

Drivers of Intention and Decision to Use E-banking Services in Ho Chi Minh City, Vietnam During the COVID-19 Pandemic

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Abstract. This study estimates the factors that affect the decision to use E-banking services in Vietnam under the role of a mediating factor. Drawing on principles from consumer behavior theory, the theory of planned behavior, the theory of reasoned action, and the technology acceptance model, the study delves into how factors like perceived usefulness, perceived ease of use, perceived risks, promotion and advertising, trust, and website quality affect customer's decision to use E-banking services in the banking sector. The author employs qualitative and quantitative research methods to demonstrate that those factors are statistically significant and positively influence the decision to use e-banking, with the factor of intention to use e-banking services as the mediator. This study underscores the importance of incentivizing consumers to partake in online transactions, especially during the COVID-19 pandemic.

Keywords: COVID-19, intention to use, decision to use, E-banking services, Ho Chi Minh City.

1. Introduction

E-banking, or electronic banking, refers to an online banking service that enables customers to efficiently manage their accounts and conduct transactions via internet-connected devices like smartphones, laptops, and desktop computers. In recent years, Vietnam has witnessed significant advancements in information technology and internet infrastructure, leading to a gradual rise in online trading. Remarkably, young are particularly adept at using the Internet and quickly utilizing technology to purchase online via electronic devices (Al-Hattami et al., 2023; Esmeli et al., 2021). The percentage of people using the Internet is increasing from 2017 to 2022 (The White Book on Vietnamese E-Business 2018-2022).

Furthermore, the emergence of COVID-19 in 2019 created favorable conditions for the expansion of the financial sector, driving escalated online expenditures as a measure to safeguard consumer well-being. Enterprises can harness the online realm to disseminate information about their offerings to prospective customers, unrestricted by time or geography, especially commercial banks.

Consumers can leverage internet and E-commerce to meet their requirements, contributing to the containment of the epidemic's spread. The growing trend of online shopping has helped promote cashless payment. With the application of modern, safe payment methods, banks also launch attractive incentives specifically for online payment transactions. Digital banking is receiving overwhelming support from Vietnamese consumers, the number of transactions via Internet and Mobile Banking has increased significantly.

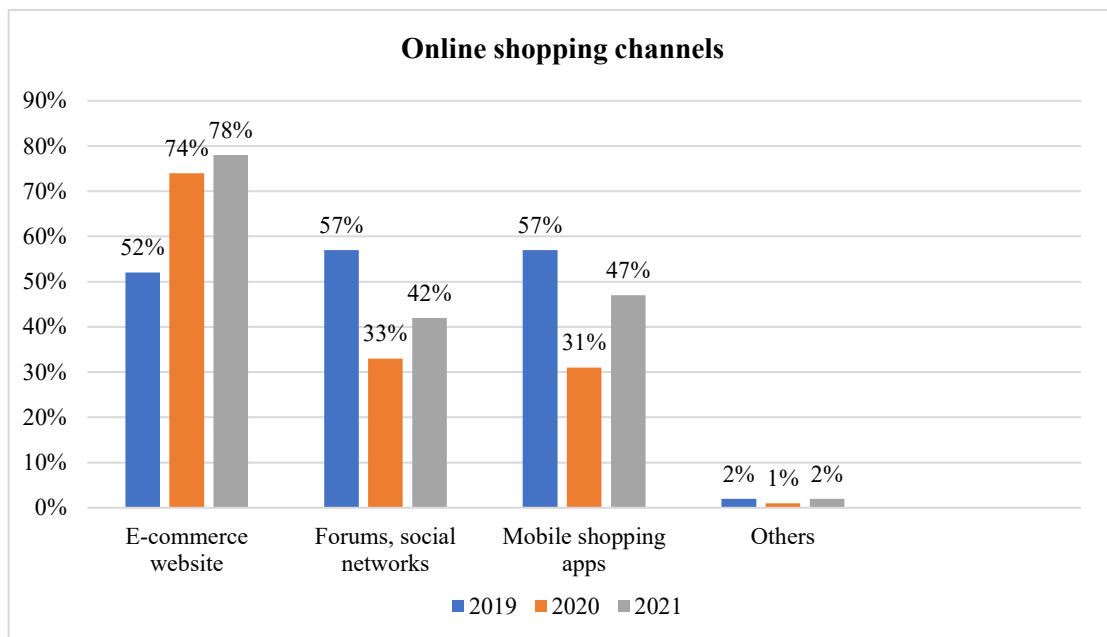


Fig.1: Online shopping channels

Source: The White Book on Vietnamese E-Business 2019-2022

The White Book on Vietnamese E-Business 2019-2022 reports that e-commerce websites are the preferred method of payment for Internet users (Figure 1). Books claim that the percentage of e-commerce users is over 50% and has significantly risen over time. This demonstrates that online shopping is becoming increasingly popular among Vietnamese consumers as they feel more secure and gain their trust. Ho Chi Minh City is the busiest trading region and economic hub of South Vietnam. Thanks to its convenience and swiftness, online shopping has recently seen a surge in popularity among consumers. It is worth noting that the COVID-19 pandemic has altered awareness and gradually transformed the banking habits of a significant portion of the Vietnamese population, shifting them

towards digital platforms. This shift represents both an opportunity and a challenge for banks in Vietnam as they work on advancing their digital banking services.

The total value of card payment transactions at point of sale (POS) and the total value of card and electronic wallet payments through the Napas online payment gateway increased by 50% and 125%, respectively, compared to the same period in 2020. Non-cash payment activities achieved high growth, with online channel payments increasing by 48.8% in terms of quantity and 32.6% in terms of value, while mobile phone channel payments increased by 76.2% in terms of quantity and 87.5% in terms of value (The State Bank of Vietnam, 2022).

The research objective was to estimate the factors affecting customers' decision to use E-banking services in Vietnam, which is mediated by intention to use the services. Hence, the author aims to answer the question "To what extent, do the factors have an effect on customers' decision to use E-banking services in Vietnam, under the mediating role of intention to use?"

2. Literature Review and Hypothesis Development

2.1. Literature review

Purchase intention is explained by the behaviour of someone when he or she wishes/considers buying a product (Khairunnisa et al., 2018; Komalasari et al., 2021; Kotler & Keller, 2006). Rachbini (2018) concluded that there is a positive relationship between perceived risk, perceived benefit, trust, and purchase intentions of Traveloka consumers. Trust and brand image substantially influence purchase intentions (Zamrudi et al., 2016). Besides, the intention to make online purchases serves as an indicator utilized to attain the objective of actual buying behavior (Dewi et al., 2020; J. Lee & Lee, 2015).

Fishbein and Ajzen (1975) offer a more detailed analysis of intentions, breaking them down into four distinct components: the behavior, the goal or target, the subject matter related to the target, the situation in which the behavior occurs, and the ongoing aspect of the behavior over time (Fishbein & Ajzen, 1975).

According to Ajzen (1991), intention is a motivating factor that drives an individual's willingness to engage in a particular behavior. When people have a strong intention to perform a specific behavior, they are more likely to carry it out. Mentioned later, Ajzen (2002) explained that attitude, subjective norms, and behavior control awareness directly influence intention.

According to Turban et al. (2017), online shopping is a service where customers use Internet-connected electronic devices to complete their purchases. Searching for information, placing orders, and making payments online are all parts of the online shopping experience. Because they can lower transaction costs, close the gap between buyers and sellers, and expand their markets, some businesses have chosen online sales over traditional ones.

Fishbein and Ajzen (1975) introduced the Theory of Reasoned Action (TRA), which focuses on understanding consumer behavior and predicting behavioral inclinations. According to TRA, these inclinations are influenced by two main components: attitudes toward the behavior and subjective norms. In essence, TRA posits that people are more inclined to have higher intentions (motivation) to engage in a recommended behavior if they hold a favorable attitude toward it and believe that others expect them to perform it.

Numerous studies have provided evidence of a strong correlation between attitudes, subjective norms, behavioral intention, and behavior (Sheppard et al., 1988). In this theory, intention results from two core determinants: a person's attitude toward the behavior and the subjective norm (Fishbein & Ajzen, 1975).

The theory of planned behavior (TPB) (Ajzen, 1991a) is the development and improvement of the TRA (Fishbein & Ajzen, 1975). TPB was created because of the limitations of the previous theory and shows all behaviors over which people can exert self-control. TPB was introduced by Ajzen in 1991 as

an enhancement to the TRA. It expanded upon TRA by introducing a third factor influencing intention: perceived behavioral control. According to TPB, attitudes, subjective norms, and perceived behavioral control are the primary factors that directly shape one's intentions, and these intentions subsequently impact one's behavior (Teo, 2011).

One of these is the technology acceptance model (TAM) (Davis, 1985). TAM drew particular attention from researchers in the field of management information systems as it became the core theoretical foundation and was used for successful information system development (S. Taylor & Todd, 1995). In this study, it was selected because it predicts behavior using information technology (Davis, 1985). In addition, in the TAM, behavior (BI) is influenced by attitude (A) and sense of usefulness (U), whereas behavior in the TRA model is influenced by subjective attitudes and norms.

In its initial formulation, the Technology Acceptance Model (TAM) incorporated the concepts of Perceived Usefulness, Perceived Ease of Use, and Attitudes Towards Usage to explain and predict the adoption of technology systems (Davis, 1989; Nikou & Economides, 2017; Teo, 2011). Perceived Usefulness, as defined by Davis (1989), represents an individual's belief in how using a specific system will enhance their job performance. Perceived Ease of Use, on the other hand, is the extent to which a person perceives that using the system will be effortless. In TAM, the behavioral intention to use a system is influenced by one's attitude towards its usage, as well as the direct and indirect effects of perceived usefulness and perceived ease of use (Davis, 1989).

2.2. Empirical studies

Gerber et al. (2014) studied the impact of risk perception on consumers' online shopping behavior. The results show that risk perception has an impact on online buying behavior. In addition, the authors showed that the characteristics of emerging markets are quite different from those of developed markets, in which consumers seem to be more cautious when buying online. Their findings are in line with Hussein & Saad (2016); Kassim & Ramayah (2015), which also affirm that the various dimensions of perceived risk play a significant role in influencing the intention to use internet banking.

Yaseen & El Qireem (2018) conducted a study examining the intention to use E-banking services in Jordanian commercial banks. Their research revealed that the key factors influencing the intention to use E-banking services in this context are effort expectancy, social influence, and perceived quality of E-banking services.

Ali (2020) conducted a study on the relationship between COVID-19 and online consumer behavior in Iraq has been conducted by Ali (2020). The authors suggest that COVID-19 may have led Iraqi consumers to embrace technology and adapt their lifestyles to limited circumstances. This means that consumers are aware of the usefulness of online shopping during the COVID-19 pandemic. Music & Charlebois (2022); T. M. A. Nguyen et al. (2022); V. K. Pham et al. (2020) also demonstrated that COVID-19 affects online consumers' behavior and attitudes.

Zhang and Yu (2020) found the impact of risk perception on consumers' cross-platform purchasing behavior. The authors conclude that consumer buying behavior depends on the perceived security and risk of digital platforms.

The study by L. Pham & Anh (2014) investigates that subjective norms, perceived ease of use, trust, and perceived benefit were statistically significant in directly influencing intention to use E-banking in Vietnam.

Nguyen and Nguyen (2020) demonstrate the factors affecting the online buying behavior of customers. The results show that five factors affect the online purchase behavior of customers (1) perceived ease of use, (2) perceived usefulness, (3) reliability, (4) social influence, and (5) benefits.

Ta and Dang (2021) identified and evaluated the impact of factors affecting the online shopping intentions of Generation Z consumers. The results show that there are four factors—perceived usefulness, trust, perceived risk, and psychological safety—that affect Generation's Z online shopping intention.

2.3. Hypothesis development

Based on TAM, perceived usefulness is the significant factor affects the intention to use technology (Davis, 1989). In the banking sector, the intention to use E-banking services is influenced by many factors, which have varying impacts on usage. One of the factors is perceived usefulness (Anouze & Alamro, 2019; Arora & Kaur, 2018; Nikou & Economides, 2017; Venkatesh & Davis, 2000). These authors confirm that perceived usefulness positively affects the intention to use E-banking services. Hence, the hypothesis is proposed:

H1: Perceived usefulness positively affects the intention to use E-banking services in Vietnamese banking sector.

As mentioned above, perceived ease of use is another factor influencing customer's intention to use technology (Dajani & Yaseen, 2016; Yaseen & El Qirem, 2018). Perceived ease of use pertains to an individual's perception that using a particular system is straightforward or uncomplicated (Davis, 1989; S. Taylor & Todd, 1995). As a result, it is acknowledged as a crucial factor that significantly affects the adoption of new technology, as emphasized (Moore & Benbasat, 1991).

Furthermore, perceived ease of use is commonly acknowledged as a valuable tool for assessing information system applications and forecasting their usage (Doll et al., 1998). As a result, it plays a well-defined role as a component in the process of adopting information technology. The perceived ease of use has been shown to have a notable influence on the intention to use E-banking services, and it plays a pivotal role in shaping customers' intentions, as indicated by studies conducted by AKTER et al. (2021); Anouze & Alamro (2019); Nikou & Economides (2017); Yaseen & El Qirem (2018).

H2: perceived ease of use positively affects the intention to use E-banking services in Vietnamese banking sector.

Perceived risks refer to the potential negative consequences that may result from consumer behaviors (Bauer et al., 2005; Ostlund, 1974), and these are subsequently central to key aspects of consumer relationships (Martins et al., 2014). Perceived risk can be understood as the anticipation of unfavorable outcomes in a consumer's decision-making process when uncertainty is a factor, involving the expectation of adverse decision consequences (Dowling & Staelin, 1994) or potential losses (Grewal et al., 2007). Perceived risk serves as a significant impediment to the growth of E-banking (Chauhan et al., 2019). It has a positive impact on the intention to use E-banking services (Chauhan et al., 2019; Kim & Chiu, 2018; Nagdev et al., 2021). J. W. Taylor (1974) utilizes perceived risk theory to elucidate consumer behavior and the factors influencing their decision-making. Fadare et al. (2016) observed that perceived risk has a detrimental effect on behavioral intentions regarding internet banking. Research based on the TAM indicates that, in the context of E-banking, perceived risk negatively influences behavioral intentions (Fadare et al., 2016; Maditinos et al., 2013). Kassim & Ramayah (2015); Marafon et al. (2018); Mer & Viridi (2021); Y. Zhang et al. (2018) confirm that perceived risk affects on the intention to use E-banking services. Hence, the proposed hypothesis is:

H3: perceived risk positively affects the intention to use E-banking services in Vietnamese banking sector.

Social media has introduced new avenues for companies to promote their products (Khaleeli, 2020; Straker & Wrigley, 2016). It has evolved into a primary platform for brand advertising (Keller, 2009) and has gained a reputation as a legitimate and cost-effective method for advertising (Bruhn et al., 2012). While sales promotion has been recognized as a crucial means of communicating with customers on social media (Straker et al., 2015). This encompasses any promotional activities that companies undertake on social media (Khaleeli, 2020). Furthermore, Hilman et al. (2017) have asserted that social media sales promotions hold a strong appeal for customers and can influence their intention to make a purchase. These promotions on social media may include various options such as discount codes, offers, and coupons. According to (De Vries et al., 2017; Khaleeli, 2020; Yazdanparast et al., 2016), the intention to use E-banking services is affected by promotion and advertising. Hence, we propose the hypothesis as follows.

H4: promotion and advertising positively affect the intention to use E-banking services in Vietnamese banking sector.

Pavlou (2003) integrated the concepts of trust and perceived risk into the TAM and demonstrated that Trust has a significantly positive influence on consumers' intention to make a purchase. McCloskey (2006) also made a case for trust on the intention to buy online. Because trust plays a pivotal role in shaping an individual's perception of risk, and this, in turn, can influence how they perceive the benefits of a platform. Z. W. Lee et al. (2018) elaborate on the idea that when a consumer places a higher level of trust in a technological platform, it diminishes their perception of risk and promotes a more positive view of the benefits derived from using that platform. The authors argue that trust becomes especially critical in the realm of online transactions due to the prevalence of various risks. The lack of trust poses a significant obstacle to the acceptance and adoption of E-banking, consumer dissatisfaction with e-banking often stems from this lack of trust (Banu et al., 2019). Therefore, if E-banking providers can effectively address concerns related to perceived risk and trust, it is likely to result in significant improvements in the acceptance and adoption of e-banking services. AKTER et al. (2021); Banu et al. (2019); Bashir & Madhavaiah (2014) find a significant and positive relationship between the trust and the intention to use E-banking services. Hence, we propose the hypothesis as follows.

H5: trust positively affect the intention to use E-banking services in Vietnamese banking sector.

Buyers' perception of website quality is intricately connected to the quality of website design, and this, in turn, influences the quality of service (efficiency), system performance (technical quality), and the accuracy of information provided (DeLone & McLean, 2003). Moreover, websites that provide an enjoyable experience are more likely to attract repeat visitors (Lin, 2007), ultimately leading to increased purchasing behavior (C.-M. Chiu et al., 2012). Furthermore, Ahn et al. (2004) underscore the crucial role of web quality in the context of electronic shopping. Banks' websites serve as gateways for various service and product providers engaged in e-business. Research by Jayawardhena & Tiu Wright (2009) has demonstrated that web attributes wield a significant influence on online behaviors. Additionally, Bauer et al. (2005); Mahfuz et al. (2016) delved into the concept of service quality within E-banking portals and formulated their own service quality model. According to Aladwani (2006); Giri & Wellang (2016); Mahfuz et al. (2016) demonstrated that website quality positively affects customer's intention to use E-banking. Thus, the hypothesis is proposed as follows.

H6: website quality positively affects the intention to use E-banking services in Vietnamese banking sector.

The relationship between "intentions to use" and "actual behavior" is examined in psychology research, consumer behavior, and various other disciplines (Ajzen, 1991a). According to (hmad et al. (2020), intention to use has an effect on actual use E-banking.

H7: intentions to use positively affects the decision to use E-banking services in Vietnamese banking sector.

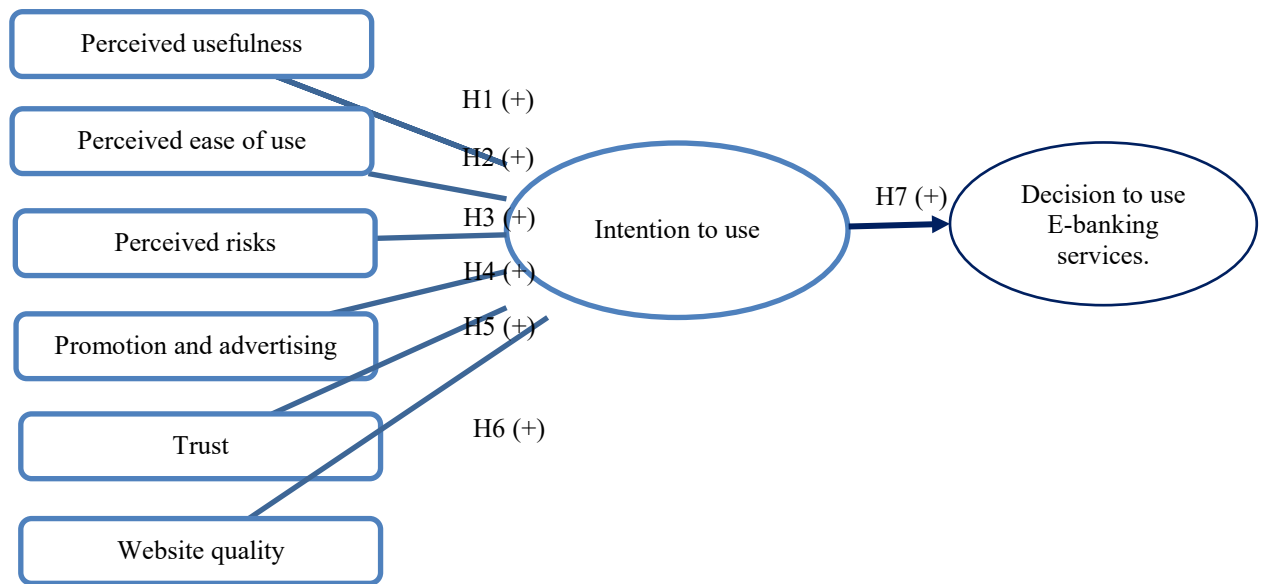


Fig.2: Research model

3. Research Methods

3.1. Sample

To ensure that the sample size satisfies the legal basis of the sample size proposed by Bollen (1989), the minimum sample size should be five times the number of observed variables. Moreover, according to Hair et al. (2017), the minimum sample size should be between 100 and 150. Information collection was conducted from July 2022 to December 2022. A questionnaire was distributed to 300 consumers who shop in Districts 1, 3, 5, 7, 10, and Tan Binh District. A total of 287 valid questionnaires were collected, accounting for 95.6% of the total number of distributed questionnaires. Hence, the sample size satisfied the requirements for EFA analysis, as pointed out by Bollen (1989); Hair et al. (2017).

Table 1. Customer survey results

Criteria	Number of survey questionnaires	Percentage
Number of forms distributed	300	100%
Number of forms collected	291	97%
Number of valid forms	288	96%

3.2. Research methods

This study included three stages, which involved qualitative and quantitative methods. In the first stage, the article uses qualitative methods (expert interviews and customer surveys) to adjust and supplement observation variables in the draft scales. The results of the group discussions created the main scale. The author then designed the interview questionnaire and conducted the survey, which aimed to design a formal questionnaire. In this stage, the author applies a qualitative method to find relevant factors (Dawadi et al., 2021) in the current sector through interviews with ten experts from retailers and service companies in Ho Chi Minh City. They are the head of the department, marketing managers from Lienhiep HTX Coop Mart, Van Hanh Mall, and AEON shopping center. Then, the author set up a group discussion with 50 consumers to adjust suitable factor scales that aim to complete the survey questions with high reliability.

In the second stage, the author randomly surveyed consumers shopping in supermarkets, malls, and other shopping centers using the convenience sampling method. In the last stage, the author conducts a

quantitative research method using SmartPLS 4, which allows the measurement and structural models to test the proposed hypothesis.

In addition, quantitative methods are applied to estimate the effect of perceived usefulness, risk perception, trust, promotion and advertising, website quality, and macroeconomic factors on the online shopping behavior of consumers in Ho Chi Minh City. The author collected, coded, and screened the data for analysis using SmartPLS 4. PLS-SEM is adopted to predict research orientation to determine consumers who are over 18 years old and have online shopping behavior during COVID-19.

4. Research Results and Discussion

4.1. Descriptive statistics

Descriptive statistics were employed to examine the attributes of the participants, and this analysis was conducted using SPSS software. Three questions were posed to gather information on the demographics of the respondents, encompassing gender, age group, and educational background. The demographic data collected from the survey is presented in Table 2.

Table 2. Demographic analysis

Index	Frequency	Percentage (%)
1. Gender		
Female	167	58.0%
Male	121	42.0%
Total	288	100%
2. Age		
18 - 22	61	21.2%
23 - 35	152	52.8%
36 - 55	53	18.4%
Over 55	22	7.6%
Total	288	100%

Table 2 presents the demographic information of 288 respondents. The statistics in Table 2 show that 167 customers were female (58%), while the rest were male. This means that women tend to shop online more frequently than men. These findings are consistent with (Iris Marketing Agency, 2021; M. N. Nguyen, 2023).

The number of customers aged 23–35 accounted for the highest proportion (52.8%), followed by 21.2% of the group aged 18–22 years and 18.4% of the group aged 36–55 years. The lowest proportion fell into the age group of over 55 years (7.6%). The results imply that younger shoppers spend time online.

4.2. Research results

First, the measurement model was evaluated based on the indicator reliability, construct reliability, convergent validity, and discriminant validity. The reliability and validity of the constructs are presented in Table 3.

Table 3. Composite reliability

Constructs	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
DE	0.948	0.958	0.865
INT	0.907	0.908	0.783
PA	0.999	0.999	0.996
PE	0.951	0.963	0.911

PR	0.939	0.945	0.844
PU	0.983	0.984	0.952
TR	0.979	0.979	0.960
WEB	0.866	0.872	0.788

As indicated in Table 3, all the factors exhibit Cronbach's alpha values exceeding 0.8, indicating that the constructs are deemed acceptable, in line with the findings of Henseler et al. (2015). Furthermore, all the constructs meet the criteria for Composite Reliability (CR) and Average Variance Extracted (AVE), following the guidelines outlined by Hair et al. (2017). Consequently, these results affirm that the constructs possess both reliability and convergent validity.

Table 4. Composite reliability

	DE	INT	PA	PE	PR	PU	TR	WEB
DE	0.930							
INT	0.516	0.885						
PA	0.430	0.660	0.998					
PE	0.414	0.427	0.316	0.954				
PR	0.272	0.481	0.329	0.324	0.919			
PU	0.298	0.654	0.521	0.283	0.469	0.976		
TR	0.246	0.365	0.176	0.302	0.297	0.386	0.980	
WEB	0.380	0.558	0.528	0.335	0.411	0.482	0.220	0.888

Table 4 shows the discriminant validity assessment using the Fornell-Larcker criterion, as suggested by (Fornell & Larcker, 1981). In addition, to examine the discriminant validity using the PLS approach, values of heterotrait–monotrait correlations less than 0.900 (Table 5) will be acceptable (Henseler et al., 2015). Additionally, both the model's predictive power and causal relationships between the variables' constructs were statistically significant (Figure 3).

Table 5. Heterotrait-monotrait ratio (HTMT) - Matrix

	DE	INT	PA	PE	PR	PU	TR	WEB
DE								
INT	0.550							
PA	0.440	0.693						
PE	0.432	0.455	0.325					
PR	0.284	0.518	0.341	0.342				
PU	0.304	0.692	0.525	0.293	0.485			
TR	0.252	0.387	0.178	0.314	0.308	0.394		
WEB	0.416	0.627	0.564	0.369	0.452	0.520	0.238	

Figure 3 shows that the R-square value for the estimated equation is 0.631, which is significant at the 1 percent level of probability, while the adjusted R-square explains that 62.3% of the variation in intention to use E-banking services is described by perceived usefulness, perceived ease of use, perceived risks, promotion and advertising, trust, and website quality. In addition, intention to use E-banking services explains 26.3% the variation of decision to use E-banking services in Vietnam.

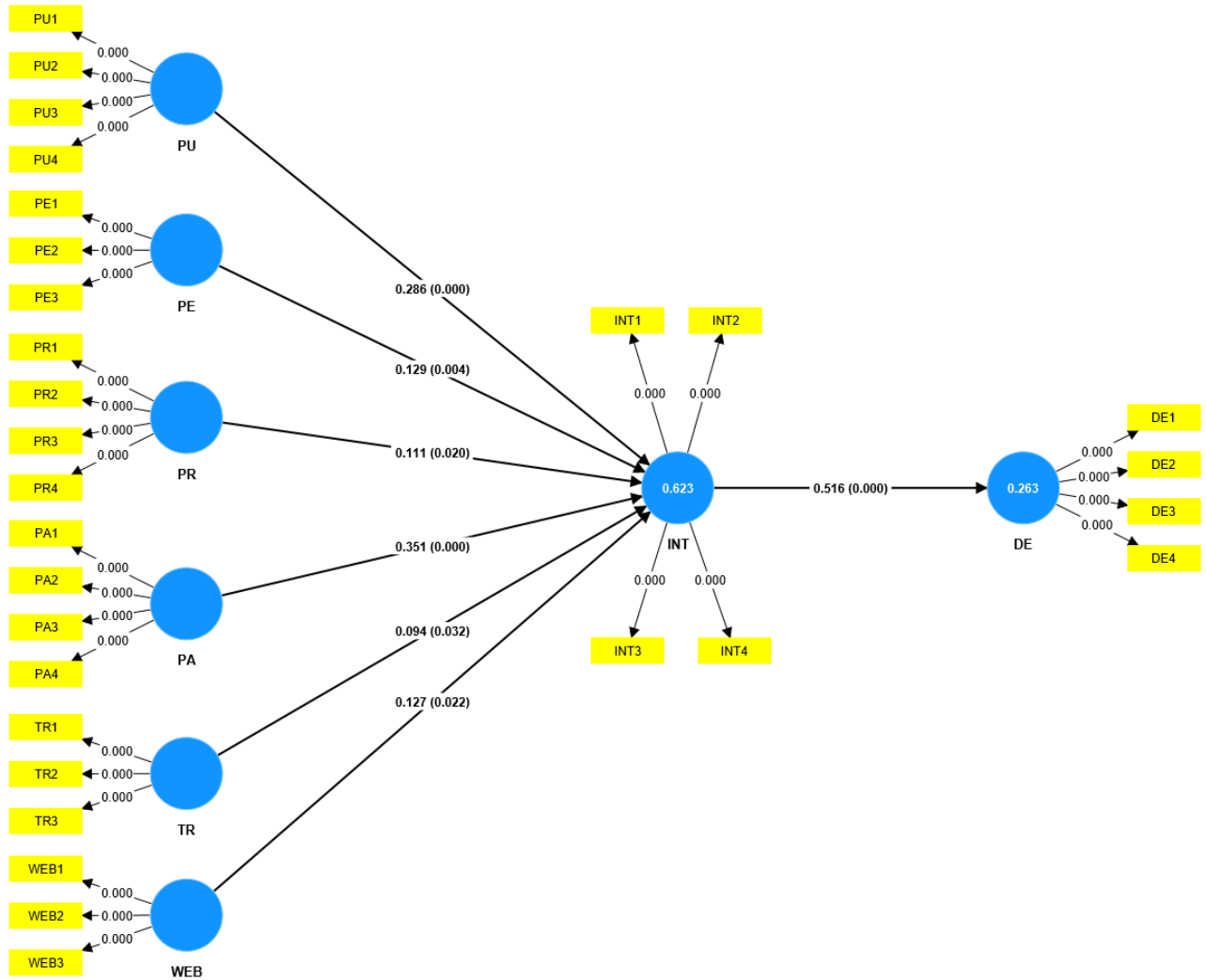


Fig.2: Structural equation modeling (PLS- SEM)

The results presented in Table 6 provide a comprehensive overview of the outcomes derived from the analytical bootstrapping technique, which was employed to test the hypotheses. This technique assesses the significance of the relationships between the variables using a 5000-re-sampling bootstrapping procedure, as implemented by SmartPLS.

Table 6. Hypothesis testing

Hypothesis	Path	β	p-values	Decision
H1	Perceived usefulness -> Intention to use E-banking services	0.286	0.000	Accept
H2	Perceived ease of use -> Intention to use E-banking services	0.129	0.019	Accept
H3	Perceived risks -> Intention to use E-banking services	0.111	0.000	Accept
H4	Promotion and advertising -> Intention to use E-banking services	0.351	0.031	Accept
H5	Trust -> Intention to use E-banking services	0.094	0.022	Accept
H6	Website quality -> Intention to use E-banking services	0.127	0.004	Accept
H7	Intention to use E-banking services -> Decision to use E-banking services	0.516	0.000	Accept

The findings in Table 6 demonstrate that perceived usefulness, risk perception, promotion and advertising, Trust, Website quality, macroeconomic factors, and intention to shop online have a positive and significant effect on online shopping behavior because their p-values are less than 5%. Furthermore, the results are consistent with those of Adnan (2014); M. T. Nguyen & Nguyen (2020). Therefore, all the proposed hypotheses in this regard are accepted. Path coefficients are expressed as follows:

- Perceived usefulness affects intention to use E-banking services, with the coefficient of 0.286.
- Perceived ease of use affects intention to use E-banking services, with the coefficient of 0.129.
- Perceived risks affect intention to use E-banking services, with the coefficient of 0.111.
- Promotion and advertising affect intention to use E-banking services, with the coefficient of 0.351.
- Trust affects intention to use E-banking services, with the coefficient of 0.094.
- Website quality affects intention to use E-banking services, with the coefficient of 0.127.
- Intention to use E-banking services affects decision to use E-banking services, with the coefficient of 0.516.

Table 7. Inner VIF values

	DE	INT
DE		
INT	1.000	
PA		1.629
PE		1.262
PR		1.420
PU		1.789
TR		1.256
WEB		1.611

Table 7 presents the results of the inner variance inflation factor (VIF) values for testing multicollinearity. All VIF values in Table 7 satisfy the rule of thumb, so there is no multicollinearity (Hair et al., 2013), and the model is estimated reliably and unbiased.

4.3. Discussions

The findings reveal that all the constructs used in this study have positive relationships. Specifically, *perceived usefulness* has a positive impact on the intention to customer's intention to use E-banking services in Ho Chi Minh City (due to the positive regression coefficient). These findings are consistent with those of Anouze & Alamro (2019); Arora & Kaur (2018); Nikou & Economides (2017); Venkatesh & Davis (2000). These authors claim that perceived usefulness is expressed through consumers' perceptions of the benefits they receive when transacting online, such as saving time and costs. Another benefit of online shopping is that consumers have the flexibility to conduct transactions from the comfort of their homes or anywhere they prefer. During lockdown periods, customers can opt for E-banking services to fulfill their needs. For example, they can conveniently use ATM cards and credit/debit cards to make online payments while shopping.

Perceived ease of use has a positive impact on customer's intention to use E-banking services in Ho Chi Minh City (because of the positive regression coefficient). These findings are consistent with those of AKTER et al. (2021); Anouze & Alamro (2019); Nikou & Economides (2017); Yaseen & El Qirem (2018).

Perceived risks or risks perception has a positive impact on customer's intention to use E-banking services in Ho Chi Minh City. These findings are consistent with Kassim & Ramayah (2015); Marafon et al. (2018); Mer & Viridi (2021); Y. Zhang et al. (2018). This factor is associated with the risks incurred when consumers engage in online transactions, such as damaged products/commodities, delayed delivery, expired vouchers, financial losses, or a waste of time getting wrong products.

Promotion and advertising positively impacted on customer's intention to use E-banking services in Ho Chi Minh City. The positive and significant relationship concludes that consumers appreciate and react only to shopping online, which is associated directly with certain benefits, such as discounts, offers, and other benefits they can receive. These findings are consistent with De Vries et al. (2017); Khaleeli

(2020); Yazdanparast et al. (2016). Thus, the findings of this research draw the attention of companies, which need to focus mainly on sales promotion and advertising when they want their products and services to reach consumers via online tools. Customers can then enjoy discounted items, and other promotions. During COVID-19, SMEs took advantage of discount interest rates on loans, to reduce their payment pressure in principal and interest.

Trust had a positive impact on customer's intention to use E-banking services in Ho Chi Minh City. These findings are consistent with AKTER et al. (2021); Banu et al. (2019); Bashir & Madhavaiah (2014). Trust plays an essential role in e-commerce transactions because it reflects consumers' confidence and experience in shopping for quality goods and services. After consumers have purchased goods/commodities and are satisfied with them, they are willing to believe or trust certain online suppliers (commercial banks). As a result, consumer behavior and attitudes towards E-banking services are significantly enhanced.

Website quality has a positive impact on customer's intention to use E-banking services in Ho Chi Minh City. These findings are consistent with Adnan (2014); Ashraf et al. (2019); C.-C. Chiu & Yang (2016); Ganguly et al. (2010). Website quality is another factor that is directly related to consumers' online shopping behavior in Ho Chi Minh City. Therefore, suppliers must maintain the quality of their websites at high standards to attract consumers. Specifically, websites need to be focused on decoration, convenient functions, and engaging content combined with responsiveness, accessibility, and mobile friendliness so that consumers can access the website anytime and anywhere they want.

Additionally, customer's intention to use E-banking services have a positive impact on customer's decision to use E-banking services in Ho Chi Minh City. These findings were demonstrated by Cardona et al. (2015); Hardin & Twengström (2022). Online shopping behavior is affected by macroeconomic factors such as political, economic, social, legal, and environmental aspects. This correlation supports the hypothesis that macroeconomic factors correlate positively with consumers' online shopping behavior. In particular, during the COVID-19 pandemic, consumers who are loyal only to traditional shopping have considered shopping online to avoid risking their health. As shown in practical terms, in 2020, because of the COVID-19 outbreak, consumers switched to online shopping, which led to supermarkets being the segment that received the highest web traffic growth, accounting for 35% of the growth rate increase compared to 2019.

Finally, the intention to shop online has a positive impact on online shopping behavior in Ho Chi Minh City. The findings are confirmed by Ahmad et al. (2020), who concludes that intention is the best antecedent and predictor of actual decision.

5. Conclusion

Using both qualitative and quantitative research methods, this study examines how perceived usefulness, perceived ease of use, perceived risks, promotion and advertising, trust, and website quality affect customer's decision to use E-banking services in Ho Chi Minh City, which is mediated by customer's intention to use E-banking services. Trust and perceived risks are two factors that have less effect on a customer's intention to use E-banking services. Thus, commercial banks, particularly those owned by the state, should enhance their utilization of marketing tools like Search Engine Marketing, Video Marketing, and Mobile Marketing to boost brand recognition. This is crucial because a positive bank image and strong brand perception can provide a competitive edge, ultimately driving greater interest among customers in selecting their financial products and services. As a result, banks can foster trust and a sense of security when customers engage in transactions with them. Additionally, bank managers must prioritize improving and enhancing their website and smartphone applications to enhance the popularity of their brand.

Although specific results have been obtained, some limitations still exist. First, the sample was limited to Ho Chi Minh City; therefore, the results were only achieved with a certain level of confidence.

Therefore, it is possible for future studies to widen the scope of surveys across the country instead of just within Ho Chi Minh City. Second, other models (such as TAM2, TAM3) can be considered as the framework to determine main factors that influence on intention to use.

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