INTENTION OF USING E-WALLETS – AN EVIDENCE FROM HO CHI MINH CITY, VIETNAM

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Abstract. This study provides an insight view of the importance of e-wallet and enables e-wallet providers to understand thoroughly their potential customers. The results of interviewing 250 respondents living and working in Ho Chi Minh city through face-to-face and online surveys indicate that attitude towards technology positively affects the intention of using e-wallet; moreover, perceived usefulness is the most influencing factor for the attitude towards technology. Based on the findings, some recommendations enhancing the adoption of this procduct to the providers in Ho Chi Minh City, Vietnam are proposed.

Keywords: e-wallet, intention of using, attitude towards technology, perceived usefulness, Vietnam.

1. INTRODUCTION

Over recent years, the level of online transaction and e-commerce has grown significantly [1] and strongly influenced the use of mobile payment systems [2]. Particularly, electronic wallet, an application of portable mobile devices, is gradually becoming a useful tool to facilitate customers more conveniently in paying the expenses competed to the conventional methods of payment system already. Moreover, e-wallets also provide many other functions such as helping customers to receive information from sellers and compare product prices with many different retailers [3, 4]. The willingness to use mobile payment method (MPRI) in 34 countries shows that 85% of the global population [5, 6] is using these mobile payment methods, which has shown that mobile payment methods account for a significant share of the payment methods in reality [4, 5, 6]. Followed by 35% of Vietnam's population currently under the age of 35, which is the group that needs to use high-tech applications, Vietnam has become a potential and dynamic market for online and mobile payment services including e-wallet services [7].

Although e-wallets have been introduced in Vietnam since 2004 [8], many people still do not know about this utility. A finding of this study shows that only around 8.2% of people knows the outstanding advantages of e-wallet compared to 85% who have used this method in 34 countries around the world [5, 6]. In addition, e-wallets are also less studied and not well-researched in Vietnam. Those such rare researches have overlooked many important factors such as technology experience; perceived risk; attitude towards technology proven as deteminants of e-wallet using intention; especially the attitude towards technology - the indispensable factor in TRA Theory, TPB Theory which is the fundamental theory for behavioral research.

The purpose of this study is to assist potential users in better understanding the utility of this product as well as identify factors and their influences on the intention of using e-wallets in Ho Chi Minh city. In consonance with the results of the study, the authors have proposed some recommendations to increase customers using e-wallets through improving their intention to use this product.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

2.1 E-wallets

Mobile payment method is defined as a form of payment using a mobile device, such as a mobile phone or any other device capable of connecting with mobile network [2]. This payment method uses electronic money solely and does not use cash or another forms of payment such as magnetic card or direct transfering and all money transactions through electronic channels [9]. This form of payment is used to perform authorization and confirm the implementation of commercial transactions [10]. In the near future, mobile phones will be used to pay for goods and make high-level payments with regular frequencies

similar to cash, debit cards or credit cards to help consumers who are free of traditional payment methods that yet low efficiency in many situations [4]. Not only is it used to pay when shopping online, e-wallet users can also use online services, pay utility bills, transfer money to relatives, recharge phones or game cards ... [11].

This method of payment aids customers and sellers optimize an electronic payment tool for handling effectively and efficiently, especially small transactions due to the fact that it is faster, more convenient and less expensive [12]. Particularly, buyers will perform more quickly when paying for goods online, often discounted than buying goods directly from the stores; while the seller will increase the efficiency of online sales by saving time and effort in collecting and managing revenue; In addition, the bank also saves costs in governing small payment transactions, making it easy and quick to transfer and receive money unaffected by geographic barriers and social cash reductions in circulation, contributing to stabilizing inflation, developing the national economy [11].

2.2 Technology Experience –TE

User experience refers to emotions and attitudes about the use of a particular product, system or service. It includes experiences, feelings, meaningful aspects and practical values of people-computer interaction and product ownership. In addition, it includes a person's awareness of system aspects such as utility, perveived ease of use and efficiency [13].

According to Lai [14], this is a factor that shows the level of customer acceptance, intention and usage of products. In Lai's study, the experience of using technology is shown through regular using mobile devices to compose and read emails, search for information, receive notifications such as bank account problems, freight notices, etc.

2.3 Perceived of Usefulness – PU

The perception of usefulness is based on expected theory, which relates to an individual's beliefs in decision making [15]. According to Davis [16], perceived usefulness is the degree to which an individual believes that using a certain system will enhance their own work results [17], Padashetty and Kishore [18] argue that the usefulness of feeling includes saving time for payment, implementing various types of financial transactions, convenient payment, job performance's efficiency.

2.4 Perceived Ease of Use – PE

According to Davis [17], perceived ease of use is defined as the degree to which each individual believes that using a particular system without much physical and mental effort to accomplish. Lai [14], Amoroso and Wanatabe [2] argued that the perception of ease of use includes learning and understanding how to use e-wallets easily without complicated difficulties or requiring much effort when users manipulate and make financial transactions payment easier.

2.5 Perceived trust –PT

Perceived of trust as a factor that attracts many scholars' attention which plays a potential role in the adoption, approval and usage of mobile payment applications [19]. This factor occurs when suppliers perform activities that matches customer expectations [20, 21]. According to Misra and Wickamasinghe [19], Gefen and Straub [20], Pavlou and Gefen [23], Mayer et al. [22], perceived trust includes belief in the credibility of the application provider as well as the implementation of corporate social responsibility or confidence in the competency of suppliers in the field of high technology

2.6 Perveived Risk – PR

The perceived risk is defined as a subjective belief in feeling lost when wanting to pursue a result [23]. In the field of payment using high technology, Chan and Lu [24] argued that perceived risk is awareness and concessions of customers to the risk of using Mobile or online systems, therefore, this would affect decisions towards financial transactions through the mentioned payment systems above. Lai and Zainal [25] have found that the perceived risk of customers is influenced by feelings such as anxiety, concern, discomfort, uncertainty and contradiction during the online payment process.

2.7 Attitude towards Technology - ATT

Attitude is defined as a positive or negative feeling of an individual when performing a certain intended behavior [26] that involves evaluating the good or bad of an individual about performing a behavior. Thereby, this factor is considered as a general assessment to concern if an individual tends to be willing or unwilling to perform a certain behavior [27].

2.8 Intention of using e-wallets - IT

According to [28] Elbeck (2008), the intention of using or purchasing is described as customer willingness in buying products. Purchase intention can be classified as an element of customer behavior about that individual's intention for a brand or specific product [29]. Attitude is seen as a method to measure the power of an individual's intention to perform an instrumental, specific action [26] and this is also true in predicting the usage of some means of technology [17]. Followed by Ajzen [30], the intention is human action led by considering three beliefs in behavior, norms and individual control. The stronger these beliefs, the greater the intention of human action. Lai [14] measured this concept by evaluating and using technology in future as well as the satisfaction of e-wallets.

2.9 Relationships between variables

2.9.1 Technological experience (TE), perceived usefulness (PU) and perceived ease of use (PE)

Technological experience is demonstrated by regular use of mobile devices to compose and read emails, search for information, receive notifications such as bank account problems, freight announcements ... Experience in using information technology of people influences on their efficiency of utilizing technology devices [31]. It affects the processing of websites for online commercial transactions [32] and significantly promotes performance [14], which also means that interaction with technology helps customers perceive more usefulness of new technology applications compared to those who do not have technical experience. Particularly, PU is the degree to which an individual believes that using a certain system will enhance their own work performance [16]. The perception of usefulness includes saving time for payments, conducting various types of financial transactions, making payments more convenient and higher productive [17, 18].

TE not only helps customers feel the usefulness of technology but also gives assistance for customers to feel the ease of use (PE) of that technology. The greater the users' experience of using computers and the constant exposure to different types of applications strongly affects the familiarity with many other technology packages [33]. PE is concerned as the level that each individual believes in their using a particular system without much physical and mental effort to perform [16]. To be specific, users can figure and learn how to use e-wallets easily without complication or requiring much effort when making financial transactions through this product [2, 14]. As a result, the two first hypotheses are developed as follows:

H1: Technological experience positively affects the perceived usefulness of e-wallets
H2: Technological experience positively affects the perceived ease of use of e-wallets

2.9.2 Attitude towards technology (ATT), perceived usefulness (PU) and perceived ease of use (PE)

Attitude is a positive or negative feeling of an individual when performing a certain intended behavior [26]. It involves assessing individual intended behaviors and it is regarded as a general evaluation of someone's willingness or unwillingness to do something [27]. The ATT is closely linked to PU [17] because when a new service or system is introduced, customers tend to consider benefits first, verified with previous similar systems and finally reviewed the new technology [34], the choosing-behavior will be based on the usefulness of products and services [35]. Therefore, PU has been recommended for studies involving advanced technology systems [36].

Similar to PU, PE has been confirmed by many studies as one of the important factors affecting the ATT and intention to use [2, 14, 17, 18, 37, 38, 39]. When consumers begin to realize that the technology is easy to use, they will be more likely to recognize the convenience of the mobile payment method. Then, they may take a fancy to it and intend to try it [37].

Based on the above arguments, the hypotheses H3, H4 used to test the relationships between PU and ATT for e-wallet products in Ho Chi Minh City are:
H3: Perceived usefulness positively affects the attitude towards e-wallets
H4: Perceived ease of use positively affects the attitude towards e-wallets

2.9.3 Perceived trust (PT) and attitudes towards technology

The Perceived trust is defined as the belief that relates to the trustworthy characteristics of a company [40] and happens when suppliers perform appropriate activities customer expectations [20, 21]. The PT includes the belief in the reputation of the technology provider, its implementing corporate social responsibility and its capabilities in the technology field [19, 20, 21, 22].

This factor significantly affects consumer behavior and intention in uncertain environments such as e-commerce [41]. In other words, it promotes and facilitates the adoption and acceptance of e-commerce [20].

According to Ajzen [42], trust is an important factor affecting attitudes that lead to an individual intention and behavior. In terms of mobile payments, the PT will affect ATT. This has been proved through previous studies [2, 38, 43]. As a result, hypothesis H5 is developed as follows.
H5: Perceived trust positively affects the attitudes towards e- wallets.

2.9.4 The relationship between perceived risk (PR) and attitudes towards technology

Many previous studies have verified that PR is an indispensable element for IT-related studies, especially e-wallets [2, 14, 24, 44, 45, 46]. It is defined as subjective beliefs in feeling lost when people want to pursue something [23]. For payment transactions used high technology, Chan and Lu [24] argued that PR is the perception and concession of customers against the risks of using mobile or online payment systems. Therefore, this will affect decisions of financial transactions via some payment systems mentioned above. Lai and Zainal [25] found that the PR of customers is influenced by feelings such as anxiety, concern, discomfort, uncertainty and transparent contradiction throughout online payment process.

This factor is remarkable important due to customer information provided to mobile payment system suppliers is not guaranteed which may lead to bad consequences and this will drive consumers to have negative attitudes towards mobile payment services [44]. Mohammad [47] and Cheah [48] emphasized the impact of risk on online and mobile payments. At the same time, Mitchell [49] affirmed that the PR impacts directly on customers' attitudes and the technology adoption. This result was also ackknowledged by Amoroso and Wanatabe [2]. To confirm this relationship for e-wallet products in the HCM city, hypothesis H6 is proposed as follows:
H6: Perceived risk impacts negatively on attitudes towards e- wallets

2.9.5 Attitude towards technology and the intention of using e-wallets

According to Elbeck [28], the intention to buy is described as the willingness of customers to purchase products. Intention of using can be categorized as a component of customer behaviors about their intention to a particular brand or product [29] whereas attitude is concerned as a way to measure the strength of individual intention in implementing a specific behavior [26] and this is also true in predicting using intention towards some kind of technology [17]. Followed by Ajzen [30], the intention is human action led by considering three beliefs in behavior, norms and individual control. The stronger these beliefs, the greater intention of human action. Lai [14] measured this concept by the evaluating and using technology in future as well as the satisfaction of e-wallets. As a result, the tested hypothesis H7 is:
H7: Attitude towards technology positively affects the intention of using e-wallets

The research model with with seven hypotheses are presented in figure 2.1 as follows.

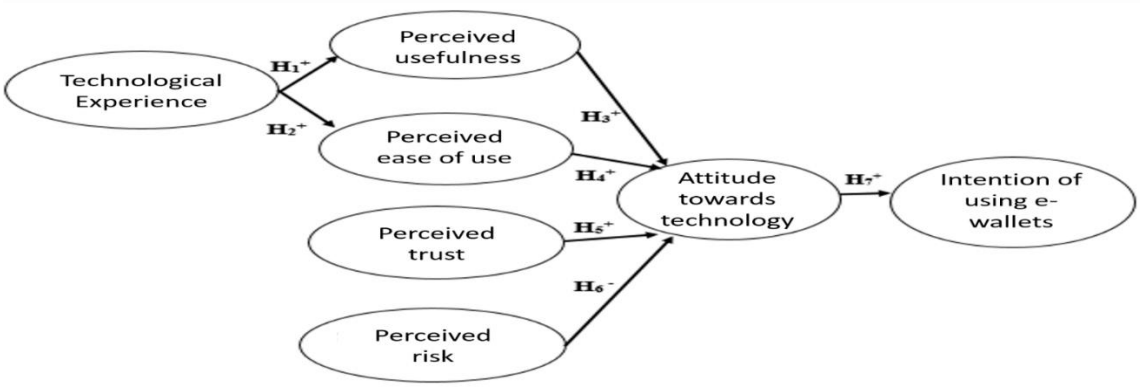

Figure 1. The proposed model

3. RESEARCH DESIGN

The research instrument consisted of seven constructs: (1) Experience in using technology, (2) Perceived usefulness, (3) Perceived ease of use, (4) Attitude toward technology, (5) Intention of using e-wallets (6) Perceived trust; and (7) Perceived risk. The 25 items of these constructs were designed based on previous studies [2, 14, 37, 38, 43, 44, 50, 51].

The interviewees have not used e-wallets or are planning to use e-wallets and are living in Ho Chi Minh City. They have different gender, marital status, education and income levels, professions, ages and technogy experience as well as average time of mobile useage.

To test the reliability and validity of the questionaire, the authors conducted a pilot study of 70 respondents and 250 interviewees were interviewed by online and face-to-face surveys. The results indicated that the seven constructs meet the expected requirements for reliability and validity.

4. RESULTS AND DISCUSSIONS

4.1 Verification of Cronbach's Alpha coefficient

The results of testing Cronbach's Alpha coefficients with Cronbach Alpha coefficients are greater than 0.6 (preliminary: 0.719 – 0.868; official: 0.796 – 0.915) and variable correlation coefficients - the total is greater than 0.3 (preliminary: 0.461 - 0.819; official: 0.313 - 0.840) has shown that the scale of the research model meets the reliability requirements [52, 53]. Hence the scale is appropriate used for subsequent EFA analysis step.

4.2 Exploratory factor analysis (EFA)

EFA is implemented four times for peer (group) factors in the research model at both the preliminary and official stages. Extraction factor used is Principal Axis Factoring (PAF) with Promax non-perpendicular rotation. The result of 4 times of the factor rotation matrix in both the preliminary and official stages has met the requirements set for KMO index, the value of Sig. Barlett's Test, Initial Eigenvalues, total extracted variance. At the official stage, the EFA results of the factors affecting attitude towards technology indicate that the observed variable PR4 is eliminated because the weight is less than 0.55 [54]. Thus, after eliminating the variable type (PR4), the factors and observed variables of each factor in the model have met the requirements of reliability and value as originally achieved. This also means that the research model proposed does not change.

4.3 Confirmatory Factor Analysis (CFA)

After eliminating the observed variable PR4 because it did not meet the conditions at the EFA matrix rotation process, the CFA analysis results for the proposed research model had Chi-square statistic value = 371,793 with 231 degrees of freedom (p = 0.000). Other measuring indicators also achieved very high values with GFI = 0.883> 0.8 [55]; TLI = 0.952 (> 0.9); CFI = 0.960 (> 0.9); RMSEA = 0.051 (0.08),

therefore this model is suitable for market data or it can be said that this scale achieves uni-directional [55, 56].

The results of the estimated coefficients show that the coefficient of Estimate between standard deviations (SE) is less than 1 with P-value (p = 0.000) less than 0.05, thus the correlation of each pair of conceptual concepts differs from 1 at 95% confidence level so the results are statistically significant. Consequently, the concept of technological experience; perceived usefulness; perceived ease of use; perceived trust; perceived risk and attitude towards technology; intention to use; which is differentiated in the critical model.

In addition, the combined reliability (0.981) and the total variance (68.2) allow the conclusion of critical models to achieve compatibility with market data. The weights (standardized) of convergent values are greater than 0.5 and statistically significant, indicating that these scales have achieved convergent values. Finally, all 6 components: (1) technological experience, perceived usefulness, (3) perceived ease of use, (4) Perceived trust, (5) perceived risk and (6) attitude towards technology, (7) the intention to use e-wallets achieve unidirectional because there is no number-correlation errors between the observed variables.

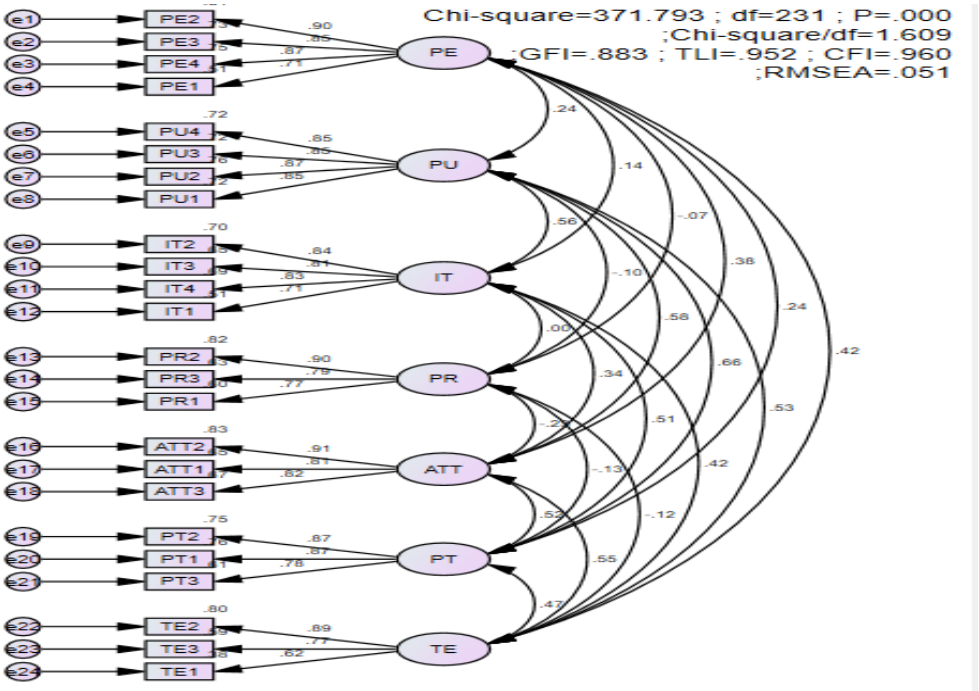

Figure 2. Results of CFA diagram - critical measurement model (standardization)

4.4 Verification of SEM structured model

Figure 3.2 shows 7 related concepts: (1) technological experience, (2) perceived usefulness, (3) perceived ease of use, (4) Perceived trust, (5) perceived risk and (6) attitude towards technology, (7) the intention to use e-wallets achieves unidirectional because it has no number-correlation errors between observed variables. SEM analysis results for the proposed research model have Chi-square statistic value = 488.237 with 242 degrees of freedom (p = 0.000). Other measuring indicators also achieved very high with GFI value = 0.851> 0.8 [55] (Hair et al, 1998); TLI = 0.920 (> 0.9); CFI = 0.930 (> 0.9); RMSEA = 0.067 (0.08), so it can be said that this model is suitable for market data or this scale achieves uni-directional. Besides, by using bootstrapping technique for 500 times, we found that the bias of the model estimation is insignificant.

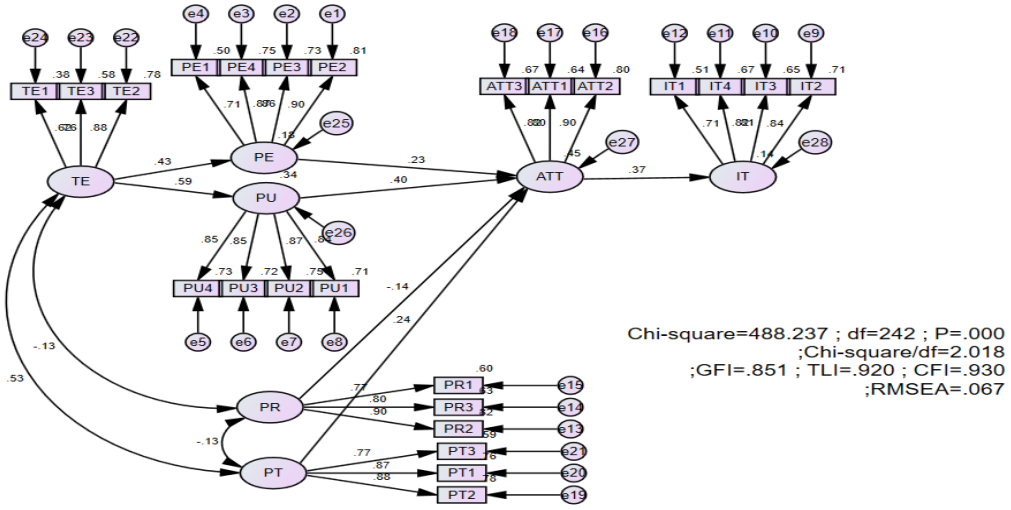

Figure 3. SEM results of the theoretical model (standardization)

Table 1. Estimated results of the parameters

			Estimate (Unstandardized)	Estimate (Standardized)	S.E.	C.R.	P	Result
PE	<---	TE	.443	.427	.075	5.905	***	$H_{1:}$ Acceptted
PU	<---	TE	.535	.585	.066	8.079	***	$H_{2:}$ Acceptted
ATT	<---	PE	.189	.233	.050	3.790	***	$H_{3:}$ Acceptted
ATT	<---	PU	.370	.402	.060	6.132	***	$H_{4:}$ Acceptted
ATT	<---	PR	-.123	-.144	.051	-2.408	.016	$H_{5:}$ Acceptted
ATT	<---	PT	.247	.242	.066	3.758	***	$H_{6:}$ Acceptted
IT	<---	ATT	.390	.374	.076	5.144	***	$H_{7:}$ Acceptted

The estimation results (unstandardized) of the main parameters in Table 3.1 show that the P-value of all factors is less than 0.05 so we can conclude that the attitude towards technology really affects the intended use. Moreover, the unstandardized weights (Estimate) of the TE factors; PU; PE; PT; ATT is all positive, suggesting that the empirical factor using TE positively affects PU and PE, while turning PT along with PU, PE positively affects ATT, PR negatively affects ATT according correctly to hypothesis H6. The hypotheses achieve unidirectional because it has no error correlation between observed variables.

As a result, SEM model still maintains 6 independent variables: technological experience; perceived usefulness; perceived ease of use; Perceived trust; perceived risk and attitude towards technology.

Furthermore, the standererized results of the main parameters in the revised study model also show that normalized weights are positive. In addition, the technological experience has the strongest impact on perceived usefulness because the absolute value of standardized weight is 0.585 greater than the impact value of the technological experience to perceived ease of use (0.427). At the same time, the perceived usefulness becomes a profound influence on attitude towards technology because the absolute value of stan

5. CONCLUSIONS AND MANAGERIAL IMPLICATIONS

5.1 Conclusions

The results of testing this research model developed on Lai's study [14] are consistent with the results of the reference studies in this study for the positive relationships between technology experience, perceived usefulness, perceived ease of use and attitude towards technology leading to individual intemtion behaviors.

In addition, the results of two factors added to Lai's model including perceived risk, perceived trust are also consistent with other studies [2, 38, 43, 44, 50, 51] by acknowledging their positive influences on attitude towards technology.

5.2 Managerial implications

The results show that the attitude towards e-wallet positively affects the intention of using this payment service and the attitude towards e-wallet is affected by perceived usefulness, perceived ease of use, perceived trust; perceived risk. Thus, in order to promote the intention to adopt e-wallets, service providers need to improve the positive attitude of potential users on products through factors affecting attitude towards e-wallets.

5.3 Suggestions to improve the positive attitude towards e-wallets

5.3.1 Perceived usefulness

Perceived usefulness is the most powerful factor affecting attitudes towards e-wallets Therefore, the advertising program and the introduction of e-wallets need to focus more on its usefulness. The content of advertisements and posters should emphasize the conveniences of e-wallets, especially in financial transactions so that customers can understand the work performance is enhanced by using e-wallets instead of using traditional payment methods. In addition, the utility of e-wallets needs to continue developing with the aim at increasing the features of e-wallet as well as the efficiency of using this service.

5.3.2 Perceived trust

Trust is confirmed to be the second strongest impact on attitudes towards e-wallets. Results show that potential customers believe in e-wallet products of reputable, capable companies in the field of mobiles, electronic digitization and social responsibility are reliable. This means that when companies in field of this product prove their prestige, capacity as well as imply good corporate social responsibility, they could have more competitive advantages that attract customers to use e-wallets. In order to gain this competitive advantage, the company needs to set up a strategy of branding, quality positioning and communicating their integrity and incorruptibility as well as the social activities the public aiming to increase and strengthen the belief of customer to e-wallet suppliers.

5.3.3 Perceived ease of use

The perceived ease of use is of the third highest importance for e-wallets. For this factor, the awareness of easiness in e-wallet understanding and learning how to use this product is lowest. This means that potential customers feel that it is not easy to understand and learn e-wallet operations. To deal with this issue, e-wallet providers need to simplify the using-functions, design friendly interface, create demos illustrating the usage for novices. Additionally, the establishment of a dedicated customer support department for guiding the installation and use of e-wallet products of enterprises is equally important.

5.3.4 Perceived risk

The perceived risk has the opposite effect to the attitude towards e-wallets. However, the survey results show that potential customers do not place this issue seriously when using this product (- 0.144). Nevertheless, two risks related to using this product that potential customers wonder are the misuse of personal information and mobile devices may be contaminated. It means service providers need to make sure that user information is completely secured. By building a high security system for each payment system using the OTP password is the prior thing that any service providers should consider first. One of the anti-virus methods should be concerned as publishing the application on CH Play under Google Supplier's censorship.

5.3.5 Suggestions to increase PU, PE through technical experience

Technical experience has been shown to have a positive impact on the perceived usefulness and the perceived ease of use of potential customers. Results indicate potential customers think that they often use mobile devices to find information so e-wallet providers need to inform them frequently and diversify useful information for customers. This enables customers to experience in using mobile devices as well as

e-wallets. Since the perceived of ease and the perceived usefulness of e-wallet of potential customers are getting to increase, their positive attitude towards e-wallet increse accordingly leading to the intention of e-wallet using.

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Received on February 1st, 2019
Accepted on March 25th, 2019