention factor (IF) | 0.337 | 0.331 | |

In order to test the mediation effect of the variables in this study, the procedures recommended by Hair et al. (2017) were adopted, including Table 5. It can therefore be concluded that perceived usefulness (PU) has a significant positive impact on the intention factor ($\beta = 0.193$, $t = 1.232$, $p = 0.0000$), perceived ease of use (PE) ($\beta = 0.066$, $t = 0.353$, $p = 0.0000$), and data security (DS) ($\beta = 0.182$, $t = [\text{missing value}]$). Hence, hypotheses H1, H2, H3, and H4 are supported. Likewise, PU has a significant positive impact on trust ($\beta = 0.391$, $p = 0.0000$), PE ($\beta = 0.316$, $p = 0.0000$), and DS ($\beta = 0.039$, $p = 0.0000$).

Thus, H1a, H2a, and H3a hypotheses have been supported (see Table 6). The results of these discussions are predicted in Figure 2.

Table 5. Results of hypothesis testing via bootstrapping.

| Hypothesis | Path | Path coefficient | β | P- value | Decision |
|------------|---------------------|------------------|---------|----------|-----------|
| H1 | PU \rightarrow IF | 0.239 | 0.193 | 0.0000 | Supported |
| H1a | PU \rightarrow TR | 0.391 | 0.039 | 0.0000 | Supported |
| H2 | PE \rightarrow IF | 0.066 | 0.154 | 0.0000 | Supported |
| H2a | PE \rightarrow TR | 0.316 | 0.316 | 0.0000 | Supported |
| H3 | DS \rightarrow IF | 0.182 | 0.193 | 0.0000 | Supported |
| H3a | DS \rightarrow TR | 0.039 | 0.039 | 0.0000 | Supported |
| H4 | TR \rightarrow IF | 0.276 | 0.276 | 0.0000 | Supported |

Table 6. Shows the Mediation Analysis

| Path | β | P- Value | Decision |
|--------------------------------------|---------|----------|-----------|
| PE \rightarrow TR \rightarrow IF | 0.087 | 0.0000 | Supported |
| PU \rightarrow TR \rightarrow IF | 0.108 | 0.0000 | Supported |
| DS \rightarrow TR \rightarrow IF | 0.011 | 0.0000 | Supported |

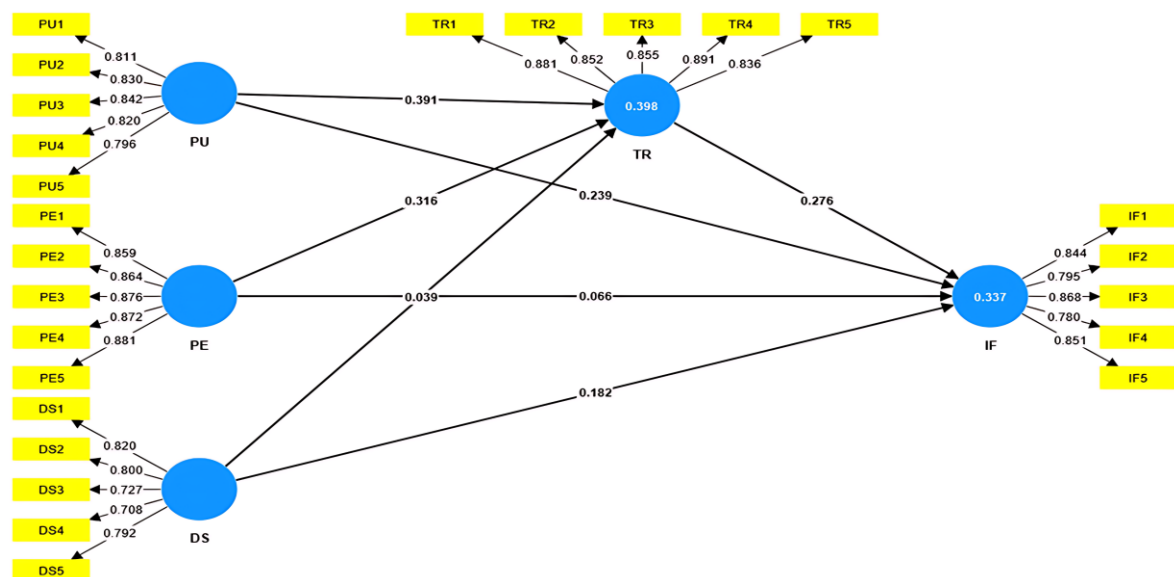


Figure 2. The partial least squares-structural equation modeling (PLS-SEM) model of adoption intention of E-commerce by Vietnamese vendors.

5. DISCUSSION AND CONCLUSION

5.1. Discussion

With evolving e-commerce platforms, businesses can engage customers globally and make online sales and purchases. However, e-commerce platforms currently have only about 1% of the global retail market share, although 85% of this gross global market share still includes actual stores (Dabhade, 2022). Since it is almost impossible to establish a business in the traditional online markets, Vietnamese vendors have slowly come to terms with the reality of establishing their firms online. Nonetheless, Vietnamese vendors must initiate significant investments similar to IT investments to modernize and upgrade management systems. However, there is doubt about the value of these investments in terms of return on investment. IT infrastructure pressures from customers and competitors lead many vendors to adopt e-commerce to earn more profits, serve customers satisfactorily and advertise more efficiently. However, ensuring data security (DS) in e-commerce services is important for Trust (TR) and brand strengthening in e-commerce services, thus leading to perceived ease of using e-commerce services. He also explained that other elements of technology acceptance matter for raising TR and IF, which are "Perceived usefulness (PU) and perceived ease of use (PEU)." Thus, this research empirically examines factors affecting e-commerce intentions using the TAM. Further, this study employed primary data from Vietnamese vendors using the PLS-SEM approach. The results also indicate that (PE) positively influences Trust acceptance of e-commerce among Vietnam's vendors. As such, the findings of this experiment are the same as those of Sikdar, Kumar, and Makkad (2015) and Wilson, Scott, and Hughes (2021) reveal, that PU has a significant impact on TR and intention to adopt e-commerce by Vietnamese vendors while PE has an impact on TR but not on intention to adopt e-commerce. The execution of Trusts redirects the users to select e-commerce services as PU has a strong and positive impact on the Trust data security and helps decrease the Trust despite the issue's significance; Vietnamese vendors need to minimise users' security concerns to continue building the users' confidence and encourage them to use products/services. The results also indicate that PE appears to have a positive and statistically significant effect on TR and IF. The findings support the findings of the related study by Wilson et al. (2021), who affirm that PE influences Vietnamese vendors' intention to use e-commerce. On the other hand, the researchers hypothesised that the influence on users' attitudes in the early stages of e-commerce adoption by Vietnamese vendors is because they are unfamiliar with it or have fewer opportunities to use it (Davis, 1989). Nowadays, customers are usually harassed by many fake companies through phone calls, and their personal information, including their full name, phone number, email, and home address, is given out. If they are not careful when receiving company information, it is easy to lose money on fake and unqualified products. There are clear signs that Vietnamese vendors have become accustomed to selling and buying traditionally in the current scenario. As international platforms come to Vietnam, they must adapt their trading activities to social trends.

5.2. Conclusion

In this study, we investigate the factors influencing the adoption of e-commerce platforms by Vietnamese vendors, with three main factors determining Trust (TR), namely Perceived Usefulness (PU), Perceived Ease of Use (PE), Data Security (DS), and then influence the Intention Factor (IF). Based on an extended Technology Acceptance Model (TAM), the research findings highlight the mediating role of trust in the relationship between PU, PE, and DS and the intention to adopt e-commerce platforms. The effects of Trust itself and online shopping platforms on Vendors' intention to adopt e-commerce platforms were identified. The results indicate that PU, PE, and DS positively influence Trust and vendors' intention to use e-commerce platforms. In addition, data security has been shown to indirectly promote trust adoption by influencing vendors' perceptions of reliability and security. This study emphasises the adoption of e-commerce among Vietnamese vendors and the importance of considering trust and security concerns. The study concludes that trust and data security are central to e-commerce adoption in Vietnam. Policymakers, platform providers, and vendors need to work together to remove existing barriers and unlock the potential of e-commerce as a tool for economic modernization. Modernization contributes to the existing literature

by adding data security and trust to the Technology Acceptance Model (TAM). This gives a complete picture of e-commerce adoption in developing countries like Vietnam. This integration fills critical gaps in previous research that ignored the importance of external factors such as data security. In contrast to large companies, vendors in emerging economies needing new e-commerce infrastructures are particularly reliant on trust-assured digital frameworks to support e-commerce expansion. These findings imply practical implications and show that Vietnamese e-commerce platforms and Vietnamese policymakers need to put more effort into creating a robust data security system and building trust in the openness of policies and services. Offering customized interfaces for the products offered through e-commerce can help improve the perceived usefulness of e-commerce vendors, ease of use, and lower the acceptance barriers for user-friendly interfaces. A symbiotic relationship between the government, Vendors, and e-commerce platforms will form an ecosystem that promotes secure and reliable digital platforms, which will facilitate adoption and improve modernisation and the growth of vendors in Vietnam. Future studies should consider other factors influencing e-commerce adoption besides organisational attitudes and financial constraints. Finally, longitudinal studies could provide a wealth of findings on how Vietnamese vendors' confidence and perceptions of data security change over time. Research that goes beyond vendors in Vietnam to include other sectors and regions could provide further insights into e-commerce adoption elsewhere. The result of this endeavour would be a more complete picture of how businesses in emerging markets use the digital platform.

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