



## PAYMENT INTERMEDIARY – KEY DETERMINANT INFLUENCING ONLINE PAYMENT INTENTION ON E-COMMERCE PLATFORMS IN VIETNAM

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### ABSTRACT

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E-commerce is a new, rising phenomenon in Southeast Asian countries, and online payment methods are becoming increasingly popular on e-commerce platforms. Despite increasing investments in e-commerce platforms' online payment systems, Vietnamese consumers are still doubtful about this innovative payment alternative. This research applied the Technology Acceptance Model (TAM) to analyze the variables affecting customers' intention to make online payments on e-commerce platforms in Vietnam, a potential Southeast Asian market. In addition, the research group expanded on the primary study by adding the variables of Subjective Norms, Trust, and Risk to validate the findings of the original work in the new context. A new factor suitable for Vietnamese conditions, Payment Intermediary, was included by the authors to better explain the consumers' attitudes and intentions toward online payments. The surveys were carried out using two methods of basic random sampling: an offline approach at offices and schools, and an online approach using social media. 521 questionnaires were collected, and 448 were considered valid and met the requirements that were initially set. SPSS 26 was used to assess the consistency and validity of all variables and test the hypotheses using a regression model. The hypothesis model was verified. The results showed that the correlation between independent and dependent variables, namely Attitude toward Use and Intention to Use, is very clear. In consumers' use of e-commerce platforms, Payment Intermediary plays a crucial role in developing their online payment attitudes and intentions.

**Contribution/Originality:** This study is one of few to shed light on the key determinants affecting online payment intentions on e-commerce platforms in Vietnam. Despite numerous previous papers relating to the topic, the matter had not yet been investigated in the Vietnamese market. Also, this study added three additional variables to the original TAM model and a new factor, Payment Intermediary, which denotes the role of information security and overcoming transaction risks. The results of the study show that Payment Intermediary has a great impact on consumers' attitudes towards online payments, thereby driving their intention to use.

## 1. INTRODUCTION

In 1990, the emergence of e-commerce created a novel method of conducting business for consumers and the business world. One of the innovative aspects of e-commerce is online payment. To meet people's demand to transact in bigger volumes, with greater efficiency, and across international borders, payment procedures have evolved significantly over time. The online payment sector has expanded to offer more effective payment options and to open up the possibility for online trade (Deloitte, 2013).

This study investigates the use of online payment in the context of e-commerce platforms, one of the current consumer trends in the Southeast Asian market. In terms of economic growth, online payments have made it easier to reap the benefits of increased demand and market efficiency through greater choice, customer convenience, and international trade on e-commerce platforms (Arwa, 2020; Fatonah, Yulandari, & Wibowo, 2018). Online payment also increases productivity, as both buyers and sellers can save time (Arwa, 2020). From a social perspective, applying for online payment on e-commerce platforms is crucial considering the need for contactless interaction during the COVID-19 pandemic. With social distancing becoming the norm, the shift towards a cashless society is accelerating. Since the early 2000s, it has been predicted that global epidemics, such as the Covid-19 pandemic, would occur. Therefore, cashless payment is and will continue to be a vital component of the e-commerce industry.

Yet despite its growth and importance, users of e-commerce platforms are still reluctant to adopt online payment methods, especially in emerging Southeast Asian countries like Vietnam. According to the chief executive officer of Shopee, Vietnam has the highest cash payment rate of the seven countries Shopee operates in. The director of the Payment Department of the States Bank also stated that cash transactions account for most of the transactions on e-commerce websites, which is one of the major issues impeding the growth of these platforms in Vietnam. The reason for this phenomenon is that the use of cash for transactions seems to be embedded in consumers' behavior in ASEAN (Association of Southeast Asian Nations) member countries, based on consumers' belief that cash payment is the safest and most convenient method. Meanwhile, they believe that online payment involves multiple steps to complete a transaction while suffering from risks related to product quality and the payment procedure (Ankur, Byron, Boo, Yustina, & Klongpaw, 2019; Rahim, Shariff, Ngah, & Jalil, 2022).

Based on this rationale and background, it is critical to promote online payment on e-commerce platforms among those in questioning areas and to suggest managerial implications for such platforms to promote cashless payment methods. This can be done by investigating factors affecting the online payment experience of the customers that can mitigate the aforementioned risks. Although studies relating to online payment are valuable, there has been a lack of research on e-commerce platforms in Southeast Asian countries; therefore, little information on this growing market is available. At the same time, the study of payment intermediaries has been overlooked by scholars in this field.

Therefore, our work examines the variables influencing Vietnamese customers' e-commerce platform online payment intention on one of the most promising and increasingly developed e-commerce markets in Southeast Asia. Moreover, the researchers included the new variable payment intermediary, which helps ensure financial security and product quality while improving customers' payment experience, to study the main driver of e-commerce platform users' payment intentions.

## 2. LITERATURE REVIEW

### 2.1. Technology Acceptance Model (TAM)

The Theory of Reasoned Action (TRA) model, developed by Fishbein and Ajzen (1975), was the theoretical paradigm that Davis, Bagozzi, and Warshaw (1989) originally used to describe the Technology Acceptance Model. Ardalia (2020) considered these two models to be the primary explanations for the motivations underlying behavioral intention – in the case of this study, e-payment. To be specific, the TAM model analyzes and explains how an individual's acceptance of information technology affects their behavior. This model assumes that Perceived

Usefulness and Perceived Ease of Use have a crucial impact on an individual's attitude as well as their behavioral intention to use a technology (Schepers & Wetzels, 2007). TAM is among the popular theories used to model technological intentions, according to Mahfouz (2009) and Chen, Gillenson, and Sherrell (2002). Since TAM is widely used in studies of e-commerce, online purchasing, and e-banking, for comparison purposes, we adopted the TAM terminology. The TAM structure includes Perceived Ease of Use and Perceived Usefulness. These two factors contribute to the determination of Attitude toward Use, Intention to Use, and Actual Usage (Davis et al., 1989).

TAM is a prominent theory that has informed the approach of many studies on customer acceptance in terms of intention and behavior (Mahfouz, 2009). Several researchers have incorporated TAM constructs into their studies and improved upon them. Specifically, the TAM model has been employed by Keswani, Singh, Singh, and Sharma (2016) to study acceptance behavior in online purchases. In their study, the authors showed the drastic impact of perceived ease of use on perceived usefulness, as well as the influence of both variables on online shopping attitudes. They concluded that customer attitude affects online shopping intention, which means that the more positive the attitude, the greater the intention to shop online. The same was proved by Anders (2015) in a study on online shopping acceptance behavior.

Moreover, a study on the factors influencing the use of e-payment systems (Ardelia, 2020), which we used to identify key determinants affecting the adoption of online payment, utilized the TAM model to determine the factors that could affect the intent to utilize the e-payment system for online purchasing. The study made an important contribution by creating awareness among facility providers and promoting e-payment system use.

## 2.2. Online Payment Attitude and Intention

In recent years, the world has seen widespread adoption of the cashless transaction mechanism known as online payment. With the increase in the necessity of cashless transactions, digital payment adoption has accelerated (To & Trinh, 2021) at the expense of cheque and cash payments (Patwardhan, 2017). Specifically, online payment is an internet transaction through which users can make payments and transfer and send money without cash. Also, online payment is an intermediary service that helps consumers purchase products and services from websites and connects to e-commerce payment gateways. Moreover, online payment connects banks, buyers, and sellers with the ultimate aim of allowing a seller to immediately collect money once an online transaction is accomplished. Correspondingly, a user may do online business and pay suppliers by inputting the relevant contact information (phone, email, or Quick Response (QR) code) (Singh, Srivastava, & Sinha, 2017). Although many studies have investigated the online payment behavior of consumers when making purchases, the process of conducting online payment remains a complex issue in which both internal and external factors influence consumers' buying decisions (Hoa, Hien, & Lien, 2019).

The attitude towards online payment refers to the quantity of positive and negative feelings a consumer has when paying online. Safari, Bisimwa, and Armel (2022) defined the attitude toward online payment as the user's perception of the benefit of using the system. This implies that customers with a higher level of perceived usefulness of internet banking will have a favorable attitude toward online banking. In the online environment, it is expected that attitudes facilitate transactions and reduce barriers to the adoption of the terms of trade (Pavlou, 2002a). Similarly, Francisco (Liébana-Cabanillas, Ramos De Luna, & Montoro-Ríos, 2017) claimed that the attitude of the consumer alters the way they approach new technology. On the other hand, the essence of an attitude to technology adoption can be determined on a personal level (Lai, 2017). When a person becomes aware of the need for technology, they adopt it to fulfill their needs (Ramos-de-Luna, Montoro-Ríos, & Liébana-Cabanillas, 2016).

Intention toward online payment refers to the probability that a customer will participate in online payment. Intention, in the case of purpose to repurchase or intent to prescribe, may be an indicator of a specific action (Ha et al., 2021). In a study on the variables influencing the intention of consumers toward the online payment system,

Hoa et al. (2019) showed that the role of online payment in daily life is becoming much clearer, particularly its time and money-saving characteristics. This has also been proven in other studies (Hausman & Siekpe, 2009). According to Hoa et al. (2019), out of four elements, crowd influencing had the greatest influence on Vietnamese customers' intention to make payments online. In contrast, Elvira (2018) argued that perceived usefulness and perceived ease of use increase the intention to use online payments. Furthermore, Karimov and Farhod (2011) noted that cultural variables that influence the adoption of new technologies include education level and technological experience.

Previous research has studied the main factors affecting customer acceptance of online payment systems (Anas, Zakariya, & Raed, 2021; Liébana-Cabanillas et al., 2017; Nguyen & Nguyen, 2020), although relatively little research has delved deep into the specific factors affecting consumers' acceptance of online payments on e-commerce platforms (Arwa, 2020; Wenjing, 2017). Especially in Southeast Asia, the e-commerce industry has accelerated since 2016, with increased investment from global leaders, adoption of advanced technology, and good e-commerce business know-how. The strong growth of online payment systems and leading e-commerce companies in Southeast Asia continues to play an important role in the expansion of digitization and online commerce in the region. Although Southeast Asia is an area with rapid Gross Domestic Product (GDP) growth and significant e-commerce development, the number of studies on e-commerce platforms and the variables influencing the intention to pay online is limited. Therefore, this research has combined variables pertinent to the context of the e-commerce market with the characteristics of consumers in Vietnam and in-depth research to assess their impact on customers' adoption of online payments. In addition, we proposed a new factor, payment intermediary, which helps determine whether users of e-commerce platforms choose to make online payments.

### 2.3. Payment Intermediary

The continuous technological development of Industrial Revolution 4.0 has had a significant impact on consumer behavior. According to the statistics of a functional agency, although the system of online payment has been developed and its services expanded, cash payment is still quite popular. Currently, Vietnamese consumers seem to favor the use of cash for transactions. They tend to be reluctant to approach new types of technology and fear changing their traditional habit of paying with cash. However, in light of the integration process and as other countries have adopted and popularized online payment, Vietnamese consumers need to change their perceptions and habits to catch up with the times so as not to be left behind.

By studying Vietnam's typical cultural, historical, and social features, as well as in-depth interviews with some customers, our research group proposed a new factor, payment intermediary. An intermediary is "a third entity providing intermediary services among two parties." Concerning financial intermediaries, Gary and Andrew (2002) noted, "A financial intermediary is a firm, perhaps a special kind of firm, but a firm. Organization of economic activity within a firm occurs when that organizational form dominates trade in a market."

In this research, the term "payment intermediary" combines the concepts of an intermediary and an intermediary transaction. Specifically, a payment intermediary is a third party responsible for collecting or holding the customer's money and transferring that money to the supplier after the delivery of goods has taken place in accordance with the correct process. Nowadays, online payment when buying products online is usually instantaneous, meaning that the money is deducted directly from the customer's balance regardless of whether they have received the item or not. This causes concern for customers; the majority of interviewees said that they were afraid that the quality of the product would not be as expected. Therefore, in addition to keeping customers' money and transferring it to suppliers, a payment intermediary works in the interests of customers when emphasizing product quality assurance policies, ensuring the confidentiality of information, and overcoming transaction risks. Specifically, the payment intermediary is responsible for protecting the buyer's financial data and having policies to support, monitor, and settle online payment transactions between buyer and supplier.

### 3. HYPOTHESIS DEVELOPMENT AND RESEARCH MODEL

#### 3.1. Hypothesis Development

Perceived Usefulness (PU): Davis et al. (1989) stated that perceived usefulness is the level at which a specific system will improve productivity. This stems from the definition of “useful” meaning “helping to achieve something.” In the organizational context, employees often perform more effectively if they are offered higher salaries, promotions, incentives, or other benefits (Pfeffer, 1982; Vroom, 1964). According to a study by Liébana-Cabanillas et al. (2017), perceived usefulness is the subjective probability that technology will make it easier for consumers to accomplish their goals. In theory, companies providing the option of e-payment for online shopping should make the system more convenient, promoting its use and creating awareness among customers (Ardelia, 2020). Another study found that perceived usefulness has a dramatic and favorable impact on consumers' attitudes toward shopping at online retailers (Delafrooz, Laily, & Ali, 2011). For these reasons, the following hypothesis was formulated:

*H1: Perceived Usefulness has a positive impact on Attitude toward Use.*

Perceived Ease of Use (PE): Perceived ease of use, according to Davis et al. (1989), is defined as the degree to which one finds a particular system to be effortless. Likewise, Nyoman, Dewi, and Gama (2021) defined it as a scale to quantify the extent to which one believes that using technology will be easy and not overwhelming. This variable is an integral component of TAM in forecasting customer attitudes and has been studied extensively. Safari et al. (2022) claimed that positive attitudes toward internet banking stem from users' perspective of it being easy to use. Also, other studies have shown the significant impact of perceived ease of use on perceived usefulness and attitude towards use (Davis et al., 1989; Mathieson, 1991; Taylor & Todd, 1995; Venkatesh & Davis, 2000), confirming that the variable is a good determinant of information system success.

*H2: Perceived Ease of Use has a positive impact on Attitude toward Use.*

Subjective Norm (SN): According to Ajzen and Fishbein (1977), a subjective norm is the perceived social pressure that encourages one to engage in a specific behavior. In the TRA model, it is a specific determinant of behavioral purpose and is similar to social and environmental factors. This direct determinant is based on the idea that the behavioral choices of a person may change over time because they are unaware of the consequences and effects. Nguyen and Nguyen (2020) claimed that consumers tend to make online payments if their closest relations do so. Specifically, their behavioral references could come from social networks or individual peers with whom it is commonplace to consult opinions and exchange experiences (Arvidsson, 2014). Because e-payment is carried out in the context of the Internet, it is possible to directly convey the credibility of a system to other users or customers via online communities, creating another social effect in the system. Specifically, Ardelia (2020) pointed out that customers were increasingly inclined to utilize e-payment for their purchases due to peer pressure and the impact of other online groups. Hence, this rationale leads to the third hypothesis in this research:

*H3: Users' Subjective Norm has a positive impact on Attitude toward Use.*

Trust (Tr): Tsiakis, George, and George (2005) defined perceived trust in the e-payment system as the consumers' belief that the e-payment transactions process will live up to their expectations. Trust is a set of beliefs held by a customer regarding the actions of the supplier, as well as the supplier's potential actions in the future (Ganesan, 1994). Previous studies have shown that trust is the factor with the most significant impact on attitude (Suleman, Ali, Nusraningrum, & Ali, 2019). Several studies have shown a correlation between trust and ease of use, besides the fact that trust is necessary for shopping as a customer takes risks in transactions, which influences attitudes (Indarsin & Ali, 2017). According to the findings summarized here, trust can affect attitudes and shopping decisions made on e-commerce sites. Hence, the following hypothesis is proposed:

*H4: Users' Trust has a positive impact on Attitude toward Use.*

Risk (Ri): Risk is how consumers perceive uncertainty and the potential unfavorable effects of purchasing a good or service. Risk influences customers' attitudes when purchasing via the internet, and it must be taken into

account since there is a danger of online store fraud and other occurrences that harm consumers online (Hsu, Chuang, & Hsu, 2014). According to Nguyen and Nguyen (2020), the security of credit card information, hackers, and unreliable suppliers are major concerns for consumers. In online group buying situations, where group transactions include a relatively high level of risk and uncertainty, customers' opinions of online shopping are less favorable. Similarly, several studies have pointed out the negative correlation between perceived risk and attitude toward e-commerce (Ardelia, 2020; Hsu & Chiu, 2004; Zimmer, Arsal, Al-Marzouq, & Grover, 2010). The following hypothesis is, therefore, proposed:

*H5: Users' Risk has a negative impact on Attitude toward Use.*

Payment Intermediary (PI): Through in-depth interviews with some Vietnamese customers, our research group came to realize that many customers tend to shop more or make more online payments through e-commerce platforms if a third party guarantees their purchase and receipt of goods. Also, they believe such a body will facilitate the process of returning defective products through e-commerce platforms. They think that if a third party is available, they will feel more confident about the purchasing and payment processes as their interests can be protected and they are less exposed to product quality-related risks. For this reason, we decided to test the influence of an additional variable: payment intermediary. Netsale Asia, a drop shipping platform, argues that online stores and e-commerce platforms need a simple and effective return policy to impress customers and can turn the return policy into a differentiator for their brand. Therefore, the below hypothesis is formulated:

*H6: Payment Intermediary has a positive impact on Attitude toward Use.*

Attitude towards Use (AT) and Intention to Use (IN): Ajzen and Fishbein (1977) defined attitude as one's positive or negative evaluation of a specific behavior. Intention is a motivating variable, according to Ajzen (1991), and intentions are directly impacted by attitudes, subjective norms, and perceived behavioral control. It encourages a person to be willing to execute acts. Consumers' attitudes influence their intentions (Fishbein & Ajzen, 1975). The choice to accept a particular action is thus influenced by attitude, a definition that is derived from TRA theory. Moreover, Ajzen (1991) stated that the more favorable the attitude, the stronger the person's intention to perform the behavior. Therefore, the relationship between the independent variables and attitude toward use can be considered similar to the intention to use. Specifically, a consumer's attitude regarding online payment methods influences his or her intention to use the payment method (Ariffin & Lim, 2020; Elvira, 2018). As a result, the current research proposed the following hypothesis:

*H7: Users' Attitude towards Use has a positive impact on their Intention to Use.*

### 3.2. Research Model

In the initial study, the research model was created in accordance with the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975) and the Technology Acceptance Model (TAM) (Davis et al., 1989). The final conceptual framework that was developed included seven independent variables: Perceived Usefulness, Perceived Ease of Use, Perceived Risk, Trust, Quality of Internet Connection, Subjective Norm, and Demographics (Gender). The seven above hypotheses were used to analyze the effects on the dependent variable Intention to Use.

Five variables in this article are similar to those in the original study. However, a new unique variable representing Vietnamese customers' behavior – Payment Intermediary – was added to our research model. Along with the defined factors, six independent variables were created to analyze their impact on two dependent factors: Attitude toward Use and Intention to Use.

### 3.3. Research Methodology

This research is a conceptual replication of Ardelia (2020) work, in which the research group modified the wording of the original survey items in addition to adding a recently discovered factor to measure the customers' intention to make an online payment when transacting on e-commerce platforms in Vietnam. The research group

adopted a quantitative approach to the survey, which took the form of an in-depth interview questionnaire with customers who made purchases on e-commerce sites, to determine whether the variables used in the original study were acceptable in the Vietnamese context. All interviewees were required to have a basic knowledge of e-commerce shopping and online payment. During the interview, the research group also gathered information on other factors and risks associated with online payment that may deter consumers from choosing this payment method on e-commerce platforms. Based on the information collected and the current state of e-commerce in Vietnam, the research group finalized the questionnaire used to gather data for the study. The questionnaire in [Ardelia \(2020\)](#) consisted of 3 sections with a mixture of open and close-ended questions. However, in this study, the questionnaire was divided into only 2 sections, the demographic information of the interviewees and the measurement items of the exogenous and endogenous variables. The questionnaire used a five-point Likert scale, ranging from “Strongly Disagree = 1” to “Strongly Agree = 5,” which is similar to [Ardelia \(2020\)](#).

The questionnaire from the original study targeted 200 respondents who were randomly selected from around the Klang Valley area to be representative of the population, and the result was that 198 were collected and 2 were uncollectible. Nevertheless, the current research was carried out in Hanoi, the capital of Vietnam, as well as other Northern provinces. The surveys were carried out in two ways, using basic random sampling: an offline approach at offices and schools, and an online approach using social media. The research group handed out 521 questionnaires, of which 448 were considered valid and in line with the requirements that were originally set. The 448 respondents included a total of 205 men and 243 women, or 45.8% and 54.2%, respectively. All respondents were over the age of 15, and they varied in terms of family size and household income. Regarding the quantitative analysis, the research group utilized SPSS (Statistical Package for the Social Sciences) 26 to assess the consistency and validity of all variables, test the hypotheses using a regression model, and evaluate the results based on certain standards. All details of the applied quantitative method are mentioned in the results section below.

## 4. ANALYSIS RESULTS

### 4.1. Measure Reliability

Reliability analysis was conducted for all the variables in the questionnaire. The goal was to measure the relationship of each independent variable – PU (Perceived Usefulness), PE (Perceived Ease of Use), SN (Subjective Norm), Tr (Trust), Ri (Risk), and PI (Payment Intermediary) – with the dependent variable AT (Attitude toward Use), as well as the relationship between AT and IN (Intention to Use).

**Table 1.** Reliability analysis results.

Factor Code	Construct	Number of observed items		Cronbach's Alpha	Corrected Item – Total Correlation minimum
		Before	After		
<b>Independent variables</b>					
PU	Perceived Usefulness	5	3	0.604	0.321
PE	Perceived Ease of Use	6	6	0.860	0.561
SN	Subjective Norm	5	5	0.858	0.650
Tr	Trust	5	5	0.874	0.678
Ri	Risk	5	5	0.851	0.629
PI	Payment Intermediary	5	5	0.898	0.714
<b>Dependent variables</b>					
AT	Attitude toward Use	5	5	0.886	0.649
IN	Intention to Use	5	5	0.845	0.553

Cronbach's alpha was used to measure the reliability of each factor and to evaluate the relationship of each set of items as a group. When a factor's Cronbach's alpha value is equal to or greater than 0.6 and each item's Corrected Item – Total Correlation is greater than 0.3, the factor is considered reliable. The Cronbach's alpha values for all the factors ranged from 0.604 to 0.898, as shown in [Table 1](#); therefore, they met the requirement. Overall, the results indicate a reliable consistency among the items in each factor. However, the research group excluded two

items, namely PU1 and PU2 in the factor Perceived Usefulness, due to their low Corrected Item – Total Correlation values.

#### 4.2. Measure Validity

After evaluating the reliability of each factor, the authors carried out a validity test using exploratory factor analysis (EFA), choosing the principal components with varimax rotation method. The research group ran two separate EFA analyses, one for six potential factors expected to be independent factors and the other for two factors expected to be dependent factors in the regression model. The items of each factor were retained if their loading factors were less than 0.5. The first EFA analysis excluded no items as the loading factors of all items were satisfactory according to this criterion. With inspection result KMO (Kaiser-Meyer-Olkin) = 0.890 and Bartlett's results having Sig. = 0.000, the number of factors extracted was 6, with a total variance extracted of 64.376. The second EFA analysis revealed a clear separation between the two factors with no items being excluded. In this analysis, the inspection result KMO was 0.916, and Bartlett's results had Sig. = 0.000, 2 factors were extracted, and the variance totaled 65.957. As a result of the two analyses, the authors identified 6 main groups of factors that would serve as independent factors and 2 groups of dependent factors.

#### 4.3. Hypothesis Testing

Pearson's correlation analysis was conducted and revealed that the relationship between the two dependent variables – AT (Attitude toward Use) and IN (Intention to Use) – and the 6 independent factors (PU (Perceived Usefulness), PE (Perceived Ease of Use), SN (Subjective Norm), Tr (Trust), Ri (Risk), and PI (Payment Intermediary)) was linear (Sig. < 0.05). This regression model was then applied to examine the effects of the 6 independent variables on the dependent variable, Attitude toward Use, see Table 2. The VIF coefficient value of all independent factors was below 2, meaning there was no collinearity. Also, the value of adjusted R<sup>2</sup> was 0.442, indicating that the linear regression model was created using the data set at 44.2%. A second regression model was then run to examine the linear correlation between the 2 factors of Attitude and Intention. The outcome demonstrated that Attitude had an impact on Intention (Sig. < 0.05). In addition, the coefficient of R<sup>2</sup> adjusted was 0.487, meaning that 48.7% of the data set was used to create the linear regression model.

Figure 1 shows that 6 factors affected the attitude toward using online payment on the e-commerce platform. The level of impact (normalized  $\beta$  value) of the factors ranked in descending order is (1) Payment Intermediary (PI) ( $\beta = 0.338$ ), (2) Subjective Norm (SN) ( $\beta = 0.286$ ), (3) Perceived Usefulness (PU) ( $\beta = 0.171$ ), (4) Perceived Ease of Use (PE) ( $\beta = 0.167$ ), (5) Risk (Ri) ( $\beta = -0.079$ ), and (6) Trust (Tr) ( $\beta = 0.072$ ). Based on the normalized  $\beta$  values, the independent variables, except for the variable Risk, had a positive impact on Attitude toward Use. In particular, Payment Intermediary, the newly added variable, had the strongest effect on Attitude toward Use.

Table 2. The regression results.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-0.212	0.276		-0.769	0.443		
	Subjective Norm (SN)	0.209	0.048	0.171	4.326	0.000	0.798	1.254
	Perceived Ease of Use (PE)	0.225	0.059	0.167	3.815	0.000	0.651	1.536
	Subjective Norm (SN)	0.266	0.039	0.286	6.989	0.000	0.725	1.379
	Trust (Tr)	0.083	0.047	0.072	1.759	0.079	0.747	1.338
	Risk (Ri)	-0.103	0.058	-0.079	-1.790	0.074	0.636	1.573
	Payment Intermediary (PI)	0.373	0.049	0.338	7.551	0.000	0.623	1.605
<b>Dependent variable: AT – Attitude toward Use</b>								
2	(Constant)	1.351	0.128		10.857	0.000		
	Attitude toward Use (AT)	0.652	0.032	0.699	20.263	0.000	1.000	1.000
<b>Dependent variable: IN – Intention to Use</b>								

In the second model, the variable Attitude toward Use (AT) had a positive impact on Intention to Use (IN) with the coefficient  $\beta = 0.699$ . Therefore, the research group finalized two regression models to measure the effects of the independent factors on the two dependent variables, and they are as follows (with a 10% significance level):

Model 1:  $AT = 0.171(PU) + 0.167(PE) + 0.286(SN) + 0.072(Tr) - 0.079(Ri) + 0.338(PI)$

Model 2:  $IN = 0.699(AT)$ .

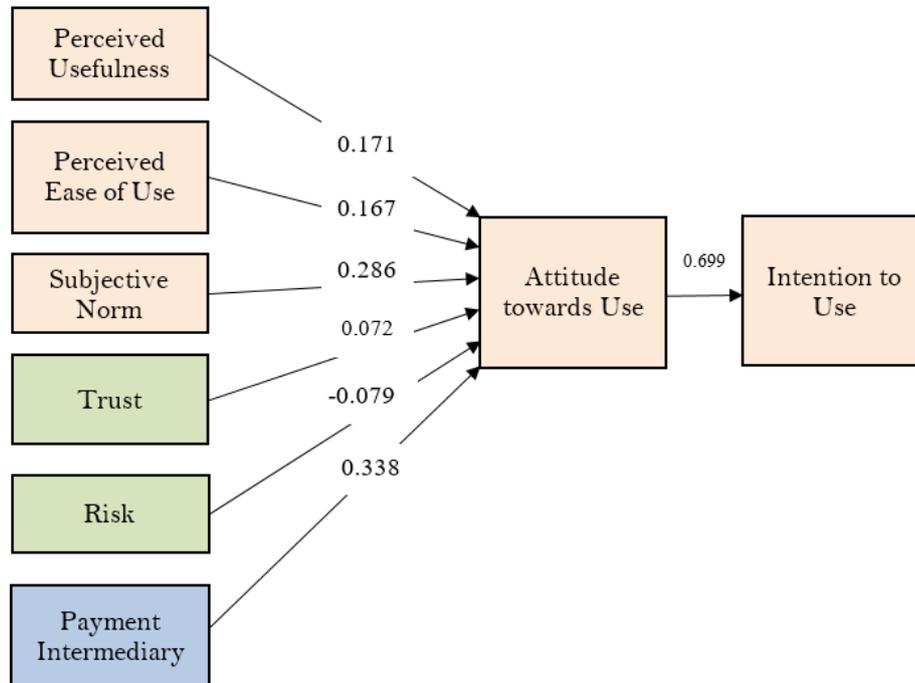


Figure 1. Model of research on variables influencing Vietnamese consumers' intention to pay online when using e-commerce platforms.

#### 4.4. Discussion

To facilitate the growth of e-commerce in Vietnam, online transactions should be carried out between the relevant parties, specifically the consumers and sellers on such platforms. The implication is that buyers should make more online payments instead of using traditional (cash) methods and more stores should accept and promote online payment methods. However, customers' decision to switch to online payment is affected by certain factors. The study aimed to clarify whether the factors identified by the research group really influence consumers' Attitudes toward Use and Intention to Use online payment methods on e-commerce platforms in Vietnam. To check customers' attitudes and intentions, the research group applied TAM by Davis et al. (1989) to structure the independent variables. The research group then evaluated the effect of the independent factors on the dependent factors based on a significance level of 10%.

(PU) Perceived Usefulness was found to have a positive and significant effect on Attitude toward Use ( $\beta = 0.171$ ,  $p = 0.000 < 0.1$ ). This finding supports the result of Liébana-Cabanillas et al. (2017) that a consumer's attitude is directly impacted by how he perceives new mobile payment technologies. This outcome is also consistent with earlier research (Elvira, 2018; Hartini, Tan, & Mohammed, 2020; Safari et al., 2022). Additionally, it is believed that Perceived Usefulness is a significant predictor of the intention to adopt electronic payments (Ardelia, 2020). It appears that consumers will certainly change their attitudes toward online payment methods when they realize that the benefits that these methods bring surpass those of traditional methods.

The results showed that (PE) Perceived Ease of Use had a significant and positive influence on consumers' attitude toward using online payment methods on e-commerce websites ( $\beta = 0.167$ ,  $p = 0.000 < 0.1$ ). The result corroborates the findings of prior research (Abu-Shamaa, Abu-Shanab, & Khasawneh, 2016; Safari et al., 2022; To &

Trinh, 2021). In particular, according to Ardelia (2020), respondents agreed they would adopt e-payment channels that had straightforward structures and content. Additionally, consumers' attitudes when shopping in online stores are strongly influenced by their perception of Ease of Use (Palvia, 2009). This implies that Perceived Ease of Use is a vital element affecting consumers' perception of technology usage or activities that involve technology. Therefore, if the processes for utilizing online payment methods are simple to follow, customers will have a more favorable attitude toward using them.

(SN) Subjective Norm was also revealed to have a significant impact on customers' attitudes ( $\beta = 0.286$ ,  $p = 0.000 < 0.1$ ). Subjective Norm (referred to as Social Norm in Ardelia (2020)) exerted a significant influence on consumers' intention to adopt e-payment methods. These results align with the findings of previous studies (Hartini et al., 2020; Liébana-Cabanillas et al., 2017; Nguyen & Nguyen, 2020). The result found in this study is also in accordance with the findings of Ajzen and Fishbein (1977); these authors stated that perceived social pressure could encourage individuals to engage in specific behaviors. This shows that reference groups or the general population often affect changes in consumers' attitudes. In fact, consumers may consult people close to them or shopping groups on the Internet about the decision of whether or not to pay online. If these reference groups have positive reviews, it is likely that consumers' attitudes toward online payment methods will improve. As a result, Social Norm is regarded as an important factor that affects Attitude toward Use.

(Tr) Trust was also found to affect attitudes toward using online payment methods ( $\beta = 0.072$ ,  $p = 0.079 < 0.1$ ). This result is consistent with the conclusions reached by Kafley and Chandrasekaran (2021) and Suleman et al. (2019). However, the result conflicts with Ardelia (2020), who found no link between Trust and e-payment adoption, even though they contended that this factor was important. Despite this, the research group agrees that consumers will consider making online payments if the methods of paying online through e-commerce sites have a reliable profile, trustworthy services, and policies ensuring safety for consumers when they carry out transactions. Therefore, Trust has a significant impact on Attitude toward Use.

Next, the results showed that (Ri) Risk had a significant negative impact on the attitudes of customers who use online payment methods on e-commerce platforms ( $\beta = -0.079$ ,  $p = 0.074 < 0.1$ ). Several previous studies have shown that Risk negatively influences the dependent factor, including the research conducted by Francisco, Juan, and Francisco (2014) and Anas et al. (2021), who noted that risk had a negative effect on behavioral intention, and the research of Ardelia (2020) on the adoption of e-payment channels. The explanation for this result may be that consumers feel discouraged or hesitant to use online payment if this form of payment brings a higher level of transaction-related risk. In other words, the higher the degree of risk carried by online payment transactions, the more likely consumers are to have a negative attitude toward using it. It may also be that different demographic groups have distinctive views about risk, especially young shoppers who often display a low level of concern about online transaction-related risks. Overall, however, Risk has a negative impact on Attitude toward Use.

The novel variable of Payment Intermediary was introduced by the research team based on the specific needs of consumers purchasing through e-commerce platforms in Vietnam. Payment Intermediary had a significant positive effect on Attitude toward Use ( $\beta = 0.338$ ,  $p = 0.000 < 0.1$ ). Moreover, this variable was the strongest of all the independent factors affecting Attitude. To explain this unexpected result more clearly, it is necessary to look at the current state of online shopping in Vietnam. In particular, due to the development of technology, the way consumers shop is changing rapidly. Instead of being physically present in brick-and-mortar stores, customers with a stable Internet connection and basic knowledge of such electronic devices as computers, smartphones, and tablets, can now go shopping online on e-commerce platforms. In fact, they can easily search, select, compare products, and make online payments with just a few mouse clicks or finger touches. In other words, online purchases are becoming the new way to shop in the technological age. Many companies, realizing this new consumption trend and the huge benefits of selling online, have started to transform their businesses by placing their merchandise on e-commerce platforms and implementing online payment methods.

However, online transactions, especially online payments on e-commerce sites, are still not widely accepted and used by Vietnamese consumers. One reason for this phenomenon may be that some people, particularly the elderly, have difficulty learning how to make online payments. They cannot acquire technology-based knowledge as quickly as younger consumers, which, in turn, leads to an unwillingness to use online payment methods. In addition, most interviewees, when asked why they preferred cash-on-delivery payment to online payment, said that they did not completely trust e-commerce websites to ensure safe payment transactions. In fact, they pointed out the potential risks they faced if they carried out online transactions, namely finance-related risks, privacy-related risks, product quality-related risks, and even moral hazards caused by sellers. Furthermore, according to the study by the research group, currently few e-commerce websites in Vietnam can identify and fully protect consumers against these risks. Therefore, consumers are more willing to switch to online payment if e-commerce trading platforms take action to mitigate the aforementioned risks. What can be inferred from the result is that consumers want an intermediary that can safeguard their rights and lower the chances of facing risks in the process of making a purchase on an e-commerce website. They believe online payment methods would be worth considering if all e-commerce sites made use of a payment intermediary.

Finally, Attitude toward Use was found to have a significant positive effect on Intention to Use online payment methods on e-commerce platforms ( $\beta = 0.699$ ,  $p = 0.000 < 0.1$ ). Numerous studies have previously examined the connection between behavioral intentions and attitudes, including studies that found that consumers' attitudes influence their intentions (Elvira, 2018; Fishbein & Ajzen, 1975) and research in which positive attitudes of customers are the strongest predictors of payment method usage intention (Khan, Belk, & Craig-Lees, 2015). The current study draws the same conclusion: consumers have a higher intention of paying online on e-commerce trading platforms if they have a positive attitude toward this payment method.

## 5. CONCLUSION

### 5.1. Summary Findings and Implications

The study's findings revealed that the TAM model enabled the research group to successfully measure and evaluate which factors affect consumers' intention to use an online payment system. The research showed that six factors affect the intention of customers to make online payments on e-commerce platforms. Notably, the novel variable of payment intermediary was included in the model, and its importance in the model was confirmed. Payment intermediary was shown to have the strongest impact on consumers' attitudes of all the studied independent variables. With the development of online payment, Vietnamese customers tend to worry that the product quality will not be as expected when using this method and that money will be deducted from their balance regardless of whether or not they receive the item. To address these concerns, a payment intermediary not only allows buyers to check the merchandise before making an online payment but also offers a refund policy to buyers if the transaction is not fulfilled. Aside from adding a novel variable suitable to social conditions in Vietnam, the research has filled a gap in the existing body of literature by studying the popular topic of online payment in the new context of a developing Southeast Asian country – Vietnam.

Overall, this research has demonstrated the considerable significance of factors that affect consumers' intention to make online payments on e-commerce platforms in Vietnam. The findings suggest the need to implement better e-commerce practices in the use of online payment systems. This will help companies compete with other online retailers and boost e-commerce business development. Below are some specific recommendations:

- (1) Universalize online payment as a general trend and keep up with developing payment methods.
- (2) Approach customers to educate them about the advantages of online payment methods through mainstream media, such as television advertising, news broadcasts, and social networks.
- (3) Develop confidentiality policies and transaction monitoring systems to limit risks for both consumers and distributors when these two groups conduct online transactions.

(4) Accept online payments systems that work as a payment intermediary or carry out certain similar functions to safeguard consumers' online transactions, for instance, by allowing customers to exchange or return products if these items do not live up to promised standards and accept payment after the customer has checked the goods.

### 5.2. Limitations and Future Research Directions

The main limitation of this study was its sample. The research team used data from one of the major economic centers of the country, Hanoi City, and included people of diverse age groups, occupations, and income levels to study their intention to use online payment methods when buying goods on e-commerce platforms. However, because we used a convenience sampling method, the research sample may not satisfy the requirements of representativeness and generality.

Future research on the topic should meet the following requirements. First and foremost, further research is required to continue to refine the scales of factors that influence Vietnamese customers' intentions to make online payments when purchasing items on e-commerce platforms. Secondly, due to the complexity of Vietnam's terrain, it is necessary for academics to expand their study by more closely examining different demographic groups. Thirdly, to ensure the representativeness and generality of the conclusions of future research, it will be necessary to select a sample using more scientific methods.

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