

FACTORS AFFECTING VIETNAMESE PEOPLE'S INTENTION TO USE E-WALLET

LAB University of Applied Sciences

Bachelor of Business Administration, Business Information Technology

2024

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Abstract

Author(s)	Publication type	Completion year
Long Phan	Thesis, UAS	2024
	Number of pages	
57		
Title of the thesis FACTORS AFFECTING VIETNAMESE PEOPLE'S INTENTION TO USE E-WALLET		
Degree, Field of Study Bachelor of Business Administration, Business Information Technology		
Name, title and organisation of the client LAB University of Applied Sciences		
Abstract <p>Currently in Vietnam, not only banks are competing in the digital market, but also various service providers such as telecommunications companies and e-commerce platforms are launching their own branded e-wallets. The author researched to investigate the factors influencing the intention to use e-wallets among Vietnamese users.</p> <p>Currently in Vietnam, not only banks compete in the digital market, but many other service providers such as telecommunications companies and e-commerce platforms are also launching their own branded e-wallets. The author has conducted a study to find out the factors affecting the intention to use e-wallets of Vietnamese users.</p> <p>The study was conducted using quantitative methods, based on the model of Nguyen & Pham, developed from the Technology Acceptance Model, a survey was conducted with a scale of 121 participants. In addition, the study also delves into seven factors affecting the intention to use e-wallets, including Perceived usefulness, Perceived Ease of Use, Social Influence, Perceived Credibility, Perceived Costs, Mobility, and Variety of services. In the end, some advice is given for the development of e-wallets in Vietnam in the future.</p> <p>From the research results, it can be seen that the e-wallet market is growing and Vietnamese people are gradually switching from cash to online transactions.</p>		
Keywords E-wallet, behavioural intention, mobile wallet, digital wallet, Vietnam, TAM.		

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1 Introduction

1.1 Research Background

Historically, people began trading by exchanging goods of equal value (Beattie 2019). Until currency was born to become a common value carrier for all goods and considered a means of trade. Currency evolved from coins to paper money, and by the 20th century, currency could be represented electronically by credit and debit accounts regulated by banks and states (Mendoza 2018). To this day, everyone can pay and transact completely online with their phone using e-commerce platforms and direct payment services.

In the modern digital landscape, the growth of e-payments highlights the important role of the Internet as a transformative trade channel, opening up enormous but largely untapped potential. Traditionally, consumers have viewed the Internet primarily as a source of information, rather than a platform for transactions. However, this perception has changed dramatically as consumers have rapidly embraced the Internet as their preferred medium for shopping and financial transactions. The growing consumer demand for mobile payment solutions has fueled the urgent need for innovative payment methods that enhance the practicality and ease of transactions. The evolution in consumer behavior and expectations highlights the profound impact the Internet has had on the financial landscape, paving the way for further advancements and disruptions in the years to come (Ondrus & Pigneur 2006, 247-249).

In recent years, Vietnam has become one of the countries that has caught up with the development of e-wallets, more than half of the population uses phones to transact and pay bills instead of using physical currency. (Duong 2020.)

Starting from 2020, when the Covid-19 pandemic broke out, the needs and shopping behavior of Vietnamese people have completely changed, people tend to stay at home and make online transactions, making the form of Payment via e-wallets has become more popular than ever. These e-wallet applications not only help users conduct financial transactions conveniently but also help them save time and money. Currently, in Vietnam, according to statistics, there are more than 40 e-wallets, an increase of 800% compared to the development stage 6 years ago (only 5 e-wallets) to meet the increasing needs of the market. Furthermore, the Vietnamese government has introduced many policies to promote the development of cashless payment. This further confirms that the use of e-wallets in Vietnam will continue to increase in the future. (Tue Nguyen 2023.)

E-wallets not only provide free incentives and services to customers, more conveniently and faster than cash, it also ensures the security and information of both sellers and buyers. This causes the application's consumer base to increase dramatically and become more widespread. (MoldStud 2024.)

Cash on delivery used to be the most popular payment method in Vietnam, but since the pandemic began, this trend has gradually decreased. Instead, electronic payment methods are becoming more popular, with 70% of users using online banking and 59% using e-wallets. E-wallets have the potential to grow and could become the most popular payment method for online purchases.

The frequency of using e-wallets in Vietnam is quite high, with 35% of users using it 3-5 times per week and 30% using it daily. This is also shown by the fact that 61% of customers use at least two e-wallets. However, is the increased use of e-wallets just a result of social distancing? Although only 6% of users intend to use e-wallets in the future, 37% affirm that they will continue to use them. (Tue Nguyen 2023.)

The author chose this topic to find and explain, in addition to the impact of Covid-19, what are the new influencing factors on Vietnamese people that cause the trend of using e-wallets domestically and abroad to increase.

1.2 Objectives and Research Questions

Currently, there have been researches on prominent technology trends such as e-commerce platforms, mobile payments, and online banking, but e-wallets have not been studied much. The goal of this research is to learn about the actual experience of e-wallet users in Vietnam in general and provinces across the country in particular. From the data obtained through research, the author will conclude and give some advice to further improve service quality as well as customer experience for e-wallets in Vietnam.

Some target questions to collect for research purposes are as follows:

The main research question:

- What are the factors affecting e-wallet usage behavior in Vietnam?

The sub-questions:

- Are Vietnamese people gradually accepting e-wallets?
- How to improve and develop further to increase experience and motivate customers to use e-wallets in Vietnam?

1.3 Research Methodology

To answer research problems, quantitative research is used. The basic data was acquired via Google Forms. This thesis's respondents are online Vietnamese people who can learn and use technological innovations through online platforms such as Facebook and Threads.

1.4 Research Limitations

The research will be utilized to examine the present condition and determinants that impact customers' inclination to utilize mobile wallets. This knowledge will be crucial for stakeholders operating within the mobile wallet sector and the broader e-service industry. However, there will continue to be some limitations to the research. The results obtained from the research collection scale being limited may not be universally applicable to the entire population of Vietnam. Furthermore, the research utilizes the research model proposed by Nguyen and Pham, which illustrates the impact of various factors on the intention to utilize mobile wallets. Nevertheless, this model fails to account for the correlation between behavioral intention and actual usage, as well as negative and positive impact factors. Consequently, modifications will be made to this model in order to accommodate the forthcoming research. Finally, the research focuses solely on the rationales and justifications for individuals to utilize e-wallets and does not delve into the reasons why individuals do not or have never done so.

1.5 Research Structure

In the first Chapter, the research foundations will be outlined, including the background and reasons for the author to choose this topic for research. In addition, the research objectives, research questions and limitations in this research are also mentioned. In addition, there is also the research and data collection method of this thesis.

Chapter 2 delves into the realm of e-wallets, exploring their many roles. From demystifying definitions to dissecting their profound impact on Vietnamese people, this chapter will also explore the landscape of e-wallets during the COVID-19 pandemic, shedding light on important developments that have shaped the trajectory of e-wallets, showing their resilience and adaptability in times of crisis. Furthermore, scrutinizing the myriad of features that make e-wallets indispensable in today's digital age while facing the upcoming challenges promises a comprehensive understanding of this transformative financial technology.

Furthermore, chapter 3 provides an in-depth analysis of the foundational theories of this thesis, focusing on the Technology Acceptance Model (TAM) and Nguyen & Pham's hypotheses. An updated formulation of the hypotheses will be provided. Every model will be explained in detail.

The application of the Research Method to research will be discussed in Chapter 4. In Chapter 5, data will be gathered and analyzed in order to provide a foundation for solving the research questions. In Chapter 6, the research questions are discussed, the solutions are presented, limitations are clarified, and recommendations for further investigations are provided.

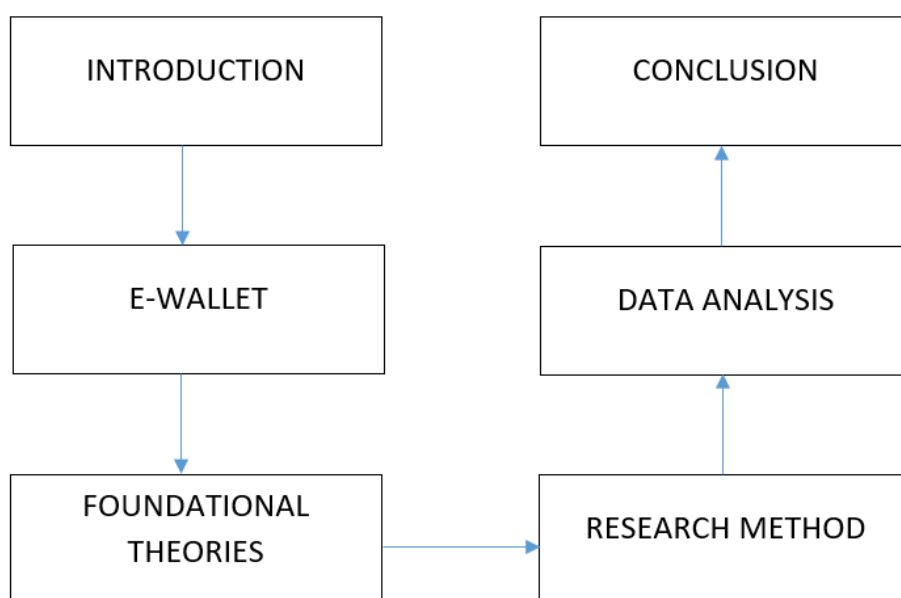


Figure 1. Thesis structure

2 Introduction to e-wallets

2.1 E-wallet Definition

Electronic wallet is commonly known as e-wallet. It is a category of electronic card applied for online transactions conducted via a mobile device or computer. E-wallets serve the same purpose as credit and debit cards. For making transactions, an electronic wallet must be associated with the user's bank account. E-Wallets are designed to facilitate digital monetary transactions. (Vikaspedia 2020)

As stated by Kagan (2024), digital wallets minimize the need to transport physical payment cards with you when you shop using your device. After entering and storing the information for your credit or debit card or bank account, you can use the device to make purchases. (Kagan 2024)

According to VietnamNetGlobal's 2023 record, brand awareness in Vietnam focuses on 4 e-wallets, of which Momo is the market's top competitor with a brand awareness of 68%. With a brand awareness score of 53%, ZaloPay is the second-place rival, ahead of ViettelPay (27%), and ShopeePay (25%). Additionally, the report highlighted MoMo as the preferred fintech firm with a 48 percent market share, an increase of 2 percentage points from the fourth quarter of 2022. The mobile wallet continues to be appealing to generations X, Y, and Z. In particular, fifty percent of Generation Z (16–25 years old) and Y (26–41 years old) favor the project. (VietNamNetGlobal 2023)

2.2 Types of e-wallet

According to Aite (2016), mobile wallets are divided into many types, each with different benefits, increasing the experience and attracting customers. These include technologies such as: Near Field Communication, QR codes, text based and digital only.

Near Field Communication (NFC)

Near Field Communication (NFC) is a short-range wireless technology enabling devices to interact and transmit information within close proximity, typically around 3.5 inches. This technology powers popular mobile payment solutions such as Apple Pay, Google Pay, Android Pay, and Samsung Pay. With NFC chips now widely integrated into modern smartphones, users can conveniently load multiple cards onto a single device, enabling seamless payments, access control, and a range of other innovative use cases. (Lawton 2022.)

Optical/ QR code

The QR (short for "quick response") code is essentially a stronger barcode. The QR code stores information both horizontally and vertically, whereas the normal barcode only stores information horizontally. This allows the QR code to save more than a hundred times more data (GovTech 2020). Regarding transactions, QR codes can carry transaction-related information that can be read by scanners to support money transfers and payments via e-wallets. In other words, shoppers can pay faster by scanning the QR code provided by the seller without using cash. QR codes are divided into two main types: Static QR Codes and Dynamic QR Codes. In a static QR code, the URL or information placed in this code cannot be edited, a common example is customer information when making a purchase, this code will be given to the seller to scan, and then a notification will appear to the customer's e-wallet to request payment to the seller. In contrast to static QR codes, dynamic QR codes can be edited, for example, the seller updates the amount that needs to be paid for the buyer to scan and pay. The QR code changes when the amount of money changes. (Shek-hawat 2021.)

Digital only

As the name implies, digital-only wallets can only be used to make online purchases in e-marketplaces that accept and offer them as payment methods. This is the only category with little real-world use; most transactions occur online, on the web, or in specific applications. (Aite 2016.) This form of e-wallet includes PayPal and Amazon Pay.

Text-based

SMS payment is a payment method that allows users to pay for goods or services by sending an SMS message from their mobile phone. It is a popular way to make transactions, pay small bills, or top up phone accounts. The amount will be deducted directly from the user's phone account or added to their monthly phone bill. The most common way to pay is to send a payment to a provider's phone number with the content of the amount you want to pay and the name of the bill, then a payment completion notification will be sent back to your phone number. (Bratschi 2024.)

Payment via SMS has many benefits such as convenience, speed and popularity. Users do not need to use cash or credit cards, just a mobile phone, and the payment process is very fast. Not only that, payment history will be saved for security, at the same time this form of payment also reduces the use of paper money to protect the environment. (Bratschi 2024.)

2.3 Applications of E-wallet in Vietnam (Thuy Nguyen)

Vietnam's digital payments landscape has seen remarkable growth, driven by its youthful population, high smartphone usage, and widespread internet access. Within this thriving ecosystem, e-wallets have emerged as the most active and impactful segment, making significant contributions to the overall expansion of digital payments in the country. Currently, the Vietnamese e-wallet market boasts over 40 providers collaborating with banks, representing a more than fourfold increase since 2015 when the sector was still in its nascent stages. (Nguyen 2023.)

According to Robocash Group (2023), by 2024, there will be 50 million users of e-wallets, 100 million in 2026, and 150 million in 2030 in Vietnam (VietnamPlus, 2023). The Vietnamese e-wallet market has witnessed exponential growth over the past four years, from October 2018 to October 2022. During this period, the number of e-wallet users surged from 12.3 million to 41.3 million, a remarkable 235% increase. This rapid adoption has resulted in more than half of Vietnam's population now actively using e-wallet services, a substantial rise from the 14% recorded at the end of 2018. (Vietdata 2023.)

E-wallets are gradually becoming indispensable in daily life, however, not all are the same. Each e-wallet will thrive in a field in which they specialize. For example, Momo e-wallet is focusing on corporate financial services and market expansion, while Shopee Pay integrates payment services into the Shopee e-commerce platform and continues to expand cooperation with many business partners. VnPay focuses on the Sai Gon Co.op retail chain, ZaloPay integrates into the Zalo messaging and communication application, ViettelPay takes advantage of developing the telecommunications ecosystem and Moca is an e-wallet developed with the Grab taxi service application. (Vietdata 2023.)

Competition in the e-market is currently fierce, e-wallets constantly tend to cooperate with other e-application parties to expand their ecosystems and increase their competitiveness. Leading the way is e-wallet Momo, which has partnered with online ride-hailing and food delivery apps like Grab, Baemin, Be, Ahamove, and Gojek to add e-wallet payments to these apps. Another e-wallet, ZaloPay, has also started partnering with e-commerce platforms like Sendo, Tiki, Lazada, and Tiktok. (Nguyen 2023.)

2.4 E-wallet through COVID-19 pandemic

E-wallets are known as a new payment solution via phone applications, this solution has rapidly expanded during the period of the covid 19 pandemic, as the demand for cash payments is significantly reduced. Since the covid 19 virus can survive on paper money for up

to 28 days, many countries have limited the use of cash as much as possible, believing that it can be a very dangerous means of infection if people continue to use it everywhere uncontrollably. More than twenty countries have supported and applied contactless payment methods, including the UK and countries with a tradition of using cash such as Germany and Japan. (Maynard 2021)

E-wallets have become increasingly popular, even after the pandemic. In a context where physical contact needs to be limited, e-wallets have proven their important role as a safe and effective means of payment. Not only does it help users make quick purchases, e-wallets also offer more convenience than carrying cash. With a smartphone, users can easily pay at stores, restaurants, and even online services without having to worry about forgetting to bring their wallet or credit card. One of the outstanding advantages of e-wallets is high security. They also provide many other useful features that help enhance the user's shopping experience such as the ability to store shopping information and promotions. (Maynard 2021)

Covid-19 has accelerated the e-wallet market by 3-5 years, opening up new opportunities for the entire digital payment ecosystem, banks, fintech companies, and e-wallets. During the Covid-19 pandemic, 57% of Vietnamese consumers had up to three e-wallet applications on their phones, and 55% of consumers preferred this new technology. E-wallets are predicted to become super apps in 2022 and cooperate with many other super apps such as e-commerce, retail and financial services apps. (Yen 2022)

2.5 Challenges

According to Singh, the advent of digital wallets and mobile payments has brought about a significant change in the way people transact. By providing fast, secure, and convenient payment methods, these technologies are making things simpler and more convenient than ever. However, there are still many obstacles that e-wallets are still facing. (Singh 2023.)

One of the biggest concerns is the issue of security and privacy. Users and businesses entrust their personal and important information to the application, any lapse in security can negatively affect the e-wallet users. (Fernandez 2023.) Fraudsters use a variety of tactics. These include phishing, malware attacks, and social engineering. They exploit vulnerabilities in the digital wallet system. (FOCAL 2023.)

As the e-wallet market expands, both domestically and globally, service providers must navigate a complex regulatory landscape. Strict compliance with standards such as PCI DSS and GDPR is crucial. Additionally, adherence to anti-money laundering (AML) and know-your-customer (KYC) requirements poses another key challenge for the industry.

Navigating these regulatory hurdles will be essential for e-wallet providers to sustain and grow their market footprint. (Fernandez 2023.)

Third, technical issues. This is an issue that is always of concern, e-wallets update their applications periodically, mainly to upgrade and patch software and systems to be compatible with related devices (Singh 2023). Additionally, as applications increasingly need to accommodate a large number of users, e-wallets must ensure that they can handle the increasing volume of users and transactions (Fernandez 2023).

According to Fernandez, building a digital wallet application is indeed an ambitious challenge, but with the right approach, it is completely achievable. First of all, it is important to focus on security, as this is a key factor in gaining user trust. A successful digital wallet application not only needs to meet the current needs of users but also needs to be able to adapt to new technological trends. This requires a flexible system that can be easily updated and expanded in functionality. In addition, compliance with legal regulations and industry standards is important to ensure legality and protect user rights. By addressing these challenges head-on and remaining adaptable in a rapidly changing landscape, digital wallets not only meet user expectations but also set new industry standards. (Fernandez 2023.)

3 Theoretical framework

3.1 Technology Acceptance Model (TAM) and Thesis's Research model

To support the research of user behavior in the technology field, the Technology Acceptance Model (TAM) has been widely used and applied. There are two main factors for assessing the motivation for users to adopt technology, which are the foundation of this model: Perceived Ease of Use (PEU) and Perceived Usefulness (PU) (Davis 1989, 330-332).

The current empirical literature on human behavior and information systems management has developed well-established multi-item scales to measure perceived ease of use and perceived usefulness. These two constructs have been pre-tested and validated extensively in several studies. Based on evidence from previous studies, it is hypothesized that perceived ease of use and perceived usefulness are fundamental determinants of user acceptance of new technologies and systems. This basic understanding has been consistently supported by empirical literature, highlighting the important role these factors play in shaping user acceptance and engagement. (Marikyan & Papagiannidis 2023.)

The model was developed from the original model, the Theory of Reasoned Action (ToRA), created by two scientists, Fishbein & Ajzen, to study the factors of individual consumer behavior. In the field of technology, the TAM model is used to study and predict user behavior towards technology products and services (Aydin & Buznar 2016).

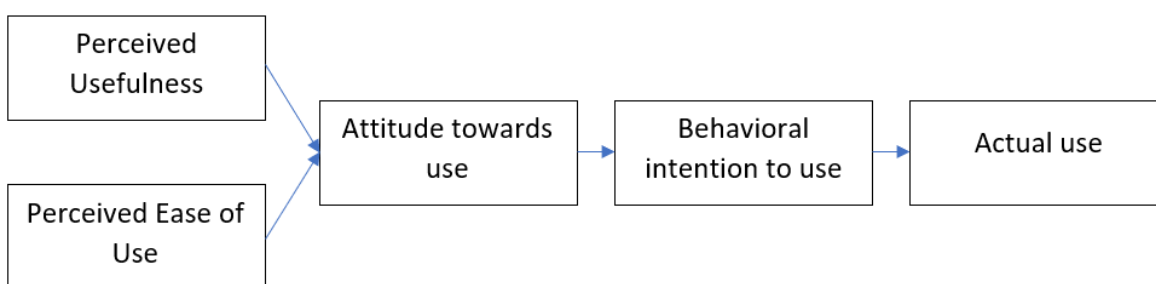


Figure 2. Technology Acceptance Model (TAM) (Davis, 1989)

According to Mathieson et al. (2001), the TAM model is easy to use and popular in research papers. Still, the two factors PU and PE are insufficient to comprehensively evaluate user behavior in technology usage. Some studies have developed more complete models by researching and adding additional factors to the TAM model (Mathieson et al. 2001, 87-89).

This thesis will use the model by Nguyen & Pham (2016), which is based on and expanded from TAM. This model was published in the scientific journal of the Open University in Ho Chi Minh City. Their research utilizes this new model to analyze the factors influencing user

behavior towards mobile technology services. Since e-wallets are a part of and related to mobile technology services, the author chooses Nguyen & Pham's model to support this thesis.

In Nguyen & Pham's research model, in addition to the two factors from the TAM model: Perceived Usefulness and Perceived Ease of Use, there are five additional factors that need to be researched: Social Influence, Perceived Costs, Perceived Mobility, Variety of Services, and Perceived Credibility.

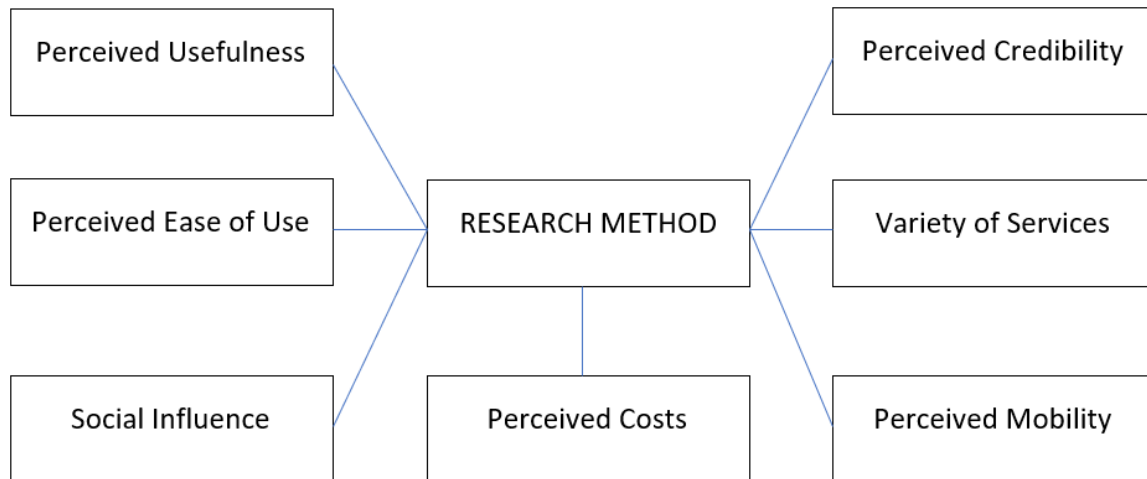


Figure 3. Nguyen & Pham's Research model (2016)

3.2 Behavioural Intention

According to Fishbein and Azjen (1975), Behavioral intention measures the subjective likelihood of the subject to perform a behavior and is considered an antecedent of behavior performance, the greater the intention, the higher the possibility of performing the behavior (Fishbein & Azjen 1975).

In the work Theory of Planned Behavior published by Ajzen in 1991, he also mentioned that behavioral intention is also related to planning and commitment to perform that behavior, not just the desire to perform the short-term behavior (Ajzen 1991).

3.3 7 Factors of the Research model

3.3.1 Perceived usefulness (PE)

Perceived Usefulness (PU) is defined as the extent to which a person believes that using a particular system will enhance their job performance. In other words, PU refers to a user's belief that using a technology or system will be beneficial and help them do their job more

efficiently, more easily, or achieve better results. This concept plays an important role in determining whether users are willing to accept and use technology because if they feel that technology is useful, they are more likely to use it. (Davis 1989.)

An example of a consumer's perceived usefulness of an e-wallet service is when they believe that using an e-wallet will help them pay their bills quickly or help them manage their business expenses more easily. (Rahmayanti et al. 2021.)

On this basis, the author forms the following hypotheses:

H1: The greater the perceived usefulness, the stronger the intention to use e-wallets.

3.3.2 Perceived Ease of Use (PEU)

According to Davis (1989), perceived ease of use refers to the extent to which an individual believes that using a particular system will be effortless. When a system is user-friendly and easy to use, the users are more inclined to adopt and embrace the application. (Davis, 1989.)

Perceived ease of use also impacts perceived usefulness because when people feel that a system or technology is easy to use, they are more likely to perceive its benefits. Specifically, if using a technology does not require much effort and time, users will focus more on the useful features and functions of that technology. (Rahmayanti et al. 2021.)

Based on this, the author forms the following hypotheses:

H2: The greater the perceived ease of use, the stronger the intention to use a mobile wallet.

3.3.3 Social Influence (SI)

Social influence, also known as "subjective norms", is a person's perception of being influenced by society to perform or not to perform a behavior. These social pressures come from family, friends, colleagues, or the media. (Ajzen & Fishbein 1975.)

Subjective norms influence users' intention to use technology through social factors and expectations of others. If an individual perceives that the people around them support using a new technology, they will be more inclined to accept and use it. Conversely, if the surrounding environment does not encourage or support the use of technology, the individual may be less likely to intend to use it. (Ikhsan & Sunaryo 2020.) Therefore, the subjective norm factor needs to be considered when studying the intention to use e-wallets. The third hypothesis is:

H3: Higher social influence will increase the intention to use e-wallet

3.3.4 Perceived Credibility (PCr)

"Perceived Credibility" or "Perceived Trust" is a concept in user behavior and technology research, referring to the extent to which users trust the security and reliability of a particular system or technology (Setiawan & Achyar 2021).

Perceived trustworthiness can strongly influence users' intention to use technology. If users believe that a system or application is secure and trustworthy, they will be more inclined to accept and use it. Conversely, if they have any doubts about the security or trustworthiness of the system, they will be less likely to use it. (Nguyen & Pham 2016.) The fourth hypothesis is proposed as:

H4: The more trustworthy the e-wallet system is, the higher the intention to use the e-wallet will be.

3.3.5 Perceived Costs (PC)

Consumers today tend to evaluate and consider whether mobile services are worth their money (Chong et al. 2012). Nguyen and Pham (2016) argue that using wireless services will be more expensive than using wired services because users will incur additional costs for mobile phones and mobile services, such as transaction fees, internet fees, and monthly fees (Nguyen & Pham 2016).

Furthermore, the perception of high costs can influence the overall satisfaction and perceived value of using mobile services. If users feel that the expenses are not justified by the benefits, they may be less likely to adopt and consistently use e-wallets. This can be especially true when the cost of mobile data and transaction fees is relatively high compared to the average income. (Chong et al. 2012.)

These costs will also affect the decision to use e-wallets. The fifth hypothesis is:

H5: The higher the cost, the less intention to use e-wallets

3.3.6 Mobility

According to Kalinic & Marinkovic (2015), mobility is the ability to provide services and transactions anytime, anywhere. Wireless services can now be used via mobile devices via Wifi networks or internet data packages, without any space or time restrictions, and can be used even when moving. (Kalinic & Marinkovic 2015.)

The mobility of these services is an advantage to compete with traditional services, instead of spending effort to exchange and work directly, online payments and services on the

phone are being preferred by users. Just having a mobile device and the internet, people will tend to use online transactions more. (Nguyen & Pham 2016.) The author hypothesizes as follows:

H6: The higher the mobility of technology, the more intention to use e-wallets

3.3.7 Variety of services

According to Nguyen & Pham (2016), Service diversity is a factor to research whether users' attitudes are more negative or positive when mobile service diversification occurs (Nguyen & Pham 2016). Consumers will not be willing to pay when they feel that the service is less diverse and not worth the price (Chong et al 2012). Vietnamese people tend to be open to new experiences and services, while also ignoring outdated services. Research has measured that, on average, Vietnamese people download 5 new applications and delete 3 unused applications per month. (Appota 2018.) During the Covid-19 pandemic years, the ecosystems of e-wallets have grown very diversely and rapidly, making e-wallet applications the most downloaded applications (Appota 2021). The author's final hypothesis is:

H7: The higher the diversity of e-wallet services, the higher the user's intention to use

3.4 Research Methodology and Data Collection

3.4.1 Research Approach

According to Streefkerk (2019), many research papers apply both inductive and deductive research methods. Inductive research is often used to generate new theories and definitions, whereas deductive research focuses on testing the empirical validity of a theory. (Streefkerk 2019.)

The inductive process begins with self-study, summarizing the data, and analysing the results. At the same time, the researchers will use the facts, information, and patterns they refer to and based on all of those factors to build a hypothesis. (Wilson 2010, 7.)

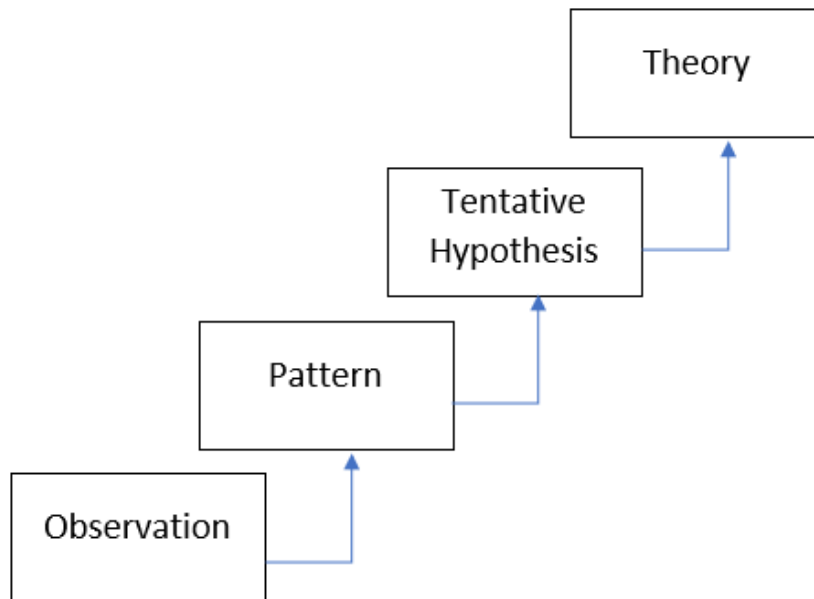


Figure 4. Inductive Research Approach

In contrast to inductive research, deductive research works from the top down, and is often used to examine and investigate the validity of a theory. The researcher may begin by examining the elements of the hypothesis, then collect actual data to confirm or refute the initial hypothesis that was formulated. (Wilson 2010, 7.)

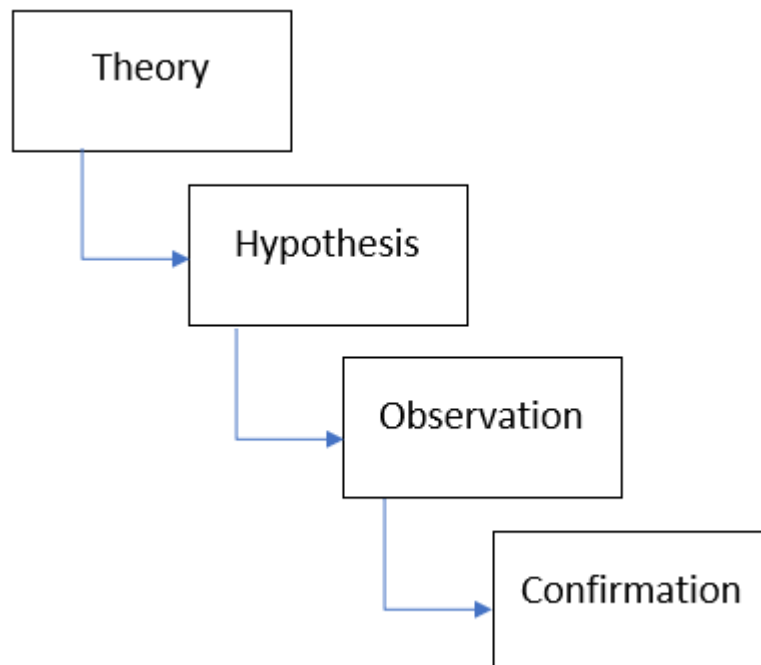


Figure 5. Deductive Research Approach

The author will use the deductive approach to apply to the thesis to collect data and review the factors affecting the use of e-wallets by Vietnamese people, thereby identifying the risk factors of capacity and drawing the final conclusion.

3.4.2 Research Methodology

The research will use quantitative research method to collect and synthesize data. Quantitative research is the process of collecting and summarizing numerical data, applied to groups of research subjects that can be statistically calculated in numbers, often interpreted in the form of charts and diagrams (Gupta & Gupta 2011, 13).

The author will use quantitative research to collect data to determine the factors affecting the use of e-wallets by Vietnamese people and to understand the current trend of using e-wallets.

3.4.3 Data Collection

According to Simplilearn 2022, in order to assess and predict future trends, a strategy for collecting and analysing data is required (Simplilearn 2022). There are two types of data commonly used in research papers: primary data and secondary data. Data collected directly from the person conducting the research is called primary data, and the researcher is responsible for the data, methods, and results of his or her analysis. (Kovalainen & Eriksson 2008, 78-80.) Secondary data is information collected from others' research, which can be information in newspapers, research papers, books, or the internet. Although secondary data can be found quickly, it may cost some money and is less accurate than primary data. (Surbhi 2020.)

The author will use both data sources to collect the data needed for the research. Primary data will be collected through surveys conducted by Vietnamese participants, while secondary data will be taken from articles, books, and internet sources.

4 Research and Data Analysis

4.1 Data collection

4.1.1 Primary data

The main data for this thesis was collected through an online questionnaire survey on Google Forms, thanks to the convenience and good data organization of this tool. The survey consisted of two parts:

Part 1 consisted of nine general questions about demographics, smartphone usage, mobile transaction experience, awareness, and first contact with e-wallets, to study the characteristics of the respondent group and introduce the topic of e-wallets.

Part 2 focused on examining the factors influencing the decision to adopt e-wallets, based on the research model and hypotheses from Nguyen & Pham (2016). The observed factors and variables were adjusted to suit the research. Users were asked eight questions and used a 5-point scale to assess their level of agreement.

The questionnaire was written in Vietnamese, and a translated version was attached. Before publication, the survey was pilot-tested on six people to ensure accuracy and clarity. The survey was distributed through groups on Facebook, a social network used by most Vietnamese people. The survey began on July 2, 2024 and ended on July 20 of the same year, reaching 121 survey participants.

4.1.2 Secondary data

To establish the theoretical foundation and definitions for the study, the author thoroughly reviewed a wide range of secondary sources in the first two chapters. These sources included online theses, articles, academic journals, market research reports, white papers, and specialized books. By drawing upon this diverse body of literature, the author was able to gain a comprehensive and up-to-date understanding of the research topic, ensuring the reliability and currency of the information and theories presented in the thesis.

In the process of collecting data from secondary sources, the author focused on identifying important and influential factors in the use of e-wallets in Vietnam. In this way, the author can identify the aspects that e-wallet users are most interested in. The detailed analysis and comparison of results from previous studies help the author have a comprehensive view and identify the key factors affecting the decision to use e-wallets for Vietnamese users. This not only helps the research to be scientific and have a solid theoretical basis but

also contributes to drawing valuable conclusions and answering the research questions initially posed.

Collecting and analysing data from secondary sources is an important and necessary step to ensure the accuracy and reliability of the research, as well as to understand the factors affecting the e-wallet usage behavior of consumers in Vietnam.

4.2 Data Analysis

The survey consists of a total of 17 questions in two parts. The first part will have 121 participants, from questions 1 to 8 will collect personal information including, gender, age, occupation, current region, income, and the respondents' attention to e-wallets. Question 9 is a question about the purposes for which people use e-wallets. Part 2 will focus on collecting survey participants' opinions on 7 factors in the model that the author used in the research paper. Each factor will have questions, and participants will rate their level of agreement on a 5-level scale, from "Strongly disagree" to "Strongly agree".

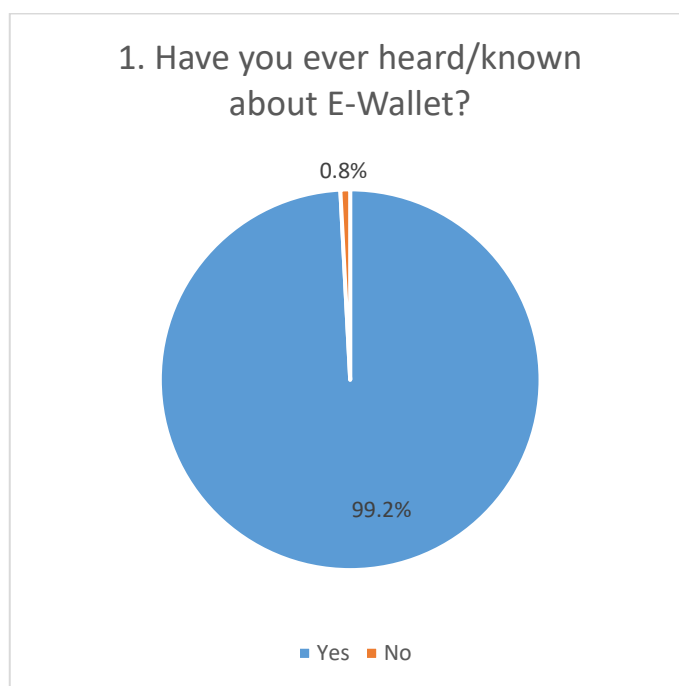


Figure 6. Percentage of people already heard/know about e-wallet

The first question was asked to determine the coverage of e-wallets in society. It is also an opening question, and also contributes to leading to the next questions. Almost everyone knows about e-wallets, among 121 survey participants, only 1 person has never heard of it, accounting for 0.8%.

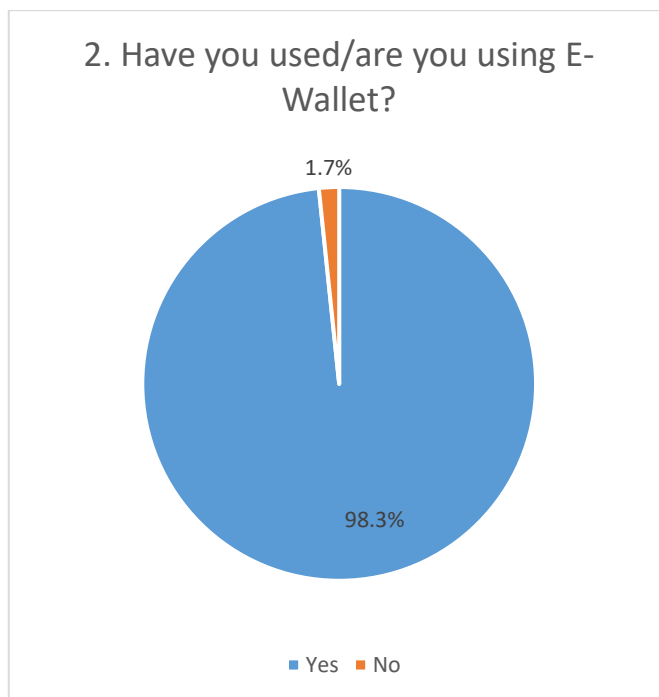


Figure 7. Percentage of people using e-wallet

The second question was asked for survey participants to decide whether to continue participating in the survey or not, if they have never heard of e-wallets or do not use them, they will not participate in the second part of the survey. In this question, 98.3% of participants use e-wallets, only 2 people (1.7%) do not use them.

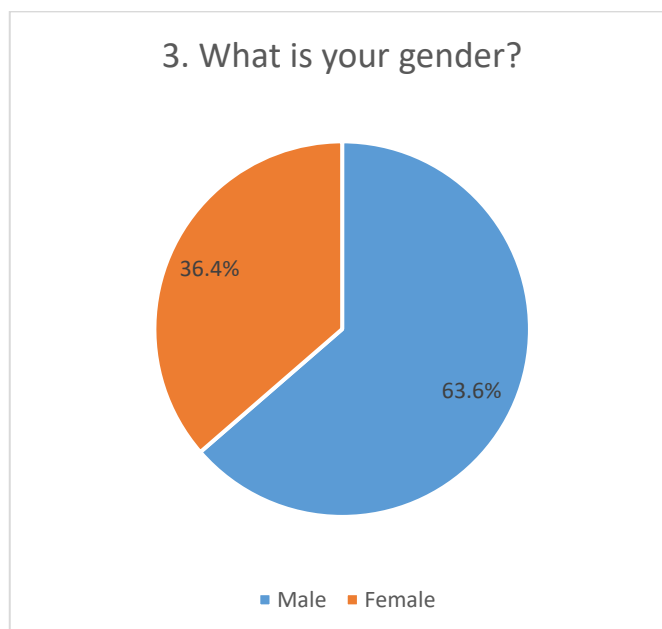


Figure 8. Percentage of two genders participate in the survey

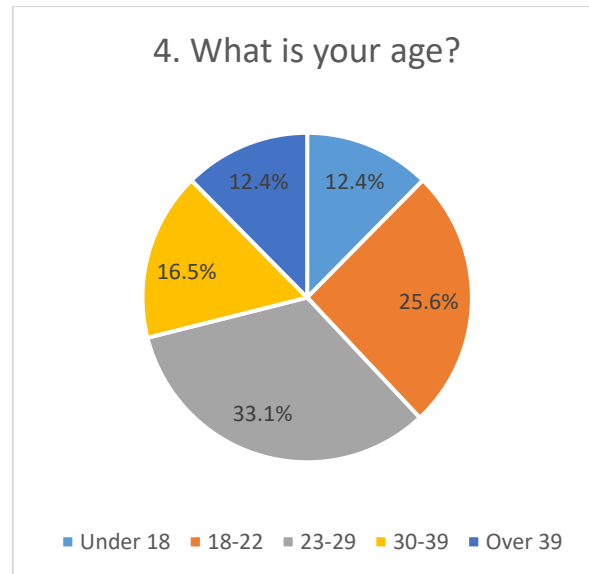


Figure 9. Percentage of different age groups

To better understand the demographics of the participants, questions 3 and 4 will collect gender and age groups, from which the author can determine which group is more likely to use e-wallets. Up to 63.6% of the survey respondents are male and the remaining 36.4% are female. Of which, the age group using e-wallets the most is between 23 and 29 years old, accounting for 33.1%, the group of 18 to 22 years old accounts for 25.6%, the age group of 30-39 accounts for 16.5% and both the group under 18 and over 39 years old account for 12.4%. The age group with the most e-wallet users is from 18 to 29, this is the age range of young people so they tend to be more open and adapt to new technology more easily.

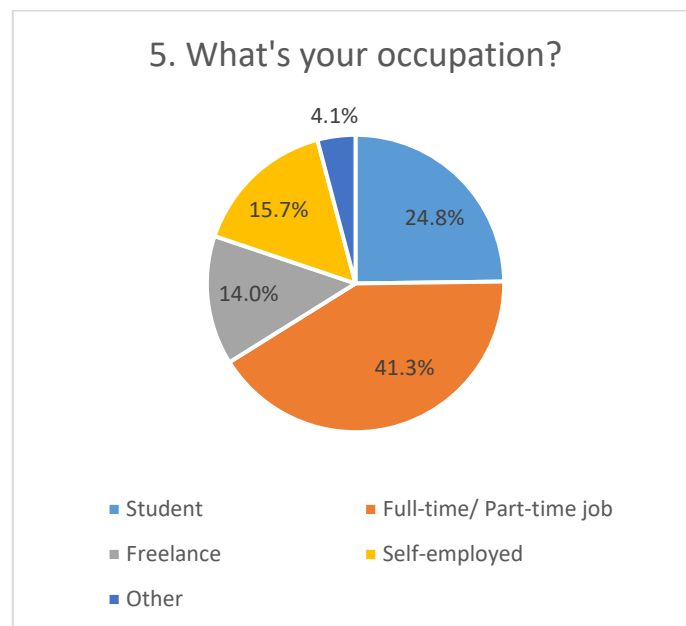


Figure 10. Percentage of occupations

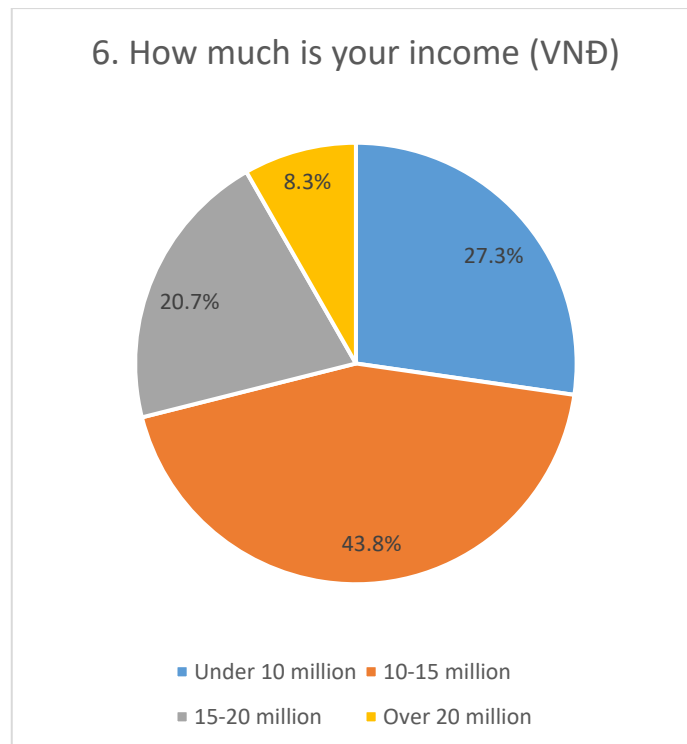


Figure 11. Percentage of different income groups

From this question number 6 onwards, there will be 119 participants left, because 1 person answered that he has never heard of e-wallets and another person out of 121 people answered that he does not use e-wallets. Based on the information from the figure 10 and 11, we can see that:

In terms of occupation, 41.3% of the survey participants are working full-time or part-time, 15.7% are freelancers, 14% are students and 4.1% are doing other jobs. This shows that the survey participants are mainly working people with stable income.

In terms of income, 43.8% of the survey participants have an income of 10-15 million VND, 27.3% have an income of less than 10 million VND, 20.7% have an income of 15-20 million VND and 8.3% have an income of more than 20 million VND. The income group is mainly from 10-15 million VND, that is, the middle-income group.

From the above information, we can see that the survey participants are mainly young people, working and have an average income. This could be a potential customer group for e-wallets so they can create suitable campaigns and services for this customer file.

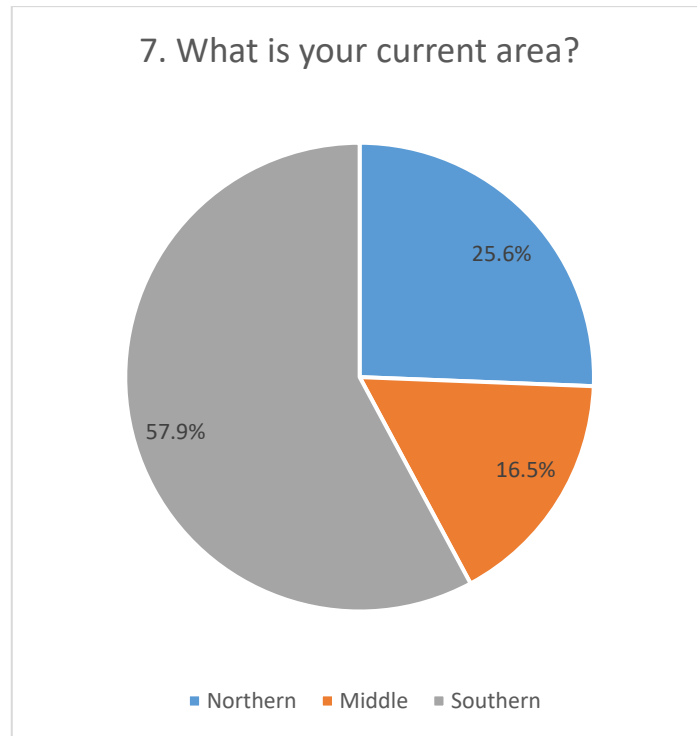


Figure 12. Percentage of people in different allocations

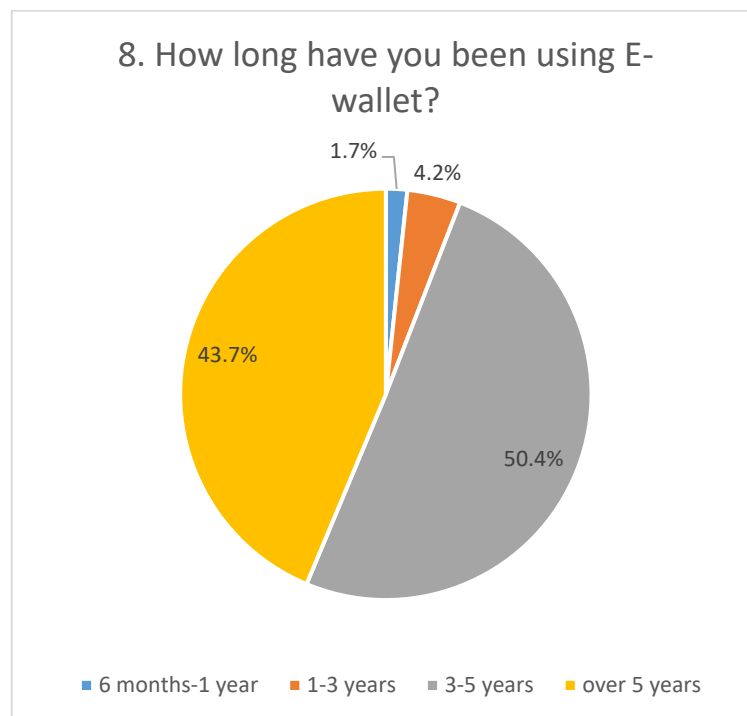


Figure 13. Percentage of time spent by people

Figure 12 and 13 provide information on the current region where the survey participants are and the time they have used e-wallets, 57.9% of the participants are in the Southern region, 25.6% in the Northern region, and 16.5% in the Central region. Regarding the time of using e-wallets, 50.4% of the participants have used them for 3-5 years, 43.7% have

used them for over 5 years, 4.2% have used them for 1-3 years, and 1.7% have used them for 6 months - 1 year. It can be seen that the majority of the survey participants are from the Southern region and have used e-wallets for quite a long time, from 3 years or more. These are people who are familiar with and have the habit of using e-wallets, this time also coincides with the time when e-wallets exploded at the beginning of the Covid-19 pandemic, perhaps most people have become familiar with it during the social distancing period.

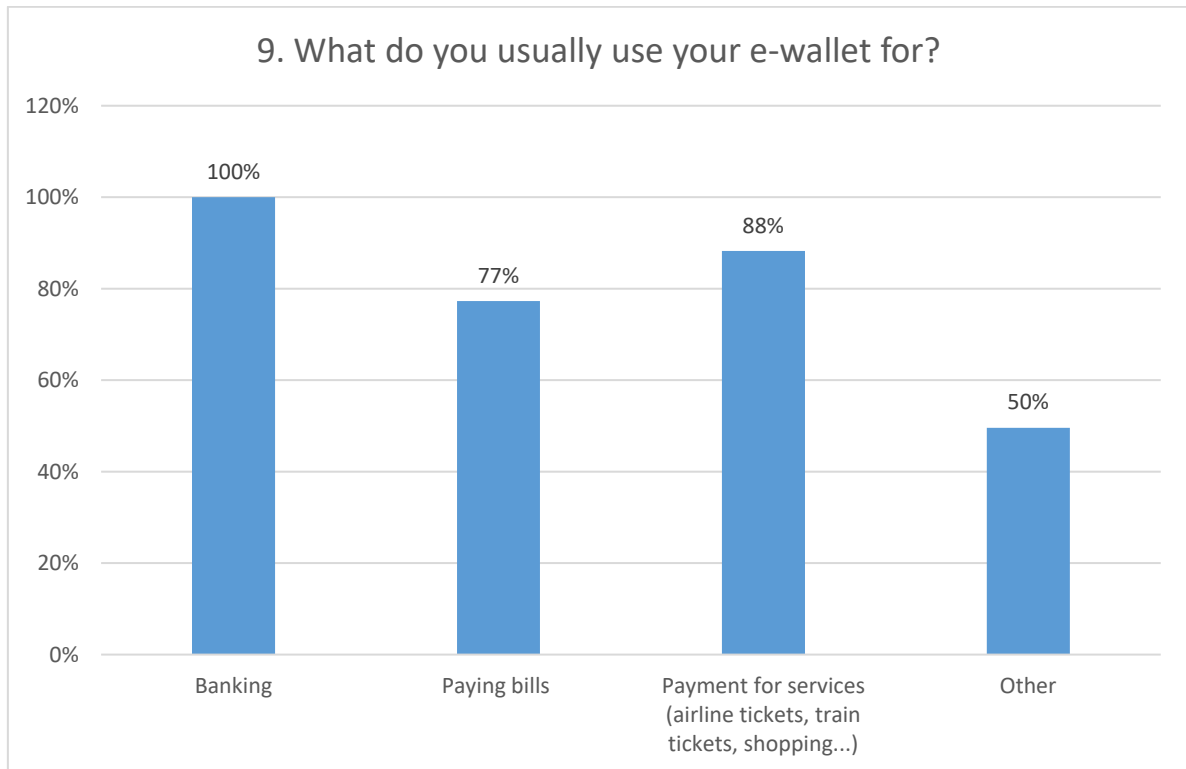


Figure 14. Percentage of different purpose of using e-wallet

This bar chart shows that the main purpose of using e-wallets is to make banking transactions, accounting for 100% of participants. This is a common feature when e-wallets are often linked to bank accounts for convenient payment and personal financial management.

Next, 77% of people use e-wallets to pay bills, utilities, 88% use them to pay for services such as buying plane tickets, trains, shopping. These purposes reflect the increasingly popular trend of cashless payments. This shows that e-wallets have become a popular payment method for shopping and transportation activities, reflecting its convenience and popularity in daily life.

In addition, 50% of participants also use e-wallets for other purposes, which may include services such as money transfers, QR code scanning, membership card applications, etc.

This suggests that e-wallets are becoming a multi-purpose platform, allowing users to perform many different types of transactions instead of just paying bills or shopping.

Overall, the chart reflects the popularity and diversification of e-wallets in many areas of modern life, from banking transactions to paying for goods and services. This is a remarkable development trend in the increasingly widely applied digital economy.

From table 1 onwards, it will be Part 2 of the survey. The author will present the results and comments based on the level of agreement of the participants. To quantify the hypotheses that have been made before, some questions will be asked to study the behavior and intention of e-wallet users.

Perceived Usefulness	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Using e-wallet saves me time	2.5%	4.2%	26.9%	20.2%	46.2%
I can pay and transfer money faster with an e-wallet than without one.	1.7%	4.2%	33.6%	27.7%	32.8%
E-wallet helps me make transactions easier than before	0.8%	0.8%	25.2%	32.8%	40.3%
I get better (easier and faster) information when there are changes in my account	1.7%	1.7%	28.6%	44.5%	23.5%

Table 1. Percentage in Perceived Usefulness part

The first table will help the author quantify the perceived usefulness of e-wallets by users using four related questions about saving time, increasing transaction speed, easy financial operations, and updating account information.

Saving time is one of the main benefits of e-wallets recognized by users. About 46.2% of people "strongly agree" that using e-wallets helps them save time. This is the highest rating among the surveyed criteria.

Transaction speed is also a prominent advantage of e-wallets. Nearly 33% of people "strongly agree" that using e-wallets helps them make payments and transfers faster, 33.6% choose "neutral" and 27.7% choose "agree".

In addition, the ability to easily perform transactions is also an advantage recognized by users. About 40.3% of people "strongly agree" that e-wallets help them make transactions more easily. The number of 32.8% is also quite high for the "agree" group. It can be seen that this is one of the main benefits that e-wallets bring that users are very interested in.

Finally, e-wallets also help users update account information better when there are changes. Only 23.5% of people "strongly agree" with this. Although this rate is not as high as other criteria, the group of people who choose "agree" is up to 44.5%, still showing the value of e-wallets in personal management.

Perceived Ease of Use	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
E-wallet is easy to use and apply	0.8%	0.8%	21.0%	31.1%	46.2%
Interactions to use e-wallets are time/effort free	0.8%	2.5%	25.2%	28.6%	42.9%
Interactions with the e-wallet are guided very clearly and easily understood	2.5%	2.5%	31.9%	21.8%	41.2%
I can easily ask my e-wallet to execute a command of my choice.	0.8%	5.9%	36.1%	16.8%	40.3%

Table 2. Percentage in Perceived Ease of Use part

The second table is about Perceived Ease of Use, so the author will collect data on related aspects such as: how user-friendly it is, how straightforward the method is, how clear and understandable the services are, and how efficiently they fulfill requests.

First, we see that the majority of users think that e-wallet is very easy to use and apply. Up to 46.2% of people "strongly agree" and 31.1% "agree" with this statement. This shows that e-wallet is designed to be very user-friendly. Next, the data table also shows that the majority of users feel that operations with e-wallets are very quick and time-saving. Up to 42.9% of people "strongly agree" and 28.6% "agree" with this statement. In addition, the majority of users also rate interactions with e-wallets are very clear and easy to understand. 41.2% "strongly agree" and 21.8% "agree" with this. Finally, regarding the ability to control the e-wallet, the results were also relatively positive, with 40.3% "strongly agree" and 16.8% "agree" that they can easily request the e-wallet to execute their commands.

Overall, the data shows that users appreciate the ease of use, convenience, and control of the e-wallet. These are important advantages that improve the user experience.

Social Influence	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Family and friends influence my decision to use e-wallet	2.5%	30.3%	21.0%	22.7%	23.5%
My colleagues influence my decision to use e-wallet	18.5%	8.4%	17.6%	39.5%	16.0%
Media Influences my decision to Use an e-Wallet	2.5%	16.8%	21.0%	37.0%	22.7%
I see most people around me using e-wallet services	2.5%	10.1%	19.3%	31.1%	37.0%

Table 3. Percentage in Social Influence part

To better understand the social influence on the intention to use e-wallets, this third table will help the author know what influences users as follows:

Influence of family and friends: The data shows that family and friends have a significant influence on users' decision to use e-wallets. 23.5% of people "strongly agree" and 22.7% "agree" that family and friends have an influence on this decision. However, 2.5% "strongly disagree" and 30.3% "disagree" with this statement, showing that not everyone is influenced by the people around them.

Influence of colleagues: The results also show that colleagues have a significant level of influence, with 16% of people "strongly agree" and 39.5% "agree" that colleagues have an influence on the decision to use e-wallets. However, 18.5% "strongly disagree" and 8.4% "disagree" with this.

Influence of media: Media was also identified as an influential factor, with 22.7% of people "strongly agree" and 37% "agree" that media influences the decision to use e-wallets, 2.5% "strongly disagree" and 16.8% "disagree".

Influence of observing people around: The results also showed that observing people around using e-wallets influences users' decisions, with 37% "strongly agree" and 31.1% "agree". Only 2.5% "strongly disagree" and 10.1% "disagree" with this statement.

Perceived Costs	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I feel mobile devices that can use e-wallets are very expensive	10.1%	47.9%	10.9%	11.8%	19.3%
I feel the connection cost (4G, wifi,) to use e-wallet is very expensive.	16.8%	16.8%	36.1%	17.6%	12.6%
I will not use e-wallet because of its cost	17.6%	40.3%	18.5%	10.9%	12.6%
I prefer to spend money using other services than e-wallet services	28.6%	17.6%	40.3%	1.7%	11.8%

Table 4. Percentage in Perceived Costs part

The author used questions about the cost of using e-wallets to study the users' Perceived Costs. Some of the prominent figures in this table are that up to 47.9% of people disagree that the device to use e-wallets is expensive, and 10.1% strongly disagree, which proves that e-wallets can be used on many devices that are suitable for users' budgets.

Regarding the cost of internet connection to use e-wallets, most people hold neutral thoughts (36.1%), 16.8% strongly disagree that it is expensive, and 16.8% also disagree. In addition to using e-wallets, internet costs also help people do many other things, so it is understandable that most people do not feel it is expensive.

Up to 40.3% of people do not worry about the cost of using e-wallets. 17.6% of people completely disagree with not using e-wallet because of its cost. It can be seen that the cost of use is quite affordable for most people. 18.5% are neutral and about 23.5% are willing not to use it if the cost is too high. 40.3% of neutral people prefer to use other services instead of e-wallet. However, up to 28.6% of people completely disagree with this. It can be seen that e-wallets are gradually becoming indispensable in today's life.

Perceived Credibility	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I think personal information will be secure when using e-wallet services.	6.7%	31.1%	16.8%	21.8%	23.5%

I feel completely secure when making transactions via mobile devices.	3.4%	30.3%	36.1%	10.1%	20.2%
I believe that transactions via e-wallet services will be carried out accurately.	1.7%	3.4%	31.9%	42.0%	21.0%
I believe that e-wallet transactions will be easy.	1.7%	6.7%	20.2%	47.9%	23.5%

Table 5. Percentage in Perceived Costs part

The table of information on users' perceived trust in e-wallet services is as follows:

First of all, 23.5% of users completely trust that personal information will be secure when using e-wallet services. This is a significant proportion, showing users' trust in the aspect of information security. However, 31.1% of users still do not trust this, which suggests that there is still a need for security improvements to build user trust.

In terms of transaction security, 20.2% of users completely feel safe when making transactions via mobile devices. On the contrary, 30.3% of users do not feel that way. This is also a noteworthy issue, providers need to focus on enhancing security measures so that users feel completely secure when using these services.

Notably, 21% of users are completely confident that e-wallet transactions will be performed accurately. There are still 31.9% of users who are not completely confident in this. This is also an aspect that needs to be improved to increase user trust.

Finally, 23.5% of users are completely confident that e-wallet transactions will be easy to perform. This is also a significant proportion, showing users' trust in the ease of use of e-wallet services. However, there are still 20.2% of users who are not completely confident in this.

This result shows that there are still some issues regarding user trust in e-wallet services that need to be improved, especially in aspects such as information security, safety and accuracy of transactions.

Variety of services	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
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E-wallets are very attractive to me these days.	4.2%	6.7%	40.3%	23.5%	25.2%
There are many e-wallets that meet my needs.	5.9%	1.7%	26.1%	41.2%	25.2%
Current e-wallet services meet my expectations	2.5%	4.2%	20.2%	42.0%	31.1%

Table 6. Percentage in Variety of services part

The results obtained from Table 4 on the diversity of e-wallet services show that users are increasingly interested and satisfied with the diversity and quality of e-wallet services. However, there are still some aspects that need to be improved to attract and fully meet the needs of all users. Service providers need to continue to invest and improve e-wallet services to promptly meet the diverse needs of users.

First of all, 25.2% of users completely feel that e-wallets are very attractive in recent days, and another 23.5% of users also agree with this opinion. This shows the interest and attraction of users to e-wallet services. However, there are still 6.7% of users who disagree with this statement and 4.2% completely disagree and up to 40.3% of users give neutral opinions, suggesting that improvements are needed to attract more users.

Regarding the diversity of e-wallets on the market, 41.2% of users agreed and 25.2% of users strongly felt that there were many e-wallets that met their needs. This shows the development of the e-wallet market and the diversity of choices for users. However, 5.9% of users still strongly disagreed with this statement, showing that there are still some people who do not feel that the e-wallet market fully meets their needs. Finally, 31.1% of users strongly believe that current e-wallet services meet their expectations. At the same time, another 42% of users also agreed with this opinion, which is a significant proportion, showing user satisfaction with existing services. However, 2.5% of users strongly disagreed and 4.2% denied this statement, showing that there are still some aspects that need to be improved to fully meet user expectations.

Mobility	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I can use my e-wallet at any time	5.0%	6.7%	21.8%	32.8%	33.6%

I can use my e-wallet anywhere	11.8%	3.4%	13.4%	35.3%	36.1%
E-wallet is perfect for me because I always have my mobile device with me.	3.4%	6.7%	12.6%	45.4%	31.9%

Table 7. Percentage in Mobility part

Regarding the mobility of e-wallets, the author collected the following opinions from the survey respondents:

The ability to use e-wallets at any time was "strongly agreed" (33.6%) and "agree" (32.8%) by the majority of users, indicating the convenience and flexibility of these services. However, 21.8% of users remained neutral, 6.7% disagreed, and the remaining 5% completely denied, suggesting that there are still some limitations.

Regarding the ability to use everywhere, 36.1% of users strongly agreed and 35.3% agreed, indicating the high mobility of e-wallets. However, 11.8% of users strongly disagreed, and 13.4% had not made a clear decision.

The majority of users (31.9%) strongly agreed and agreed (45.4%) that e-wallets are suitable because they always have their mobile devices with them, indicating suitability and convenience. However, 3.4% disagreed, suggesting that some experiences do not meet their needs.

Most users appreciate the mobility and convenience of e-wallets. Furthermore, providers need to continue to improve to ensure that users can use them anytime, anywhere without any restrictions.

Behavioural Intention	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
When there are suitable conditions (financial capacity, service price, job requirements) I will use e-wallet.	1.7%	20.2%	5.9%	25.2%	47.1%
I believe I will use/continue to use e-wallet	0.8%	5.9%	21.0%	21.8%	50.4%

I will use more e-wallet services in the future	1.7%	6.7%	33.6%	10.9%	47.1%
I will recommend the wallet to others	2.5%	2.5%	37.8%	16.8%	40.3%

Table 8. Percentage in Behavioural Intention part

This final research table is for the author to identify the trend of e-wallet users' intention to use, the survey results show that users have a fairly positive attitude and are willing to use e-wallets. When there are suitable conditions such as finance, price and job requirements, nearly 3/4 of users (72.3%) said they would use e-wallets. Only about 1/5 (21.9%) disagreed.

Regarding continuing to use e-wallets, more than 70% of users (72.2%) said they would continue or increase their use. There is still a small percentage (6.7%) who do not want to continue using them.

In the future, nearly 60% of users (58%) said they would use more e-wallet services. Recommending e-wallets to others is also supported by more than 1/2 of users (57.1%). Although there are still a small number of people who disagree with these opinions, in general, these are quite positive results in terms of the trend of using and accepting e-wallets by users. However, service providers still need to put in more effort to maintain and improve e-wallet services to convince more users.

5 Conclusion

5.1 Answer to the Research Questions

The author uses the hypotheses in section 3.3 to evaluate and discuss the results obtained from the survey and data collection above. There are a total of 7 hypotheses proposed, abbreviated by "H1" to "H7" associated with 7 factors affecting the intention to use e-wallet:

Perceived usefulness	H1: The greater the perceived usefulness, the stronger the intention to use e-wallets.
Perceived Ease of Use	H2: The greater the perceived ease of use, the stronger the intention to use a mobile wallet.
Social Influence	H3: Higher social influence will increase the intention to use e-wallet
Perceived Credibility	H4: The more trustworthy the e-wallet system is, the higher the intention to use the e-wallet will be
Perceived Costs	H5: The higher the cost, the less intention to use e-wallets
Mobility	H6: The higher the mobility of technology, the more intention to use e-wallets
Variety of services	H7: The higher the diversity of e-wallet services, the higher the user's intention to use

Table 9. Factors and Hypotheses

Sub-question 1: "Are Vietnamese people gradually accepting e-wallets?"

Based on the survey information and the development of e-wallets during the Covid-19 period, it can be seen that Vietnamese people are gradually accepting and using e-wallets more and more. Some of the main reasons for this trend include the increasing popularity of smartphones and the internet, making it easier for users to access and use e-wallet applications.

In addition, the development of large e-wallet platforms such as MoMo, GrabPay, ZaloPay, etc also plays an important role. These platforms provide good user experiences, with diverse features and are encouraged to use. The convenience and security of e-wallets, which make transactions faster and more convenient than cash, are also factors driving this trend.

The general trend of digital payments globally, especially with younger generations, has made Vietnamese people gradually accept and use these modern payment methods. However, cash is still the preferred payment method for many people, especially the elderly and those in rural areas. The transition to electronic payment methods is still taking place slowly.

Main research question: “What are the factors affecting e-wallet usage behavior in Vietnam”, and Sub-question 2: “How to improve and develop further to increase experience and motivate customers to use e-wallets in Vietnam?”

Perceived Usefulness

Begin with Perceived Usefulness, the main benefits include saving time, speeding up transactions, making financial transactions easier, and updating account information more efficiently. Saving time is considered one of the main benefits of e-wallets. Users perceive that using e-wallets saves them a lot of time compared to traditional payment methods. This is one of the most highly rated criteria among the surveyed criteria. Fast transaction speed is also a prominent advantage of e-wallets. Many users feel that using e-wallets helps them make payments and transfer money faster. Besides, there is also a significant proportion of users who have a neutral feeling about this criterion. In addition, the ability to make transactions easily is also a benefit that users recognize when using e-wallets. This is one of the main benefits that e-wallets bring and users are very interested in. Finally, e-wallets also help users update account information more effectively when there are changes. Although the percentage of users who highly rate this criterion is not as high as other criteria, there is still a large group of users who feel that this is a significant value that e-wallets bring to personal financial management. These strengths may explain why e-wallets are increasingly popular and widely used by users.

To enhance the perceived usefulness of e-wallets, companies and service providers can focus on the key benefits that users value. Time-saving is one of the biggest advantages of e-wallets, so providers can promote and emphasize this convenience, especially targeting the 18-29 age group. Furthermore, companies can simplify and optimize the user interface to enhance the experience of fast and easy transactions. Finally, updating account information when there is a change is also an important benefit of e-wallets. Providers can enhance this feature and ensure that users can easily manage their financial information, contributing to the popularity and widespread application of this technology.

Perceived Ease of Use

First, e-wallets are considered to be very easy to use and apply, users rate the activities with e-wallets as very quick and time-saving. This convenience is one of the main benefits of e-wallets compared to traditional methods. When users can perform financial transactions efficiently and quickly, they will feel that e-wallets bring them a lot of practical value. Furthermore, users also appreciate the clarity and ease of understanding of e-wallet services. Finally, the ability to control e-wallets is also an aspect that users rate positively. When users feel that e-wallets meet their needs well, they will feel more secure and connected to the service. Overall, these figures show that e-wallets are being designed and developed with a focus on user experience. Providers have focused on factors such as ease of use, convenience, transparency and control, which have helped e-wallets become a useful and well-received tool for users. However, there are still some aspects that need to be improved, such as the rate of users who "strongly agree" with each criterion is still not absolute.

Providers need to continue to make efforts to improve the quality of service, by listening to user feedback, improving the interface and features, and strengthening the security system to build trust. Thus, e-wallets will be increasingly appreciated by users for their ease of use and become the preferred choice in financial transactions.

Social Influence

The data shows that users' intention to use e-wallets is significantly influenced by social factors such as family, friends, colleagues, media and observing people around them. The decision to use e-wallets is not only personal but also influenced by social networks. Family and friends also influence the decision to use e-wallets but are not the most important factors. According to the survey, colleagues and media play an important role in raising awareness and promoting participation. Observing people around them using e-wallets helps shape social norms and promotes acceptance of this service. Service providers need to understand these factors to design appropriate marketing and communication strategies, thereby promoting the sustainable development of digital payment services.

Use marketing strategies that focus on family, friends and colleagues, encouraging them to share positive experiences with e-wallets. Invest in multi-channel communications campaigns to raise awareness and build trust in the community. Ensure that every interaction with the service is a positive experience to promote popularity and spread in the community. Understanding these factors will help providers design appropriate marketing and communications strategies, thereby promoting the sustainable development of digital payment services.

Perceived Credibility

First of all, the issue of user personal information security is still a major concern. Many users do not fully trust that their information will be protected when using e-wallets. This is a key issue that service providers need to pay attention to and find effective solutions to improve. Next, the issue of transaction security is also a concern. A large number of users do not feel completely safe when paying via mobile devices. This shows that it is necessary to focus on improving transaction security measures, and applying advanced technology and processes so that users feel more secure when making financial transactions on e-wallets. It can be seen that these are not two important factors that make users use e-wallets. In addition, accuracy and ease of transaction are also significant concerns. Many users believe that these are two factors that they agree are really effective, but there is still a large number of users who do not fully trust this aspect.

Improving user experience, optimizing the interface and usage process, and providing adequate guidance and support will help build user confidence in the ease of use of e-wallets. E-wallet service providers need to focus on solving security, transaction safety, accuracy and ease of use issues to build solid user confidence. Continuous improvement in these aspects will promote the sustainable development of e-wallet services and bring long-term benefits to both users and providers.

Perceived Costs

The use of e-wallets is not considered too costly in terms of equipment costs. This is an important factor because it shows that e-wallets can be accessed by many users with different income levels and payment capabilities. This contributes to expanding the scope of application and popularizing e-wallets in society. Next, the cost of an internet connection is also noteworthy but is not considered too high in terms of using e-wallets. Because it not only serves online transactions, the Internet also supports many other activities. Therefore, using the Internet to pay via e-wallets is not considered a significant additional cost compared to other normal Internet usage needs. More importantly, most users are not too worried about the cost of using e-wallets and think that this cost is quite reasonable. This shows users' trust and acceptance of this form of digital payment. However, there are still some people, not many, who think that the cost of using e-wallets can still be a barrier and they are willing to look for other services if the cost is too high.

Overall, the analysis shows that e-wallets are gradually becoming popular and are no longer considered an overly expensive payment tool. In order to meet the needs and affordability of the majority of users, providers can have discount campaigns and gifts to attract more users.

Mobility

The survey results from the author show many positive aspects of the convenience and flexibility of these services. The majority of users feel convenient when they can use e-wallets anytime and anywhere. This is in line with the increasing demand of consumers who want to access financial services quickly and flexibly. Especially in today's context, when non-cash payment methods are increasingly popular, e-wallets become useful and convenient tools. In addition, another important factor emphasized by users is the mobility of e-wallets. The majority of survey participants said that they always carry their mobile devices, so using e-wallets becomes very convenient and suitable for their lifestyle.

However, the survey results also pointed out some limitations and not entirely positive feedback from users. E-wallet service providers need to constantly strive to improve user experience, expand network coverage, and provide seamless data packages so that people can use them anywhere, anytime they need.

Variety of services

E-wallet users reported that although they admit that e-wallets have many services and meet most of their needs, they are still not very attractive. In the competitive era in recent years, e-wallets are developing their own fields and diversifying services as much as possible, so there may be omissions in the customer experience. Meeting customer needs is an important factor to develop, but it is also necessary to pay attention to the user experience journey.

Service providers should closely monitor the spending habits, frequent shopping/entertainment locations, emerging merchant preferences, and key occasions of the target audience. Leveraging these insights, providers can strategically expand their service offerings and partner network. Additionally, they must prioritize enhancing the interface and user experience to drive greater adoption and engagement.

5.2 Validity and Reliability

Both primary and secondary sources are used to collect data and information for the construction of the thesis. The data are referenced and cited from reliable sources such as books, reports, and journals. The primary source is collected by the author from survey responses, the results are carefully compiled and evaluated by the author. Therefore, the results are real and reliable. However, this thesis still has limitations, the scale of data collection of the primary source is a small sample, and cannot replace the entire Vietnamese market.

5.3 Suggestions for Further Research

This thesis does not provide data for e-wallet providers to use directly in their product and service research. However, stakeholders can refer to it to come up with better campaigns. The original research purpose of this thesis was to examine which factors influence Vietnamese people's intention to use e-wallets, so if the provider or related company wants to research for a new campaign, product or service, other research such as market research, competitors, internal research should be done further. In addition, Vietnamese consumers' intentions may change in the future, this thesis cannot confirm which factors are permanent, so the future must be updated with new research.

6 Summary

The purpose of the thesis is to study the factors and aspects affecting the intention to use e-wallets of Vietnamese users. The author has raised 1 main question and 2 supporting sub-questions, the main question is "What are the factors affecting e-wallet usage behavior in Vietnam?", and the 2 sub-questions are "Are Vietnamese people gradually accepting e-wallets?" and "How to improve and develop further to increase experience and motivate customers to use e-wallets in Vietnam?". To answer these questions, the author has researched through secondary sources from electronic sources and publications and conducted surveys to collect data on Vietnamese people.

Starting from the history of past transaction methods, the author has introduced more about online transactions and e-wallets. The process of conducting the thesis as well as the research and data collection methods have been fully mentioned in the first part. In Part 2, the author introduces the concept of e-wallets and the story of e-wallets in the Covid-19 pandemic, along with the challenges that e-wallets are facing.

Part 3 will focus on the theoretical framework and 7 factors affecting the intention to use e-wallet of e-wallet users, including Perceived usefulness, Perceived Ease of Use, Social Influence, Perceived Credibility, Perceived Costs, Mobility, and Variety of services. This part will also analyze in detail the research method, and data collection that the author mentioned in Part 1, and talk about the approach used in the thesis.

In the final part, the author will synthesize all the information and research data to evaluate and consider the intention to use e-wallets for Vietnamese people. The survey results were obtained from 121 participants in 3 regions of North, Middle, and South Vietnam and information from secondary sources supported the author to answer the 3 questions raised in Part 1.

For future research, researchers should consider other factors not explored in this thesis or research based on new data.

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APPENDICES

Survey Questionnaire

In Vietnamese:

Part 1:

1. Bạn đã từng nghe/biết về Ví Điện Tử chưa? *

- Có
- Không

2. Bạn có đã/đang sử dụng Ví Điện Tử không? *

- Có (tiếp tục khảo sát Phần 2)
- Không (Dừng khảo sát)

3. Giới tính của bạn là gì? *

- Nam
- Nữ
- Mục khác: _____

4. Độ Tuổi của bạn là gì? *

- Dưới 18
- 18-22
- 23-29
- 30-39
- trên 39

5. Nghề nghiệp của bạn là gì? *

- Học sinh/ Sinh viên
 - Việc Full-time/ Part-time
 - Làm việc tự do
 - Tự kinh doanh
 - Khác
-

6. Thu nhập hàng tháng của bạn *

- Dưới 10 triệu
 - 10-15 triệu
 - 15-20 triệu
 - Trên 20 triệu
-

7. Khu vực bạn ở *

- Miền Bắc
- Miền Trung
- Miền Nam

8. Bạn sử dụng ví điện tử được bao lâu rồi?

- 6 tháng- 1 năm
 - 1-3 năm
 - 3-5 năm
 - Trên 5 năm
-

9. Bạn thường sử dụng ví điện tử để làm gì?

- Chuyển tiền
- Thanh toán hóa đơn
- Thanh toán dịch vụ (vé máy bay, vé tàu, mua sắm...)
- Khác

Part 2:

Vui lòng chọn mức độ đồng ý của bạn với những mệnh đề bên dưới:

- (1) Rất không đồng ý
- (2) Không đồng ý
- (3) Trung lập
- (4) Đồng ý
- (5) Rất đồng ý

1. Nhận thức sự hữu ích

	1	2	3	4	5
Sử dụng ví điện tử giúp tôi tiết kiệm thời gian	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tôi có thể thanh toán và chuyển tiền nhanh hơn khi dùng ví điện tử so với khi chưa dùng	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ví điện tử giúp tôi thực hiện giao dịch dễ dàng hơn so với trước đây	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tôi nhận được thông tin tốt hơn (dễ và nhanh hơn) khi có sự thay đổi trong tài khoản của tôi	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Nhận thức tính dễ sử dụng

	1	2	3	4	5
Ví điện tử dễ dàng sử dụng và ứng dụng	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Các tương tác để sử dụng ví điện tử không tốn thời gian/công sức	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Các tương tác với ví điện tử được hướng dẫn rất rõ ràng và dễ hiểu	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tôi có thể yêu cầu ví điện tử thực hiện một lệnh nào đó theo ý muốn của mình một cách dễ dàng	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. Chuẩn chủ quan

	1	2	3	4	5
Gia đình và bạn bè có ảnh hưởng đến quyết định sử dụng ví điện tử của tôi	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Đồng nghiệp của tôi có ảnh hưởng đến quyết định sử dụng ví điện tử của tôi	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Các phương tiện truyền thông ảnh hưởng đến quyết định sử dụng ví điện tử của tôi	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tôi thấy hầu hết mọi người xung quanh tôi đều sử dụng dịch vụ ví điện tử	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. Chi phí

	1	2	3	4	5
Tôi cảm thấy các thiết bị di động sử dụng được ví điện tử rất đắt tiền	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tôi cảm thấy chi phí kết nối (3G, wifi,...) để sử dụng ví điện tử là rất đắt tiền	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tôi cảm thấy chi phí sử dụng ví điện tử rất đắt tiền	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tôi sẽ không sử dụng ví điện tử vì chi phí của nó	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tôi thích chi tiền sử dụng các dịch vụ khác hơn dịch vụ của ví điện tử	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. Nhận thức sự tin nhiệm

	1	2	3	4	5
Tôi nghĩ rằng thông tin cá nhân sẽ được bảo mật khi sử dụng các dịch vụ ví điện tử	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tôi hoàn toàn an tâm khi thực hiện các giao dịch qua thiết bị di động	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tôi tin rằng các giao dịch qua dịch vụ ví điện tử sẽ được thực hiện chính xác	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tôi tin rằng các giao dịch ví điện tử sẽ diễn ra dễ dàng	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. Sự đa dạng dịch vụ

	1	2	3	Cột 4	5
Các ví điện tử hiện nay rất hấp dẫn tôi	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Có rất nhiều ví điện tử đáp ứng được nhu cầu tôi cần	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Các dịch vụ ví điện tử hiện nay đạt mức mong đợi của tôi	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. Tính linh hoạt

	1	2	3	4	5
Tôi có thể sử dụng ví điện tử bất kỳ lúc nào	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tôi có thể sử dụng ví điện tử bất cứ nơi đâu	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ví điện tử rất phù hợp với tôi vì tôi luôn mang thiết bị di động bên cạnh	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. Ý định sử dụng

	1	2	3	4	5
Khi có điều kiện thích hợp (khả năng tài chính, giá dịch vụ, yêu cầu công việc...) tôi sẽ sử dụng ví điện tử	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tôi tin rằng tôi sẽ sử dụng/tiếp tục sử dụng ví điện tử	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tôi sẽ sử dụng nhiều dịch vụ của ví điện tử hơn trong tương lai	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tôi sẽ giới thiệu cho những người khác về ví điện tử	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

In English:

Part 1:

1. Have you ever heard/know about E-Wallet?

Yes

No

2. Have you used/are you using E-Wallet?

Yes (continue to survey Part 2)

No (Stop survey)

3. What is your gender?

Male

Female

4. What is your age

Under 18

18-22

23-29

30-39

over 39

5. What is your occupation?

Student/Student

Full-time/Part-time

Freelance

Self-employed

Other

6. Your monthly income

Under 10 million

10-15 million

15-20 million

Over 20 million

7. Your area

North

Central

South

8. How long have you used e-wallet?

6 months- 1 year

1-3 years

3-5 years

Over 5 years

9. What do you usually use your e-wallet for?

Money transfer

Bill payment

Service payment (airline tickets, train tickets, shopping...)

Other

Part 2:

Please select your level of agreement with the following statements:

(1) Strongly Disagree (2) Disagree (3) Neutral (4) Agree (5) Strongly Agree

1. Perceived usefulness

Using an e-wallet saves me time

I can pay and transfer money faster when using an e-wallet than when not using one

The e-wallet makes it easier for me to make transactions than before

I get better information (easier and faster) when there is a change in my account

2. Perceived ease of use

The e-wallet is easy to use and apply

The interactions to use the e-wallet do not take time/effort

The interactions with the e-wallet are very clear and easy to understand

I can easily ask the e-wallet to perform a command according to my wishes

3. Social Influence

Family and friends influence my decision to use an e-wallet me

My colleagues influence my decision to use e-wallet

The media influences my decision to use e-wallet

I see most people around me using e-wallet services

4. Perceived Costs

I feel that mobile devices that can use e-wallets are very expensive

I feel that the cost of connection (3G, wifi, ...) to use e-wallets is very expensive

I feel that the cost of using e-wallets is very expensive

I will not use e-wallets because of their cost

I prefer to spend money on other services than e-wallet services

5. Perceived Credibility

I think that personal information will be secure when using e-wallet services

I feel completely secure when making transactions via mobile devices

I believe that transactions via e-wallet services will be performed accurately

I believe that e-wallet transactions will be easy

6. Variety of services

Current e-wallets very attractive to me

There are many e-wallets that meet my needs

Current e-wallet services meet my expectations

7. Mobility

I can use e-wallets anytime

I can use e-wallets anywhere

E-wallets are very suitable for me because I always carry my mobile device with me

8. Behavioural Intention

When there are suitable conditions (financial capacity, service price, job requirements, etc.),

I will use e-wallets

I believe that I will use/continue to use e-wallets

I will use more e-wallet services in the future

I will introduce e-wallets to others