

The Moderating Impacts of Self-efficacy, Self-confidence and Smartphone Addiction on the Relationships among Perceived Usefulness, Perceived Risks and Perceived Costs and Intention to Use Mobile Payment Services: A Study among Consumers in Viet Nam

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ABSTRACT

This research was conducted with the aim of exploring factors affecting intention to use mobile payment services of consumers in Ho Chi Minh City, Vietnam and moderators on these relationships. The research model and eight hypotheses were developed from prior relevant research. The questionnaire was distributed to 333 Vietnamese respondents living in Ho Chi Minh City with 300 valid responses. Multiple linear regressions were used to assess the hypotheses. The result indicated that perceived usefulness was the most influential determinant, then perceived cost, perceived trust, and perceived risk; also, self-confidence played an important role in moderating the effect of perceived risk on intention to use mobile payment services. Managerial implications and directions for future research were also discussed.

Keywords: mobile payment services, moderators, usefulness, risk, trust, cost.

INTRODUCTION

In the financial information system and technology, there have been many new technical advances, interesting inventions, and improvements in business practices over the last 20 years (Liu, Kauffman, & Ma, 2015). Mobile payment is one area that is growing at an exponential rate. According to Mallat (2007), mobile payment is described as the act of sending money or funds directly to a recipient utilizing a mobile device, either with or without the engagement of an intermediary. The mobile phone is stressed like the crucial feature that sets mobile payments apart from other payment methods (Schierz, Schilke, & Wirtz, 2010).

This type of payment has had a groundbreaking influence on the society, as well as a wide-ranging impact on the whole payment ecosystem. Consumers can pay for goods and services electronically at physical locations when cash, checks, or credit cards are not available using their mobile devices (Cao, Yu, Liu, Gong, & Adeel, 2018). Mobile payment can be classified into different types. Zhou (2013) suggested that it is formed as remote payments and proximity payments. Remote payments enable people to have a connection to remote payment servers, such as online banking and online payment services, for payment purposes. Proximity payments, by contrast, enable users to use their mobile phones to make payments without the need to connect to a remote server, namely toward tickets of bus and other services (Zhou, 2013). It relates to transactions which occur when a customer is near the seller (GSMA, 2017). The transaction credentials are recorded on the cellphone and transmitted over short space utilizing scanning of barcode or radio frequency identification (RFID) technology in this type of payment (Qasim & Abu-Shanab, 2015).

Mobile payment, which is widely used in many countries, besides providing convenience to customers, it additionally makes a profit of the business and contributes to enhancing the financial service standards of a nation

as a whole (Amoroso & Magnier-Watanabe, 2012; Phonthanukitithaworn, Sellitto, & Fong, 2016; Zhou, 2013). Venkatakrishnan and Eston (2013) stated that unexpectedly in countryside places in which commercial organizations have been unable to penetrate, the mobile payment services have the capability of promoting socio-economic activity. According to a recent report by Allied Market Research (2020), by 2027, the worldwide mobile payment industry is anticipated to be worth \$12.06 trillion. Considering the importance of mobile payment and as the majority of previous research has taken place in Western and industrialized nations (Ondrus & Pigneur, 2005; Schierz et al., 2010), there is a genuine necessity for further research about customer intentions to utilize mobile payment systems in developing areas such as Vietnam. Vietnam is a very potential market for mobile payments, with smartphone users was estimated to reach 43.7 million and 55.8 million 3G and 4G subscribers in 2019 (Adsota, 2020; Nhan Dan News, 2020). As a result, mobile payment providers in Vietnam have progressively joined the market and have continuously worked to increase customer use of such payment services. They cooperate with banks, shops, telecommunication providers, and worldwide payment networks to provide services including mobile phone recharge, movie, and flight ticket purchases, as well as lending, transferring and withdrawing money.

In light of the above, the present research aims to explore the stimuli behind the intention of Vietnamese consumers to utilize mobile payment services, more especially in Ho Chi Minh City. Therefore, the research objectives are finding out antecedents of the intention of using mobile payment services, evaluating the degree of influence of each determinant on the intention of using mobile payment services as well as examining the moderating effect on the relationships between intention to use mobile payment and perceived cost, perceived risk, perceived usefulness, and providing recommendations to the Viet mobile payment services industry and to future research. To meet these research objectives, this quantitative study should provide answers to two primary questions "What are determinants of intention to use mobile payment services in Ho Chi Minh City?" and "How much does each factor influence the intention to use mobile payment services in Ho Chi Minh City?". First and foremost, the outcome of this study can aid in the resolution of the objectives of the research. Second, it would give assistance to the service providers in the mobile payment industry in allocating their limited resources better as well as implementing appropriate service strategies.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

TAM Model

Davis (1986) proposed the Technology Acceptance Model (TAM) as part of his doctoral dissertation proposal, based on the Theory of Reasoned Action and is designed for use in modeling user acceptability in particular in Information Technology and Information Systems. Later, the first Technology Acceptant Model modified version was created by Davis, Bagozzi, and Warshaw (1989). There are two determinants having an effect on attitude in this model which are perceived usefulness and perceived ease of use. Other variables, called to in the model as external variables, may have an effect on these two perceptions a person has about a system. Nevertheless, Mathieson, Peacock, and Chin (2001) stated that the predictive potential of the Technology Acceptance Model is restricted because it still has other elements that influence user behavior.

This research adapts the extension Technology Acceptance Model and the hypotheses proposed from the study of Liébana-Cabanillas et al (2020). They had conducted a research on the intent of using mobile payment services in the emerging market, specifically India. Because Vietnam is now considered a fast-growing and emerging market with strong economic growth (Shira, 2021), the intention pattern of using mobile payment services may somehow be similar to the discovery of Liébana-Cabanillas et al.'s research (2020). Therefore, this research will apply the conceptual model in their research to better understand the determinants that influence the intent of Vietnamese consumers to use mobile payment services, with some supplements and adjustments.

Based on the literature review, there is another critical factor is detected to have an influence on the intention to use mobile payment - perceived cost (Phonthanukitithaworn, Sellitto & Fong, 2015; Lu, Yang, Chau, & Cao, 2011; Ahmad & Khalid, 2017; Chong, Chan, Ooi, 2012). Additionally, this study aspires to broaden the research framework by including incremental constructs that may influence the impact of perceived usefulness, perceived risk, and perceived cost on the intent of using mobile payment, with the objective of accelerating the capability

to predict intention and cultivating a thorough understanding in decisions of consumers regarding using mobile payment services. In light of the previous findings (Jaradat & Faqih, 2014; Shaw & Kesharwani, 2019; Marafon, Basso, Espartel, Barcellos & Rech, 2018), self-efficacy, self-confidence, and smartphone addiction are found to moderate the relationship respectively between perceived usefulness, perceived risk, perceived cost and intention to use. These factors will be adopted in the proposed model to be investigated. The focus of the study is on exploring the effect of moderating variables, for that reason, the relationship of innovativeness, stress, and perceived ease of use with perceived usefulness will be removed from the conceptual model of the study of Liébana-Cabanillas et al. (2020).

Intention to Use Mobile Payment

Ajzen (1991) defines intention as a motivating component of action, referring to a person's purposeful attempt to undertake a certain activity. Particularly, Fishbein and Ajzen (1975) defined intention to use as the degree to which one intends to do a certain act. Mobile payment refers to the capability of a person in initiating, authorizing, and completing a commercial transaction involving the transfer of money or funds through a mobile network or using wireless communication technologies to the receiver via a mobile device (Slade, Williams, & Dwivedi, 2014). It is one of the most important applications needed for effective mobile e-commerce.

Perceived Satisfaction

According to various authors (Lee & Chung, 2009; Lin, 2010; Wang & Li, 2012; Zhou, 2013), satisfaction is a measure of the technical success of the application system as shown in its overall performance; this gives back a summary of the emotive feelings of users that may appear in the time of interacting with the provider of service as stated by Zhou (2013). Perceived satisfaction, rather, may be an indication of potential usage intent, suggesting the people's proclivity (Cao et al., 2018). Earlier investigations showed that consumers who are pleased with their experience would have a greater proclivity to utilize (Hung, Hwang, & Hsieh, 2007; Zhou, 2013), thus, on condition that the mobile payment systems' performance matches users' standards, they will rate the experience positively and have a tendency to use them later. Hence, this study proposes the below hypothesis:

H1: Perceived satisfaction positively affects the intention to use mobile payment services.

Perceived Usefulness

According to Davis (1989), perceived usefulness refers to the extent to which a person feels that implementing a certain system would improve work performance. Perceived usefulness in online environments reflects that someone might find using a given technology helpful in reaching a specific goal (Bhattacharjee & Sanford, 2006; Kim, Choi, & Choi, 2015; Natarajan, Balasubramanian, & Kasilingam, 2017; Phong, Khoi, & Nhat-Hanh Le, 2018). It is the extent that consumers expect online purchases to provide beneficial information for them, allows them to compare deals more easily, and makes a faster purchase (Vijayasathiy, 2004). According to Tsu Wei, Marthandan, Yee-Loong Chong, Ooi, and Arumugam (2009), perceived usefulness is the most critical factor in anticipating the intent of consumers in Malaysia to utilize mobile commerce, and this element of a new technological advancement has a major impact in determining behavioral intention to embrace it. Besides, prior research on mobile payment systems have shown that the greater the level of perceived usefulness of a person when she chooses using a payment system, the higher her intent to employ that system (Kesharwani & Bisht, 2012; Ooi & Tan, 2016). Hence, the following hypothesis is proposed in this study:

H2: Perceived usefulness positively affects the intention to use mobile payment services.

Perceived Risk

Perceived risk is stated as the personal anticipation about a detriment or loss when employing high-risk technologies (Pham & Ho, 2015). Tan and Leby Lau (2016) described perceived risk as the level of an individual of expected uncertainty associated with the outcome of using a particular technology. Different dimensions of

risk when using mobile payment were determined by Mallat (2007). Some participants in her research described the hazards of the possibility that certain people with bad intentions could use their phones to make transactions in the event that their device is misplaced. Others saw hazards of missing transaction records and documents because of difficulties in tracking mobile payments, whereas others were suspicious of the likelihood of payment transaction errors. Some participants also regarded compromising privacy as a possible risk, and they were hesitant to share their information with mobile payment service providers. Furthermore, in earlier studies, risk perception has been denoted as a barrier to mobile payment acceptance (Mallat, 2007; Pham & Ho, 2015). Accordingly, perceived risk was considered as an aspect to the study of factors that have the potential to discourage people from using mobile payment services. Hence, the following hypothesis is proposed in this study:

H3: Perceived risk negatively affects the intention to use mobile payment services.

Perceived Trust

Trust, from a cognitive point of view, is the belief that the word or promise of a party can be relied on, and that the party will follow through with it (Dwyer, Schurr, & Oh, 1987). Zhou (2013) defines perceived trust as a readiness to be faithful to a service provider on the basis of positive expectations about their upcoming actions. Trust of consumers in banks, service providers as well as payment services, in general, has a positive impact on their intentions to utilize mobile services and successive actions (Arvidsson, 2014; Linck, Pousttchi, & Wiedemann, 2006). People have the tendency to use mobile payment services offered by reliable providers, according to many qualitative research (Mallat, Rossi, & Tuunainen, 2004). This idea is also supported in some quantitative research, showing that the intention of consumers is influenced by the dependability of mobile payment services and the dependability of the providers (Mallat, Rossi, Tuunainen, & Öörni, 2008; Zhou, 2013). Hence, the following hypothesis is proposed in this study:

H4: Perceived trust positively affects the intention to use mobile payment services.

Perceived Cost

Switching from wired Internet payment systems to omnipresent mobile payment includes additional monetary and non-monetary costs. Monetary expenses are composed of the access costs, the actual costs of mobile equipment, and transaction fees (Wu & Wang, 2005). These are expressed as the perception of costs by users. According to Mallat (2007), mobile payment cost has had a significant unfavorable effect on consumers' readiness to use. Her research found that mobile payments, which surcharge transaction fees to consumers, have little chance of success unless they can deliver outstanding benefits. In addition, Lu, Yang, Chau, & Cao (2011) found that 60% of the respondents in their study were preoccupied the expenses associated with utilizing mobile payment services. According to Chong et al. (2012), cost has a monumental and negative impact on the decisions of Malaysian consumers to utilize mobile payment services. Accordingly, the following hypothesis is formulated:

H5: Perceived cost negatively affects the intention to use mobile payment services.

Self-efficacy

Self-efficacy is described as individual appraisals of self-capabilities to implement a set of actions to perform a given task by Bandura (1986). Rather than testing the skill levels of individuals, it focuses on the appraisal of individuals of their capacity to finish a work. Regarding the mobile domain, self-efficacy is characterized as the belief of an individual in his or her capacity to plan and perform actions to complete a certain task with the usage of the mobile device (Compeau & Higgins, 1995). A number of mobile-based adoption research have been conducted, in which self-efficacy has been examined to a great extent as an independent variable.

Self-efficacy, according to Bandura (1997), affects how people feel, think, encourage themselves, and take action. As a consequence, the sense of an individual of self-efficacy is likely to influence actions in the before-intended phase of adopting technology (Suls & Wallston, 2008). Self-efficacy to a small degree probably impedes the

incentive to implement technology like mobile payment. Those having high self-efficacy, by contrast, are more likely to be optimistic, self-confident, profoundly dedicated, and inspired to try their best to achieve specific goals (Bandura, 1997).

Hitherto, little emphasis has been placed on studying the moderating role of self-efficacy in mobile-based technology like mobile payment. Yang (2012), for instance, examined the moderating effect of self-efficacy on mobile shopping adoption; the findings proved the moderating effect of self-efficacy on the association of perceived enjoyment and attitudes in relation to taking up shopping on mobile. Furthermore, self-efficacy is found to having a moderating effect on the relationship between perceived usefulness and behavioral intention in the context of adopting mobile payment in a developing country by Jaradat and Faqih (2014). Their findings suggested that the higher level of self-efficacy of a person, the greater the impact of their perceived usefulness on behavior intent. In addition, Islam, Khan, Ramayah, and Hossain (2011) also reached a similar finding in the domain of adopting mobile commerce. Hence, the following hypothesis is formulated:

H6: Self-efficacy moderates the relationship between perceived usefulness and the intention to use mobile payment services.

Self-confidence

Bearden, Hardesty, & Rose (2001) stated that self-confidence refers to how confident and capable a person feels about her choices and actions. For Bearden et al. (2001), the capability of individuals to process information reflects their level of self-confidence. The more information they gather, the more confident they will be in the transaction and acquisition. Bearden et al. (2001) stated that when confronted complicated decisions relating to large amounts of information, self-confident customers can act more efficiently. Considering the actions taken by displeased customers to an analysis, Fernandes and Santos (2008) discovered that buyers having self-confidence have the tendency to lodge a complaint about poor call besides faulty merchandises.

According to Mitchell (1999), self-confidence can influence the decision of a customer, principally under risk perception. An improvement in self-confidence can be associated with a reduction in perceived risk and in the influences of that perception on later actions (Mitchell, 1999). From this evidence, individuals having greater self-confidence level may mitigate the impacts of perceived risk, hence resulting in a weaker association of perceived risk and intention to use mobile payment in comparison with those having lower one. Hence, the below hypothesis is formulated:

H7: Self-confidence moderates the relationship between perceived risk and the intention to use mobile payment services.

Smartphone Addiction

According to Tonioni et al. (2012), addiction to smartphones is based on psychometrical concepts like addiction to computers, the internet, and technology. Being addicted to technology is a type of addictive behavior that is characterized as a behavioral addiction regarding human-machine interplay (Griffiths and Renwick, 2003). With a rise in smartphone use, the research addresses smartphone addiction as a moderator. Indeed, Shaw and Kesharwani (2019) stated that individuals with a high level of smartphone addiction had a less negative influence on the relationship between perceived cost and behavioral intention than those with a low degree of smartphone addiction; individuals with a high degree of addiction are already using smartphone apps that meet their fundamental financial needs.

The reasoning is that a smartphone addict would have already incurred the preliminary costs required for an Internet-based financial transaction, and he or she would incur no additional expenses when conducting mobile payments. Consequently, the following hypothesis is proposed:

H8: Smartphone addiction moderates the relationship between perceived cost and the intention to use mobile payment services.

Based on the above review, a research model is constructed as follows

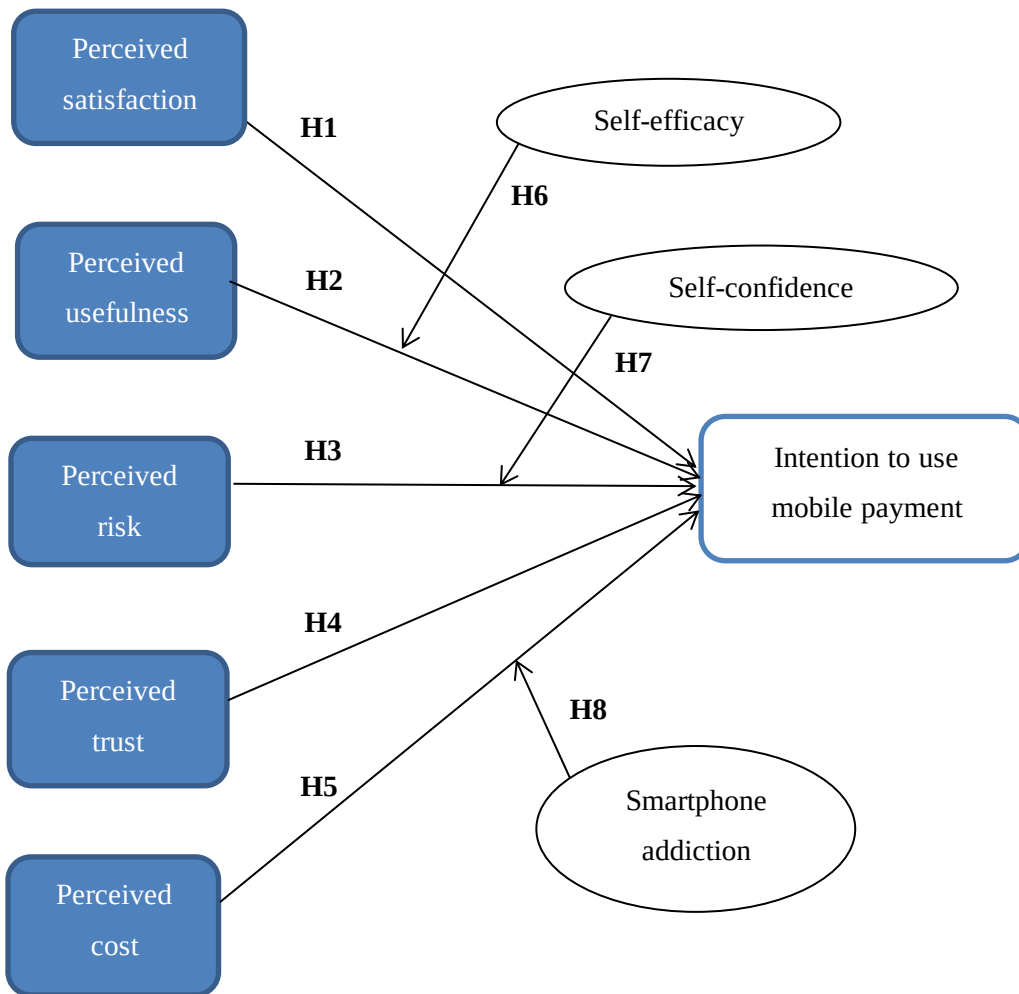


Figure 1. Proposed Research Framework (Adapted from Liébana-Cabanillas et al., 2020)

RESEARCH METHODOLOGY

Population and Sample

This study employed the quantitative method to elaborate the data through the usage of statistical techniques. The sample approaches used include convenient sampling and snowball sampling. Data were gathered from the primary source for this research. For distribution to respondents, the questionnaire was provided in an online format due to time restrictions and geographical reach. Respondents received the online questionnaire through email or social network sites like Facebook and Zalo (a popular social network in Viet Nam). Regarding the sample size, with the aim to achieve a good outcome, a sufficient sample size should be around 300 (Comfrey and Lee, 1992). Accordingly, the questionnaire was distributed to 333 Vietnamese consumers living in Ho Chi Minh City having mobile devices such as smartphones or tablets and having experience in using mobile payment services, and 300 valid responses were collected.

Measures

All measurement items are adapted and modified after an exhaustive review of the literature including Priya, Gandhi and Shaikh (2018), Schierz et al. (2010), Kapoor, Dwivedi and Williams (2015), Rana, Dwivedi, Williams and Weerakkody (2015), Lee (2009), Featherman and Pavlou (2003), Madan and Yadav (2016), Shaw (2014), Luarn and Lin (2005), Wei, Marthandan, Chong, Ooi and Arumugam (2009), Venkatesh and Bala (2008), Lumpkin and Hunt (1989), Tonioni et al. (2012).

The survey was composed of 35 questions representing 9 variables. All questions will be graded using the five-point Likert scale (ranging from 1–totally disagree to 5–totally agree) (Likert, 1932). After data collection is complete, demographic analysis is undertaken sequentially. Additionally, it is critical to conduct multiple testing stages to verify the measurement scale’s validity and reliability. This process entails doing a Reliability Test, doing an Exploratory Factor Analysis (EFA), and doing a Correlation Analysis. In the end, by way of the assistance from SPSS (Statistical Package for the Social Science) software, Regression Analysis is the primary statistical approach employed to evaluate the suggested hypothesis.

DATA ANALYSIS AND FINDINGS

Demographic questions are included in the questionnaire to ascertain the background characteristics of customers exposed to mobile payment services. These questions are classified according to gender, age, job, and income/allowance for each month. Specifically, female respondents account for 70% of the total. The group of respondents aged 19 to 25 years old makes up the majority, accounting for 86% of all respondents. Students make up the majority of responders (81%), while officers, retailers/housewives, and others make up the remainder of the percentages. Additionally, 47% of respondents have a monthly income/allowance of under 3 million VND, and the second highest income level ranges from 3 to less than 7 million VND accounting for 35% of the total.

The reliability study indicates that the internal consistency of all five independent variables, one dependent variable, and three moderating variables is satisfactory.

Regarding Exploratory Factor Analysis, the outcomes for independent variables are favorable with KMO value is 0.868 (> 0.6), sig Barlett's Test equals $0.000 < 0.05$, Eigenvalues above 1 and Total Variance Explained is 66.763%. However, its Rotated Component Matrix showed that instead of belonging to a separate group, the group items of factor perceived satisfaction comprising PS2, PS3, and PS1 become items of factor perceived usefulness. After consideration, it is not suitable to form perceived usefulness and perceived satisfaction items into one group because of the difference in the perception and the measurement items. As a result, to keep exactly 4 factors, the researchers decide to delete the items that belong to other factors; specifically, the group items of perceived satisfaction including PS1, PS2, and PS3 because most of their factor loadings are lower than that of the items of perceived usefulness, and the number of items of perceived usefulness outweighs those of perceived satisfaction.

After three rounds of factor analysis to eliminate PS2, PS3, and PS1 respectively, the results are adequate with the final KMO index is 0.827 which is a good value, sig Barlett's Test equals $0.000 < 0.05$, Eigenvalues are higher than 1 and Total Variance Extracted is 69.183%. There are four independent variables retained in the model which are perceived usefulness, perceived risk, perceived trust, perceived cost. Regarding the dependent variable, the outcomes are acceptable with the value of KMO is $0.729 > 0.6$, sig Barlett's Test is $0.000 < 0.05$, Eigenvalues are above 1 and Total Variance Explained is 76.031%.

Regarding the moderating variables, the results are adequate with the KMO index is 0.829 indicating a good figure, sig Barlett's Test equals $0.000 < 0.05$, Eigenvalues are above 1 and Total Variance Extracted is 65.975%. However, its Rotated Component Matrix results showed that instead of belonging to the group self-efficacy, item SE1 belongs to the group of factor self-confidence with a factor loading of just 0.5. After consideration, it is not suitable to put item SE1 to group items of self-confidence (SC) because of the difference in the perception and the measurement items. So in order to keep exactly 3 factors, the researchers decide to delete the items that belong to other factors which is SE1.

After one round of factor analysis to eliminate SE1, the results are adequate with the final KMO index is 0.823 which indicates a good figure, sig Barlett's Test is 0.000 lower than 0.05, Eigenvalues are greater than 1 and Total Variance Extracted is 68.721%. Aside from the removal of item SE1 of factor self-efficacy, there are 3 moderating variables maintained in the model including smartphone addiction, self-confidence and self-efficacy.

Regarding the correlation analysis to evaluate the relationship between the dependent variable (intention to use mobile payment) and independent variables (perceived risk, perceived trust, perceived usefulness, and perceived cost), the result indicates that all factors have sig. values of 0.000, which is lower than 0.01. Thus, there is

sufficient evidence to suggest that each independent variable has the correlation with the dependent variable. Additionally, the index of Pearson Correlation coefficients runs from -0.622 to 0.542 for these variables, showing that the degree of the correlations is modest.

Multiple linear regression is then used to assess the proposed hypotheses. To begin, this analysis is undertaken on the primary model, which includes independent variables (perceived trust, perceived risk, perceived cost, perceived usefulness) and dependent variable (intention to use mobile payment). The R-Squared value is 0.675 according to the findings. This shows that the remaining independent variables can nearly demonstrate 67.5% variance of the dependent variable. Simultaneously, the ANOVA table indicates that the research model is significant with a sig value equals $0.000 < 0.05$. When the sig values of the independent variables are taken into account in the Coefficients table, it becomes apparent that all values are smaller than 0.05, indicating that the four independent variables (perceived risk, perceived usefulness, perceived cost, and perceived trust) do have an effect on the dependent variable (intention to use mobile payment). Additionally, the Variance Inflation Factor (VIF) for all factors is lower than 2, suggesting that multicollinearity is not a concern. Finally, the linear equation takes the following form:

$$ITU = 2.513 + 0.391 \cdot PU - 0.081 \cdot PR + 0.169 \cdot PT - 0.360 \cdot PC$$

Where:

- ITU = Intention to use mobile payment
- PU = Perceived usefulness
- PR = Perceived risk
- PT = Perceived trust
- PC = Perceived cost

In conclusion, apart from the removal of hypothesis H1 because factor perceived satisfaction has been deleted after factor analysis, the hypotheses proposed for the primary model including H2, H3, H4 and H5 are supported.

The moderation test

Derived from the research contribution originating from Hayes (2017), this research performs moderated multiple regression using an SPSS plugin named "Andrew Hayes' Process macro". It is worth noting that W represents the moderator, whereas X represents the independent variable and Y represent the dependent variable correspondingly. Furthermore, "int_1" represents the interaction effect.

Regarding the moderation analysis of self-efficacy, the interaction effect is non-significant statistically with a p-value of 0.0781. Additionally, the LLCI and ULCI values vary between -0.0082 and 0.1524 with the presence of "0" in the confidence interval, showing that moderation effect does not exist. Hence, self-efficacy does not moderate the influence of perceived usefulness on intention to use mobile payment. Consequently, hypothesis H6 is rejected.

Regarding the moderation analysis of self-confidence, the p-value of "int_1" is $0.0144 < 0.05$, indicating that the effect of the interaction is statistically significant. Additionally, the confidence interval LLCI and ULCI is between -0.1855 and -0.0207, indicating that the interaction effect is significant. As a result, self-confidence contributes significantly in moderating the influence of perceived risk on intention to use mobile payment. Consequently, hypothesis H7 is supported.

Regarding the moderating effect of smartphone addiction, the effect of interaction is statistically non-significant with a p-value of 0.8499. Additionally, the values of LLCI and ULCI vary between -0.0652 and 0.0538 with the presence of "0" in the confidence interval, showing that the effect of interaction is non-significant. Hence, smartphone addiction does not moderate the influence of perceived cost on intention to use mobile payment. Consequently, hypothesis H8 is not supported.

In conclusion, five out of eight hypotheses are supported which are H2, H3, H4, H5, and H7.

CONCLUSIONS

Based on the findings of the analysis, this study confirmed the significant effect of perceived usefulness, perceived cost, perceived trust, and perceived risk on the intention to use mobile payment services along with the moderating effect of self-confidence in the framework of this study. Particularly, the regression analysis on the primary model reveals that perceived usefulness is the most influential determinant (absolute value of $B = 0.391$). Apart from that, perceived cost also influences substantially the intention to use mobile payment services (absolute value of $B = 0.36$). Situating at the last positions, perceived trust and perceived risk are the weakest among others in having an impact on intention to use mobile payment (absolute value of B is 0.169 and 0.081 correspondingly).

Perceived usefulness and perceived trust have a positive effect while perceived risk and perceived cost have a negative effect on intention to use mobile payment services of consumers. Factor perceived satisfaction has been removed after factor analysis. Meanwhile, the study discovered that self-confidence has a moderating effect on the relationship between perceived risk and intention to use mobile payment. In particular, the more self-confidence a consumer has, the less effect perceived risk has on their intention to use mobile payment. On the contrary, the data analysis divulged that the interaction effect of self-efficacy and smartphone addiction is non-significant.

PRACTICAL IMPLICATIONS

The special intention given by the respondents towards the influence of perceived usefulness suggested that the providers of mobile payment service should concentrate on developing the function of usefulness in their mobile payment applications. Consumers tend to be inclined to utilize mobile payment services if they discover that using mobile payments useful for their daily life and work becomes easier for them after using this type of payment. Furthermore, there is a need to provide sufficient information on the relative benefits and opportunities that could be gained from using the service, as well as persuade customers that using mobile payment is better as well as more favorable than cash transactions. This should be accomplished through various types of advertisements that highlight the service's distinguishing features.

Second, the significant and negative effects of perceived cost on the intention to use mobile payment imply that this factor is important in dampening consumers' usage decisions. This negative impact implies that high costs are likely a load for consumers because they must endure the usage expense. As a result, providers of mobile payment services have better think about reasonable charges and assuring transparency. The execution of free or reduced-price payment strategies may encourage the use of this means of payment.

In the mobile payment segment, perceived trust of individuals is also quite important to the usage of mobile payment services. If everyone believes that mobile payment providers are reliable and trustworthy, they will become more inclined to use this type of payments. To increase trust, it is necessary for the providers to improve services' safeguard and reliability, minimize transactional mistakes and protect privacy of consumers.

Besides, perception of risk of consumers has an impact on their intent of using mobile payment. As a result, service providers should devise strategies to mitigate perceived risk. For example, offering refund guarantees in the event of fraud, developing security seals to ensure the protocols utilized and promising to recompense the consumer in the event of non-compliance with the agreed-upon service conditions. To deal with perceived risk associated with mobile payment, the industry is also advised to increase consumer confidence when using mobile payment services. Using celebrity endorsements is one way to accomplish this. Successful people can be used in advertising to demonstrate that mobile payment technology really works for the benefits of consumers.

LIMITATIONS AND FUTURE RESEARCH OPPORTUNITIES

As with all research, this study contains several drawbacks, however, these drawbacks could contribute to guiding future research.

Firstly, to maximize efficiency in terms of time, money, and respondent accessibility, the questionnaire was

distributed via Facebook. Facebook was an appropriate survey venue because it is the most popular social networking site, with more than half of users aged 15 to 30. However, the issue raised is that this choice resulted in the limitation that all respondents to this study have Facebook accounts. As a result, the majority of responders are students who earn/have an allowance of less than 3 million Dong each month. Otherwise stated, the study sample has been skewed in certain aspects and could not be considered as representative for consumers in Ho Chi Minh City. Accordingly, other authors may consider alternative data collection methods to obtain a more representative sample for the study, such as Gmail, offline surveys, and so on.

The second limitation is that because a self-administered questionnaire was chosen, it is impossible to determine whether each participant was completely honest in their responses to the questionnaire, or they might respond to the questions in a hasty and inconsistent manner. In light of this limitation, if time and money are less of an issue, interview sessions may be a viable option. Interviews could improve the responses' accuracy and completeness.

Thirdly, the regression analysis revealed that four independent variables (perceived usefulness, perceived trust, perceived risk, perceived cost) can explain only 67.5 percent of the total variance in the dependent variable (Intention to use mobile payment). This means that the remaining 32.5% has been clarified by elements not identified in this research. So, additional studies need to be conducted to review alternative theoretical frameworks and explore more factors to obtain a more comprehensive and reliable outcome. Also, research investigating the moderating influence of demographic variables such as income, gender, and age on the intention to utilize mobile payment services would benefit both the academic and the mobile payment service industry.

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