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Factors Affecting the Intention to Choose Electronic Wallet Payment in Online Shopping: An Empirical Research in Can Tho City, Vietnam

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Abstract

The present study provides a comprehensive review of the theoretical framework encompassing electronic wallets, behavioral intention, and relevant theoretical models. Building upon this theoretical foundation, the research model and hypotheses are developed, drawing upon the UTAUT2 framework. The data collection for this study was conducted in Can Tho City, Vietnam, during November 2022. The findings reveal that the intention to choose electronic wallet payment in online shopping is significantly influenced by key factors, namely Performance Expectancy, Effort Expectancy, Social Influence, Cost Consideration, and Habit. However, the study does not provide conclusive evidence to establish the impact of Facilitating Conditions and Entertainment Value on the intention to choose electronic wallet payment for online shopping within the research context of Vietnam.

Keywords: *Electronic wallet payment, online shopping, behavioral intention, vietnam.*

1. Introduction

In the context of the Fourth Industrial Revolution, characterized by the rapid development of technological platforms and business models utilizing technology, the adoption of cashless payment methods has become an inevitable trend, driving the digital transformation revolution. Consequently, a multitude of mobile services has emerged and developed, including online shopping applications, online gaming, social networks, and mobile payments (Le, 2021; Le, 2022a; Le and Chu, 2022). Aligning with global trends, Vietnam has witnessed the emergence of various innovative mobile payment forms to meet the growing consumer demands, particularly since the outbreak of the COVID-19 pandemic in 2020, which resulted in prolonged social distancing measures and an increased demand for digital financial transactions. Furthermore, the Vietnamese government has implemented several policies to promote the adoption of cashless payment methods, including electronic wallets. Since the issuance of the first experimental license for electronic wallets by the State Bank of Vietnam in 2009, there are now more than 20 active electronic wallet providers in Vietnam, with prominent names such as Momo, Zalopay, and ShopeePay. However, the utilization of electronic wallets for online shopping still faces numerous challenges. A significant portion of the population

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continues to heavily rely on cash, even when engaging in online shopping. Additionally, when conducting online transactions, users often prioritize bank transfers over electronic wallet usage due to concerns regarding the perceived usefulness, security, awareness, innovation, infrastructure support, and interactive capabilities, among other factors. Consequently, this study aims to investigate the factors influencing electronic wallet payment in online shopping, thereby contributing valuable academic insights and empirical evidence regarding the electronic wallet payment method and fostering the future development of electronic wallet adoption in Vietnam.

2. Literature Review and Research Model

2.1 Theoretical foundation

Electronic wallet

The electronic wallet, also referred to as a digital wallet or mobile wallet, has gained significant prominence in the context of the Fourth Industrial Revolution, characterized by robust technological advancements and the adoption of digital platforms (Upadhayaya, 2012). It encompasses a digital or electronic device/application integrated into mobile phones or utilized for online transactions, facilitating users' engagement in electronic commerce (Pachpande & Kamble, 2018). Similar to conventional credit or debit cards, the electronic wallet operates electronically and facilitates online transactions via computers or smartphones (Pachpande & Kamble, 2018).

The proliferation of smartphones, which have become an indispensable aspect of contemporary life, has played a pivotal role in the emergence and exponential growth of digital wallets (Uddin & Akhi, 2014; Bantwa & Padiya, 2020). As Sharma et al. (2018) argue, the electronic wallet represents the latest form of mobile commerce, empowering users to conduct transactions, engage in online shopping, place orders, and access a diverse range of services. It serves as a program or web service that enables users to securely store and manage their online purchasing information, including login details, passwords, delivery addresses, and credit card particulars.

Furthermore, the electronic wallet assumes the role of an online banking mechanism, facilitating various tasks such as direct payment for goods and services from bank accounts, fund transfers, provision of electronic checks, electronic currency, and electronic payment for orders (Uddin & Akhi, 2014). In essence, electronic wallets encompass the extensive suite of services traditionally provided by established banking institutions.

Behavioral Intention

Intention, as proposed by Ajzen (1991), is a determinant used to evaluate the feasibility of future behavior and acts as a motivational factor, driven by attitudes, subjective norms, and perceived behavioral control. It is an intermediate antecedent to behavior and exhibits strong predictive validity for usage behavior (Ajzen, 1991). Scheer (2004) characterizes intention as a psychological state encompassing determination, apprehension, and enthusiasm, driving actual behavior. Additionally, Ajzen (1988) suggests that behavioral intention represents an individual's subjective capacity to achieve a specific outcome within a defined timeframe. Usage intention, as defined by Tirtiroglu and Elbeck (2008), reflects customers' willingness to adopt a particular product, while Zhao and Othman (2010) view intention as a process through which individuals aim to accomplish a desired outcome. Furthermore, Ajzen et al. (1975) emphasize

that behavioral intention measures an individual's inclination to perform a specific behavior and denotes the affect associated with pursuing a goal-directed behavior. In the case of electronic wallet adoption, usage intention indicates an individual's inclination to adopt new technology (Latupeirissa et al., 2020). Moreover, Day (1976) asserts that measuring intention is more effective than measuring behavior in capturing the cognitive aspect of consumer behavior, considering that customers may make purchases due to constraints rather than genuine preferences. Therefore, understanding the purchasing intention of the target customer segment is crucial, particularly in technology-related domains, to design effective strategies and enhance the adoption and usage of elactronic wallet services. In conclusion, mobile payment services serve as intermediaries facilitating electronic fund transfers, and individuals' intention to use these services is influenced by attitudes, subjective norms, and perceived behavioral control. Understanding usage intention becomes vital in promoting the adoption and usage of mobile wallet services, especially in technology-related domains. Effective measurement and understanding of intention provide valuable insights for designing strategies to enhance customer engagement and drive the success of electronic wallet adoption.

Theoretical models

Currently, researches focus on the examination of the utilization and acceptance of technology, employing established models such as the Technology Acceptance Model (TAM), Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), Expectation Confirmation Model (ECM), and Unified Theory of Acceptance and Use of Technology 2 (UTAUT2).

Technology Continuance Theory (TCT): Liao et al. (2009) proposed TCT, amalgamating the TAM, ECM, and Cognitive Model of Satisfaction Decisions (COG). The primary aim of the TCT is to elucidate the factors that influence consumer intention to continue using technological applications. The TCT comprises six essential elements, namely Confirmation, Perceived Usefulness, Perceived Ease of Use, Attitude, Satisfaction, and Intention to Continue Using. Confirmation refers to the alignment between consumers' expectations and their actual experiences when utilizing a particular product or service (Tolman et al., 1932). Perceived Usefulness encapsulates users' belief in the capability of technological applications to enhance their work performance (Davis et al., 1989). Perceived Ease of Use represents the extent to which users perceive the ease of utilizing technological applications (Davis et al., 1989). Attitude reflects the positive or negative evaluations of customers based on their utilization of products or services (Davis et al., 1989). Satisfaction and confirmation share a close relationship, with satisfaction denoting the contentment experienced by consumers following their usage of a service (Liao et al., 2009).

Theory of Planned Behavior (TPB): Derived from Fishbein and Ajzen's (1975) Theory of Reasoned Action, TPB was formulated by Ajzen (1991) to address limitations of previous theories. In addition to attitude and subjective norms, Ajzen incorporated the factor of Perceived Behavioral Control, which directly influences actual behavior (Ajzen, 1991). Individuals who perceive greater control over their behavior are more likely to exhibit a positive intention to use. The ease with which perceived behavioral control can be exercised positively impacts the propensity to adopt and embrace technological applications.

The Technology Acceptance Model (TAM): Introduced by Davis (1989), underscores the influence of perceived ease of use and perceived usefulness of technology on users' attitudes toward its adoption. External variables that impinge upon individuals can heighten or diminish their perception of usefulness and ease of use. As perceived usefulness intensifies, users come to

recognize that employing electronic wallets brings forth greater benefits than initially conceived, and their utilization proves relatively facile without excessive complexity, fostering a positive attitude toward such employment. This positive attitude, in turn, engenders an enhanced intention to utilize electronic wallets.

Expectation Confirmation Model (ECM): Bhattacherjee's (2001) ECM expounds upon user behavior concerning the sustained utilization of technological products. The ECM posits that Perceived Usefulness and Confirmation constitute two factors that influence user satisfaction, which, in turn, exerts a direct impact on the user's intention to continue using the technological product.

The Unified Theory of Acceptance and Use of Technology 2 (UTAUT2): Emerged as an integration of several extant models (Venkatesh et al., 2003). UTAUT2 encompasses four core constructs: performance expectancy, effort expectancy, social influence, and facilitating conditions, in addition to four demographic factors: gender, age, experience, and voluntariness of use. However, within the realm of technology adoption, cost and price represent crucial considerations for consumers during the acquisition or utilization of technology, aspects not addressed by the UTAUT model. Furthermore, habit has demonstrated its significance as a determinant of human technology use. To address these limitations, the UTAUT2 model was devised to enhance the UTAUT model. Building upon the UTAUT foundation, three additional factors were integrated into the model: hedonic motivation, price value, and habit (Venkatesh et al., 2012).

Hence, in this study, the author employs the UTAUT2 model to examine the factors influencing users' intention to adopt electronic wallets for online shopping.

2.2 Hypothesis and research model

According to the research conducted by Venkatesh et al. (2003; 2012), the UTAUT2 model incorporates several crucial factors. These factors encompass the following dimensions: (1) Expected effectiveness, which refers to an individual's belief in the system's ability to enhance their work performance significantly. (2) Effort expectancy, which pertains to an individual's perception of the ease or difficulty associated with utilizing specific technologies or specialized systems. (3) Social influence, which relates to an individual's recognition of the opinions held by significant others, who endorse the adoption of the new system. (4) Facilitating conditions, which reflect an individual's assessment of the technical infrastructure and organizational support available to facilitate system usage. (5) Entertainment value denoting the pleasure derived from utilizing technology, specifically referred to as entertainment within this particular study. (6) Cost consideration, representing consumers' cognizance of the trade-off between the perceived benefits of applications and the monetary costs incurred in their usage, referred to as cost consideration within this study. (7) Habit, indicating the degree to which individuals tend to engage in automatic behaviors through the process of learning.

Performance Expectancy (PE): According to David (1989), performance expectancy refers to the extent to which an individual believes that using a specific system will enhance their work performance. Similarly, Karim et al. (2020) define performance expectancy as the degree to which an individual believes that utilizing a particular system will improve their work efficiency. In the present study, performance expectancy specifically relates to the value that users derive from utilizing electronic wallets. Furthermore, the research conducted by Karim et al. (2020) highlights that performance expectancy significantly influences behavioral

intention (Karim et al., 2020; David et al., 1989). A higher performance expectancy tends to attract more customers, as they possess the autonomy to select the desired products or services. Consequently, the following hypothesis, H1, is formulated:

H1: *Performance Expectancy has a positive impact on the intention to choose electronic wallet payment when shopping online.*

Effort Expectancy (EE): Based on previous investigations conducted by Yang (2005), Chang and Tung (2008), Venkatesh and Davis (2000), and Shi et al. (2008), it has been demonstrated that the perception of effort required significantly influences users' behavioral intentions. Specifically, when users perceive electronic wallets to be easily usable and highly flexible, their inclination to utilize them intensifies. Therefore, the author present the following H2 hypothesis:

H2: *Effort Expectancy has a positive impact on the intention to choose electronic wallet payment when shopping online.*

Social Influence (SI): Social influence, which encompasses the impact from family members, has been identified as a crucial factor in behavioral research (Bolton et al., 2013). The influence exerted by family members plays a significant role in motivating consumers to share their perspectives and gain a deeper understanding of their service experiences. Prior studies have consistently demonstrated the direct and positive influence of social influence on the intention to adopt technological innovations (Ajzen, 1991; Venkatesh & Davis, 2000; Riemenschneider et al., 2003; Celuch et al., 2004; Lee et al., 2003). Based on this evidence, the following hypothesis is proposed:

H3: *Social Influence has a positive impact on the intention to choose electronic wallet payment when shopping online.*

Facilitating Conditions (FC): Previous studies conducted by Ajzen (1991) and Taylor and Todd (1995) have established a direct relationship between facilitating conditions and behavioral intention. These facilitating conditions encompass various factors, such as the availability of smartphones with internet capabilities, knowledge about mobile wallet service utilization, acceptance of mobile wallet services offered by providers, and more. When individuals are presented with favorable facilitating conditions, their propensity to embrace mobile wallet services increases. Consequently, the following hypothesis is posited:

H4: *Facilitating Conditions has a positive impact on the intention to choose electronic wallet payment when shopping online.*

Entertainment Value (EV): Refers to the extent to which an electronic wallet application offers users recreational experiences, facilitates social interactions, and enables information sharing. Previous research conducted by Curran and Meuter (2007) has highlighted the role of enjoyment and interest in predicting user behavior towards new technological products. Similarly, Davis et al. (1989) concluded that users' intention to adopt and use a technology is positively influenced when they find it engaging and comfortable to use. Based on these findings, the following hypothesis is proposed:

H5: *Entertainment Value has a positive impact on the intention to choose electronic wallet payment when shopping online.*

Cost Consideration (CC): Encompasses the assessment of cost-related advantages associated with utilizing an electronic wallet as opposed to traditional cash payment methods

(Chakraborty et al., 2015). Research conducted by Oliveira and Baptista (2016) has revealed that perceived cost benefits exert a positive influence on the intention to sustain usage. Consequently, the following hypothesis is posited:

H6: *Cost Consideration has a positive impact on the intention to choose electronic wallet payment when shopping online.*

Habit (HB): Habit refers to a behavior that is repeated unconsciously, as proposed by De Guinea and Markus (2009). It has been found that habit plays a significant role in influencing both the intention and actual utilization of electronic payment methods, as indicated by the study conducted by Fika Deningtyas and Maya Ariyanti (2017). Prior research by Cheung and Limayem (2005), Kim and Malhotra (2005), De Guinea and Markus (2009), and Venkatesh et al. (2012) has also demonstrated the impact of habit on the decision to continue using such methods. Therefore, we propose the following hypothesis:

H7: *Habit has a positive impact on the intention to choose electronic wallet payment when shopping online.*

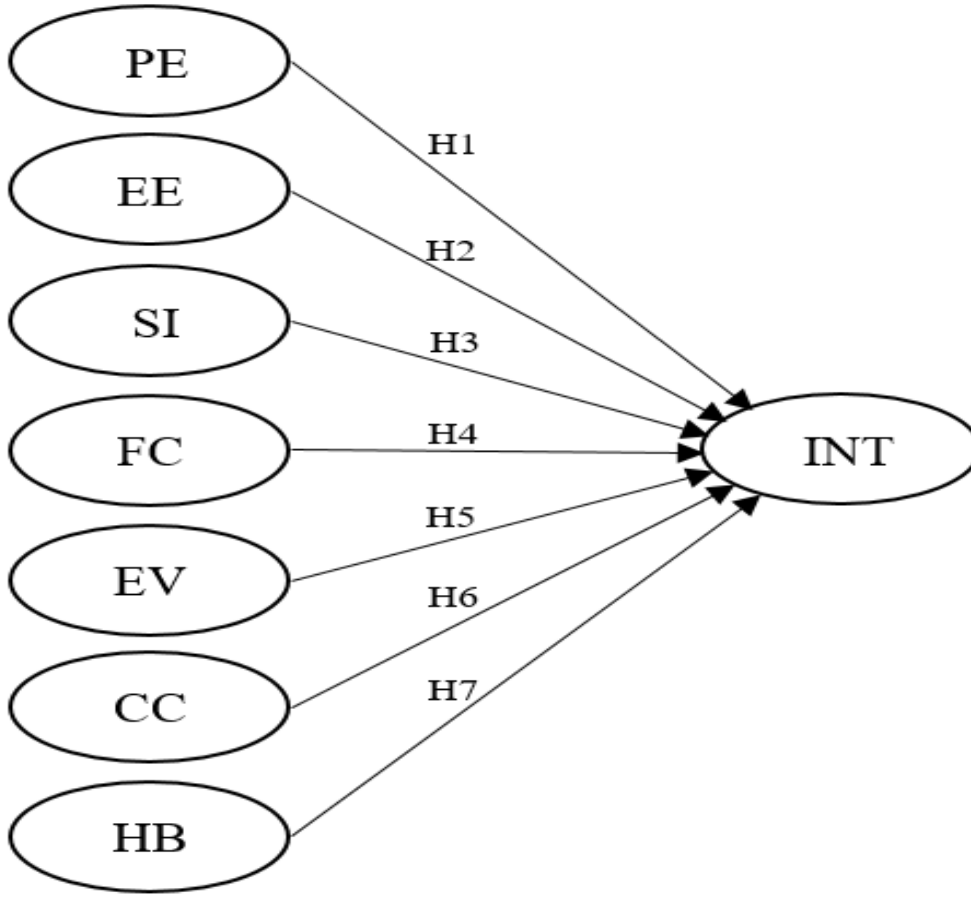

Figure 1. Research model of Factors affecting the Intention to choose

electronic wallet payment in online shopping (INT)

3. Research Methods

Regarding the sample population, this study sought the opinions of 236 individuals residing in Can Tho city. The selection criteria required participants to be at least 18 years old and have prior exposure to electronic wallets. A convenient sampling method was employed to ensure ease and practicality in participant recruitment. The survey was conducted in November 2022.

In terms of data processing, a meticulous approach was followed. Firstly, the collected data underwent thorough filtering and cleansing procedures to eliminate any inconsistencies or outliers. Subsequently, a three-step analysis was conducted to derive meaningful insights. The first step involved evaluating the reliability of the measurements, ensuring that the chosen scales were dependable and accurate in capturing the intended constructs. Secondly, an exploratory factor analysis was performed to explore the underlying dimensions, identify the key factors, determine the factor loadings associated with each factor, and assess the reliability of the measurement scales. Lastly, with the confirmation of reliable measurement scales, a linear regression analysis was executed to test the proposed research hypotheses.

4. Research Results

Results of Reliability Analysis

The criteria for determining a good measurement scale include the Cronbach's Alpha coefficient of the factors, ranging from 0.6 to 1, and the total variable correlation coefficient of each observed variable, exceeding 0.3 (Nunnally, 1987; Peterson, 1994). Based on the analysis results, all 35 observed variables, consisting of 7 independent variables and 4 observed variables representing the dependent variable, meet the required standards and are considered valid. The Cronbach's Alpha coefficients for all variables are above 0.6, with a majority exceeding 0.7, indicating the appropriateness of the measurement scale used in this study. Hence, it can be continued to be utilized for further analyses.

Table 1: Results of Reliability Analysis

Factor	Cronbach's alpha Coefficient	Minimum Total correlation coefficient
PE	0.707	0.398
EE	0.764	0.534
SI	0.717	0.610
FC	0.811	0.530
EV	0.726	0.546
CC	0.825	0.633
HB	0.728	0.380
INT	0.769	0.411

The results of exploratory factor analysis

Utilizing the Principal Components extraction method and Varimax rotation technique, the analysis yielded the following outcomes: The Kaiser-Meyer-Olkin (KMO) measure was found to be 0.842, surpassing the minimum requirement of 0.5, thus meeting the criteria for factor analysis (Nunnally, 1978). The extracted factors accounted for a total variance of 0.728, signifying that they effectively explained 72.8% of the observed data variability, indicating a substantial level of significance (Hair et al., 1998).

The PE scale consists of 6 items, with 1 item being excluded due to a factor loading below 0.5. Similarly, the EV scale comprises 4 items, with 1 item also being excluded due to a factor loading below 0.5. Consequently, the initial set of 35 items has been reduced to 33 items.

The results of the linear regression model

Based on the findings presented in Table 2, the adjusted R-squared value of 66.58% indicates that the model effectively explains 66.58% of the variance in individuals' intention to choose electronic wallet payment when shopping online. The remaining 33.42% of the variance can be attributed to external factors and random error, which are not accounted for by the model.

Furthermore, the Durbin-Watson test statistic of 1.947 falls within the acceptable range of dU (4-dU), indicating the absence of autocorrelation among the residuals in the regression model. Additionally, the variance inflation factor (VIF) values for each factor are negligible (less than 2), suggesting no significant issues of multicollinearity in the linear regression model.

Table 2: The results of the linear regression model

Factor	Standardized coefficient	P-value	VIF	Result
PE	0.242	0.017	0.113	Accepted
EE	0.170	0.035	0.136	Accepted
SI	0.128	0.000	0.194	Accepted
FC	0.273	0.184	0.127	Rejected
EV	0.375	0.279	0.105	Rejected
CC	0.369	0.000	0.112	Accepted
HB	0.236	0.013	0.184	Accepted
Adjusted R square		66.58		
P-value		0.000		
Durbin - Watson		1.947		

The results of the study reveal that the intention to choose electronic wallet payment when shopping online is significantly influenced by five factors: Performance Expectancy, Effort Expectancy, Social Influence, Cost Consideration, and Habit. The factor that has the greatest impact on the intention to choose electronic wallet payment when shopping online is Cost Consideration. Following that, in descending order of influence, are Performance Expectancy, Habit, Effort Expectancy, and finally, Social Influence.

However, the factors of Facilitating Conditions and Entertainment Value were found to be statistically insignificant and, therefore, were not considered significant contributors to the model. This finding aligns with the context of Vietnam, where as of 03/2022, the majority of adults own smartphones (approximately 73%) and the penetration rate of fiber-optic Internet in households reached 72.4%. These statistics suggest that the basic infrastructure required for widespread adoption of electronic wallets is already in place. Moreover, electronic wallet applications in Vietnam are tailored to the local audience, available in the Vietnamese language, and supported by visual aids and instructional videos across various media platforms. As a result, people are less concerned about Facilitating Conditions. Additionally, major electronic wallet applications in Vietnam, such as Momo, Zalopay, and ShopeePay, primarily focus on payment and money transfer services rather than entertainment features. Therefore, consumers are less interested and do not use electronic wallets for entertainment purposes, leading to a lack of importance placed on Entertainment Value.

5. Conclusion

In terms of scholarly contributions, this study aimed to investigate the influence of UTAUT2 model factors on the intention to choose electronic wallet payment when shopping online in the Vietnamese context, thus enhancing the theoretical understanding of behavioral intention in the realm of cashless transactions. From a practical standpoint, the research findings provided empirical evidence that can assist electronic wallet service providers in gaining insights into user priorities and formulating appropriate strategies.

Although the research has achieved certain specific results, there are certain limitations and areas for further improvement that should be acknowledged. Firstly, due to constraints in terms of time and financial resources, the study relied on convenience sampling as the data collection method, which may have resulted in a relatively limited representativeness of the research outcomes. Secondly, the analysis primarily focused on the overall impact of the entire sample, without delving into the potential variations and disparities related to demographic characteristics. Thus, future studies are encouraged to investigate the usage intention disparities based on individual user attributes. Lastly, the present research did not examine the differences in usage intention across different service providers. The sample comprised users familiar with specific electronic wallet platforms, namely Momo, ZaloPay and ShopeePay, but it is crucial to recognize that each electronic wallet may engender distinct usage intentions among users. Consequently, future research endeavors should aim to compare the usage intentions across various types of electronic wallets.

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