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**A STUDY ON FACTORS INFLUENCING USERS' INTENTION TO  
USE DIGITAL WALLET: A CASE STUDY OF UNIVERSITI UTARA  
MALAYSIA (UUM)**

**By**



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**Thesis Submitted to  
Othman Yeop Abdullah Graduate School of Business,  
Universiti Utara Malaysia,  
in Fulfillment of the Requirement for the Degree of Master of Science  
(International Accounting)**



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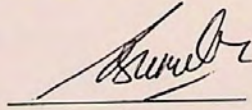
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## ABSTRACT

The digital wallet can be regarded as a kind of advanced means of payment and a new way of payment, has brought great convenience to the users. It is very important to do research into the digital wallet, in order to enhance users' to use digital wallet, which can promote the development of the new way of payment. The study is based on the theory of technology acceptance model, combined with the diffusion of innovations theory, and based on the characteristics of the actual research object. This study is constructed the user's intention model to use digital wallet, and provide some suggestions for the development of the digital wallet. A survey was distributed through e-questionnaire focuses on students and staff in UUM. A number of 374 copies of questionnaires have been returned however, only 336 valid questionnaires have been gathered after eliminating the invalid questionnaires. This study employed SPSS and SmartPLS for data analysis and verify the correctness of measurement model hypothesis. The findings of this study indicate perceived usefulness, perceived ease of use and the compatibility has significant positive influence on the intention to use digital wallet.

**Keywords:** digital wallet; technology acceptance theory; diffusion of innovations theory; intention



## ABSTRAK

Dompot digital merupakan cara pembayaran yang lebih maju dan baru yang memberikan kemudahan kepada pengguna. Adalah sangat penting untuk melaksanakan penyelidikan mengenai dompet digital, demi untuk meningkatkan bilangan pengguna menggunakan dompet digital serta mempromosikan pembangunan kaedah pembayaran baru ini. Kajian ini berdasarkan pada teori model penerimaan teknologi, digabungkan dengan teori penyebaran inovasi, berdasarkan ciri-ciri objek penyelidikan sebenar. Kajian ini membina model niat pengguna untuk menggunakan dompet digital, dan menyediakan beberapa cadangan untuk pembangunan penggunaan dompet digital. Kaji selidik dilaksanakan melalui e-questionnaire yang mengfokuskan kepada pelajar dan kakitangan di UUM. Sejumlah 374 soal selidik telah dikembalikan, walaubagaimanapun, hanya 336 soal selidik yang sah telah dikumpulkan setelah mengeneipkan soal selidik yang tidak sah. Kajian ini menggunakan SPSS dan SmartPLS untuk data analisis dan mengesahkan ketepatan hipotesis model pengukuran. Penemuan kajian ini menunjukkan kegunaan yang dirasakan, mudah digunakan dan keserasian mempunyai pengaruh positif yang signifikan terhadap niat untuk menggunakan dompet digital.

**Kata kunci:** dompet digital; teori penerimaan teknologi; teori penyebaran inovasi; niat.

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# CHAPTER 1

## INTRODUCTION

### 1.1 Background of the Study

With the rapid development of e-commerce in the world, third-party payment has become more and more occupied in the world payment market (Guo, & Bouwman, 2016). At the same time, along with the development of third-party payment, the popularity of mobile smart terminal devices such as smart phones and tablets has also made digital wallets with financial benefits and social functions integrated into the limelight. Digital wallet such as GrabPay, Google Pay, PayPal, KiplePay and others are heterogeneous wallets that are gradually leading the traditional based market (Zhou, 2010). This confirms the predictions that have been made by some organisations many years ago that the era when user no longer need to carry their wallets will arrive soon (Clemons & Madhani, 2010). Although this phenomenon is still not very clear until today. However, digital wallets provide financial benefits, shopping entertainment, and social interaction and can change the user life.

In 2016, digital wallet payments accounted for USD 2.37 trillion, as a result of the implementation of the global B2C e-commerce payment model. This

may be related to an increase in the number of Internet users in 2017, which reached 4.2 billion, an increase of 1052% compared to the year 2000 (Worldpay, 2017). Also, Figure 1 shows the comparisons of e-commerce payment methods. The data indicate that the use of credit cards and debit cards accounted for 24.4% and 17% respectively between 2016 and 2010. This concludes that the use of digital wallets increased in tandem with the increasing number of Internet users and also contributed to the percentage of global transactions business.

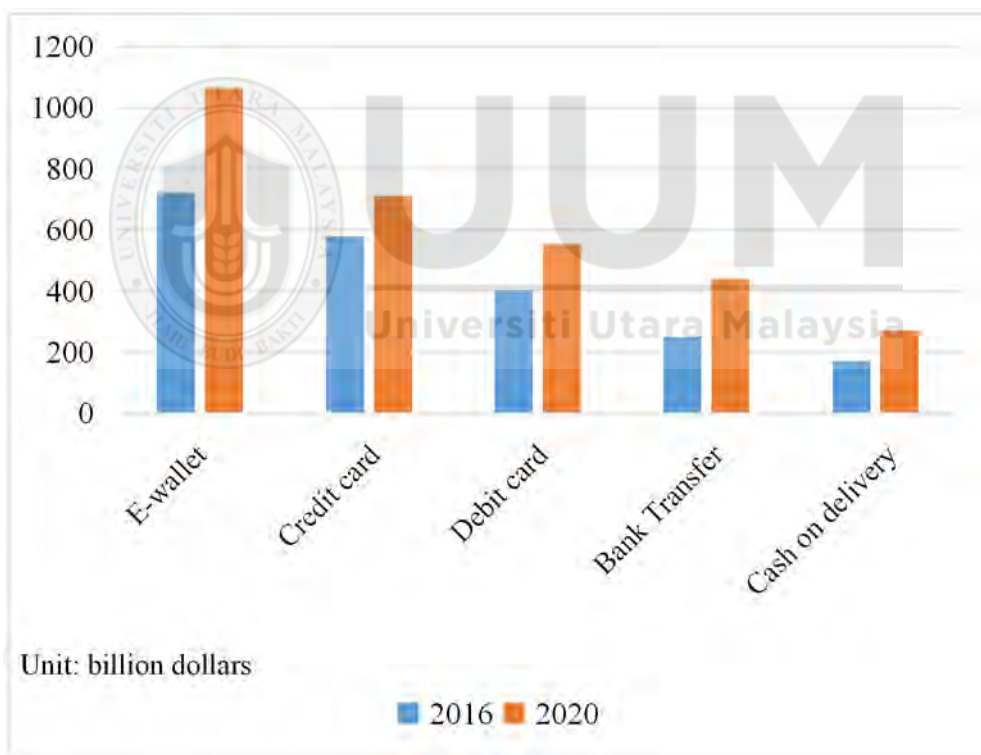


Figure 1.1  
*Payment Methods for E-commerce Transactions Between 2016 and 2020*  
 Source: Worldpay, 2017

Digital wallets generally can be divided into two types: one is pure software, most of which are bundled with bank cards, and can be directly used for

online shopping, fund account management, etc., such as Pay Pal, We Chat Pay, Google Pay. Another type of digital wallet is a platform that stored value card with a small payment function, which requires the cardholder to deposit the amount in advance so that when the transaction is made, the corresponding amount will be deducted from the account (Ramadan & Aita, 2018). However, the digital wallet that emerges today highlights some distinctive features. For example, it is not only includes some functions of the traditional wallet, but also has new features that are profitable, intelligent, and convenient, are linked together (He & Yang, 2017). In terms of payment, it cannot only achieve online consumption but also offline consumption and easy to utilise in face-to-face transactions. In terms of life service, digital wallets also add a lot of access to life services. For example, in terms of financial management income, the amount stored in the digital wallet can be used for financial management income, at any time, and the rate of return is higher than the bank's deposit interest rate at the same time (Fan, Shao, Li & Huang, 2018).

Merchants can benefit from digital wallets, such as: stimulating profit growth, reducing costs, reducing change, reducing errors, increasing revenue and user base, and having user data (Aloysius, Hoehle & Venkatesh, 2016). For users, using a digital wallet can reduce the burden on the wallet. Traditional wallets need to be loaded with cash, credit cards, savings cards,

ID cards and coupons. But digital wallets can include all of these functions. Moreover, e-money is easier to manufacture and maintain than real money, and to some extent, it can save the central bank's spending on real money (Zhou, 2014). It is expected that digital wallets in mobile phones will replace all kinds of cards, cash, etc. in the wallet in the future. Ultimately, the existence of banknotes will no longer be necessary.

## **1.2 Problem Statement**

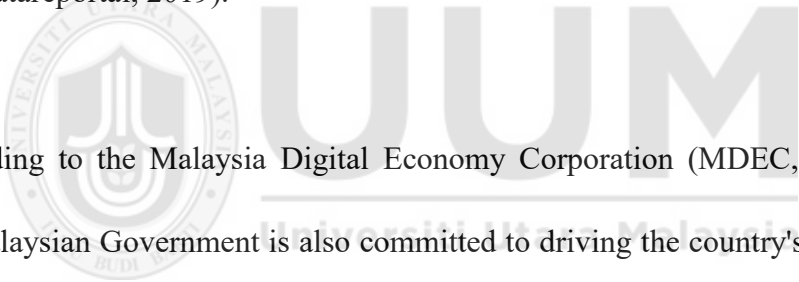
Today, technology has become a part of our lives. The use of the Internet is inevitable, not only for communication but also encompasses all aspects of human life, including daily business transactions (Madan & Yadav, 2016). Digital wallet has gradually replaced the way of the traditional way of business transaction (Ghezzi, Renga, & Pescetto, 2010) and therefore this dynamic business environment needs to be adapted not only by business but also by society in line with rapidly changing technology (Clemons & Madhani, 2010).

Malaysia is not left behind in adapting digital wallets among its user. E-commerce-based businesses such as Lelong.com, AirAsia, eBay and iPay88 have resulted in the rapid growth of e-commerce in the country. Malaysia is considered as one of the fastest growing e-commerce markets in



Southeast Asia (CAMIA, 2019).

According to a report by Datareportal in 2019, Malaysia's total population has reached 32.25 million in 2018, and the Internet users have reached 25.84 million, representing about 80% of the total population. Among of the Internet usage population in Malaysia, 66% of Internet users use mobile banking, 42% make a mobile payment, and 58% purchase items online using a mobile phone. E-commerce spending per capital reached 110 dollars in 2019, while digital wallets' share of e-commerce spends accounted for 7% (Datareportal, 2019).



According to the Malaysia Digital Economy Corporation (MDEC, 2018), the Malaysian Government is also committed to driving the country's digital economy agenda. Dato' Sri Mustapa Mohamed, former International Trade and Industry (MITI) Minister, said, "Over the years, Malaysia's digital economy has seen exponential growth". In early 2018, 58,824 online businesses had registered. Nine (9) ratios out of 10 business establishments in Malaysia is SMEs. He also pointed out that the MITI will ensure the sustainability of Malaysian SMEs and will help them be ready and equipped to venture into cross-border e-commerce (MDEC, 2018). Consequently, this has created a good opportunity in terms of policy environment and platforms for a digital wallet to be developed not only in Malaysia but also

globally.

Finance Minister Lim Guan Eng said recently that while payment transactions in Malaysia were still heavily dependent on cash usage, the government was still optimistic about achieving a vision set by Bank Negara Malaysia (BNM), a central bank of Malaysia to build a cashless society (Mohammad, 2008). BNM also plays a role in speeding up Malaysia's migration towards e-payments. Among the measures taken by BNM include providing facilities for a wider e-payment infrastructure, such as point-of-sale terminals and mobile phone banking. This effort is made to improve the efficiency of payment systems in Malaysia, particularly via e-payments. In that case, BNM strives to improve e-payment transactions with an average target of 200 transactions per person (Kamaruzaman, Handrich & Sullivan, 2010).

However, about BNM's efforts to increase the volume of electronic transactions per individual in Malaysia, only 44 transactions per person have been recorded so far (Chavosh, Halimi & Espahbodi, 2011). Although Malaysia's business has made significant progress towards cashless payments, only 8 per cent of Malaysians use digital purses, especially for recurring expenses such as phones and the internet, utility bills, car loan instalments and rentals through online banking. Thus, this indicates that the

number of user using digital wallet primarily to purchase product and services in Malaysia is very low (Cheng, Ab Hamid & Cheng, 2011) thus led to the question; why the adoption of digital wallets among user is slow? Hence, this study will explore the factors that influence the intention of an individual to use digital wallets.

Regarding as one of the new payment method in recent years, the digital wallet has an increasingly large user base. Global scholars have studied their operating modes and technology in a row. There are few studies on the intention to use digital wallets based on the theoretical basis of the TAM model (Rathore, 2016; Alaeddin, 2018; Ho & Hassanein, 2013; Shin, 2009). The TAM model is one of the most cited models by scholars over the years. It has strong applicability and can be widely used in various fields of user willingness research (Ho & Hassanein, 2013). However, there are two main research variables in this model. These two variables determine the intention of use the digital wallet and the practical application of information technology. The first variable is perceived usefulness, which is “how much a person believes that using a technology will increase his/her productivity” (Van der Heijden, 2003). The second point is perceived ease of use, which is "how much a person believes that he or she can easily master the use of technology." (Van der Heijden, 2003). Perceived usefulness and perceived ease of use are the most important factors that influence whether a person

uses technology.

DOI is a theory that seeks to explain how, why, and at what rate new ideas and technology spread. Rogers proposes that four main elements influence the spread of a new idea: the innovation itself, communication channels, time, and a social system. This process relies heavily on human capital. The innovation must be widely adopted in order to self-sustain. Within the rate of adoption, there is a point at which an innovation reaches critical mass (Rogers, 1983).

There are five characteristics of DOI. This study uses compatibility to investigate users' intentions about digital wallets. Compatibility refers to the level of compatibility that an innovation has with individuals as they assimilate it into their lives. Potential adopters need to know that your innovation will be compatible with their life and lifestyle. If an innovation requires a huge lifestyle change or if the user must acquire additional products to make your innovation work, then it is more likely to fail. Innovations meet with the greatest success when users are able to seamlessly adopt them - when they replace an existing product or idea, for the better (Kaminski, 2011).

Apple's iPad is an example of an innovation that had a high level of

compatibility with potential users' lives when released. Many users were able to replace products they were currently using when the iPad was released, such as smartphones and laptop computers to check their email, to read books, magazines and blogs and to view videos online (Kaminski, 2011).

Due to the TAM model ignores the influence of other factor on the intention, especially compatibility. If the compatibility is good, the acceptance level will be high. Therefore, the compatibility of the original TAM with the DOI is combined to evaluate and explain the behaviour of UUM students and staffs using digital wallets.

A research was done by Rathore (2016) investigate the factors the influence the intention of using are perceived usefulness and perceived ease of use by TAM. Similarly, in Shin (2009), only the perceived usefulness and perceived ease of use in the TAM model were used as factors in studying the intention of using a digital wallet. A study by Alaeddin, Rana, Zainudin & Kamarudin (2018) has applied factors such as security and perceived cost while Ho & Hassanein (2013) used TAM model with two other variables, mobility and perceived trust, as factors influencing the research of e-wallets. However, none of these studies draws attention to the influence of other factor such as compatibility.

Therefore, this study will use the TAM model to fill the gap by adopting and modifying the TAM model adds compatibility to identify factor that influence a user's intention to use a digital wallet.

### **1.3 Research Questions**

Based on the perspective of users, this study examines and explores the factors affecting the user's intention to use digital wallets. Through empirical analysis, we hope to solve the following problems:

1. Does there is a relationship between perceived usefulness and attitude toward using digital wallet among UUM students and staff?
2. Does there is a relationship between perceived ease of use and attitude toward using digital wallet among UUM student sand staff?
3. Does there is a relationship between attitude and intention to use digital wallet among UUM students and staff?
4. Does there is a relationship between compatibility and intention to use digital wallet among UUM students and staff?

## **1.4 Research Objectives**

This study aims to identify factors influence a user's intention to use a digital wallet. Based on the above research questions, the objectives of this research are:

- 1) To examine the relationship between perceived usefulness and attitude toward using digital wallet among UUM students and staff.
- 2) To examine the relationship between perceived ease of use and attitude toward using digital wallet among UUM students and staff.
- 3) To examine the relationship between attitude and intention to use digital wallet among UUM students and staff.
- 4) To examine the relationship between compatibility and intention to use digital wallet among UUM students and staff.

## **1.5 Significance of the Study**

### **1.5.1 Practical significance**

The digital wallet mentioned in this study refers to the application applied to smart terminals such as smart phones and tablet PCs with the development of third-party online payment. The emergence of this new type of digital wallet has more impact on user's life. (Cheng, Hsu,& Lo, 2017)

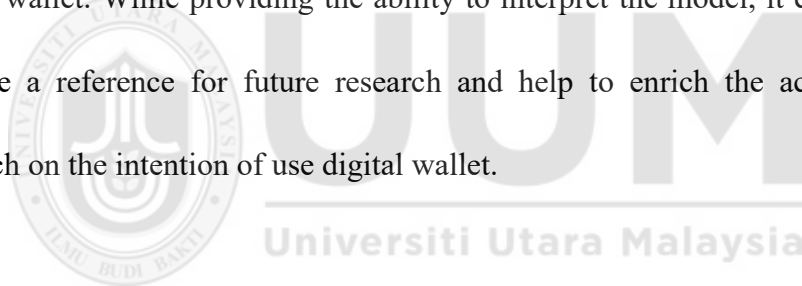
Compared with the rapid development of online payment, the emergence of this new type of digital wallet has more impact on user's payment philosophy and deposit concept. Since digital wallets rely more on the development of third-party payment, their development will inevitably be subject to some restrictions on third-party payment. More user are worried about this kind of digital wallet than online payment, making the development of digital wallet destined to be affected by various aspects.

This study focuses on the influencing factors of the intention to use the digital wallet from the perspective of users, to clarify the development and deficiencies of digital wallets, further clarify the needs of users, enhance the promotion factors, and improve obstruction factor, better serve users. Academic research on the factors affecting the intention of using digital wallet can also provide a reference for the future development of the industry.

### 1.5.2 Theoretical significance



Due to the late appearance of such new type of digital wallets, we have not studied much in this area. Therefore, this paper has a good reference for the research of emerging digital wallet. The TAM is recognized and accurate in explaining and predicting the user's acceptance of the system. In practical applications, the TAM has also been fully affirmed. DOI also used to study user behavior. This paper chooses the TAM as the basic framework, combining compatibility in DOI theory as another factor to build the new framework, and further explores the factors affecting the intention of use digital wallet. While providing the ability to interpret the model, it can also provide a reference for future research and help to enrich the academic research on the intention of use digital wallet.



### **1.6 Scope of Study**

According to MDEC (2018) from the perspective of age distribution characteristics, the users of digital payment services are mainly between the ages of 18 and 34, and the level of education is generally higher, mainly based on undergraduate education; users are mainly low-income and middle-income people; and monthly consumption expenditures are significantly related to their monthly income, most of which are users with monthly personal consumption expenditures of RM501-1500. Therefore, the

young group is the main force of the new mobile Internet business such as mobile payment services. Therefore, university students are the most representative samples. For the convenience of research, UUM students are selected as research samples. However, in order not to cause deviations in the results, UUM staff was selected as a sample for investigation. To make the sample results more stable, reliable and representative. Therefore, the scope of the study was determined to be UUM students and staffs.

### **1.7 Operational Definitions**

The term operational definition refers to a precise statement of how a conceptual variable is turned into a measured variable. Research can only proceed once an adequate operational definition has been defined. In some cases the conceptual variable may be too vague to be operationalized, and in other cases the variable cannot be operationalized because the appropriate technology has not been developed. Table 1.2 lists some potential operational definitions of conceptual variables that have been used in intention research.

Table 1.1:  
*Operational Definitions*

<b>Variable</b>	<b>Operational Definitions</b>	<b>Source</b>
Perceived usefulness	The degree to which a person believes that using a particular system would enhance his or her job performance	Davis (1989)
Perceived ease of use	The degree to which a person believes that using a particular system would be free of effort	Davis (1989)
Compatibility	The degree to which the innovation is perceived as being consistent with existing values, past experiences, and needs of potential adopters	Rogers (1983)

## 1.8 Organization of The Chapter

Chapter 1: Introduction. This chapter mainly introduces the research background, research problems and objectives, research significance, scope, definitions and organization of this paper.

Chapter 2: Relevant theory and literature review. Through the relevant theories about the factors of intention of using a digital wallet, the relevant theories are grasped. This chapter introduces the third-party payment and related concepts of such digital wallets, TAM theory, DOI etc., and literature review. Combined with the characteristics of the digital wallet, the model is constructed. It laid a theoretical foundation for the research of this paper.

Chapter 3: Research Framework. Combine with TAM and DOI to construct an intention to use digital wallet model. And establish hypotheses for this

study.

Chapter 4: Research Methodology. This chapter mainly introduces the design of the questionnaire used in the study, sampling, data collection method and statistical methods.

Chapter 5: Data Analysis. Based on the results of the questionnaire survey, this chapter mainly uses SPSS22.0 and SmartPLS3.0 statistical software to statistically analyze the data collected by the survey, to verify the research model and research hypothesis proposed in this paper.

Chapter 6: Conclusions and Recommendation. This chapter draws the research conclusion from the above research results, determines the influencing factors affecting the intention to use a digital wallet, proposes management suggestions in a targeted manner and put forward the study's limitations, and recommendations.

## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 Introduction

This chapter reviews systematically comb the concept and characteristics of the emerging payment method of the digital wallet, the theory of Technology Acceptance Model (TAM), and expounds the Diffusion of Innovations (DOI). On this basis, the perspective and entry point of this study is sought, and make full preparations and foundation for the establishment of the research model and the hypothesis of the research.

#### 2.2 Conceptual Background and Underlying Theory of Variables

##### 2.2.1 Concepts of Digital Wallet

Digital wallet is mainly to establish a fund payment platform. On this platform, the payer uses the platform to transfer funds to the payee. The digital wallet platform then notifies the payer, and the payee confirms the information and the commodity transaction process are completed. (Dinh, Nguyen, & Nguyen, 2018). From this process, it can be seen that the digital

wallet has played the role of credit intermediary, and has become a relatively common way of online transactions, playing an important role in the connection between merchants and banks.

Today's digital wallets originate from traditional digital wallets. However, it highlights many features that are different from traditional digital wallets. Traditional digital wallets have generalised and narrow definitions. The definition of a generalised digital wallet is not just a debit card, but mainly includes digital cash and other electronic money installed in the bank, which can be correctly assembled on mobile POS devices for consumption, or online consumption (Madan & Yadav 2016). The definition of the narrow digital wallet mainly refers to the commonly used payment tools, which are mainly used for shopping payment in daily shopping activities; traditional digital wallets are issued by specialized issuers such as cards that do not have a password and are pre-stored in cash are wallets that are commonly used when purchasing small items or purchasing small items (Phonthanakitithaworn, Sellitto & Fong, 2016). A certain amount of money can be stored in the digital wallet, such as common e-cash and e-change. Once a user makes a payment for a purchase, payment by digital wallet is generally carried out in the application.

Typically, user used digital wallet through some installed software such as

software is usually linked with bank accounts or bank card accounts; In addition, there are some smart debit card for micro-payments, the cardholder deposits a certain amount in the card in advance, and deducts the transaction amount directly from the debit card account during the transaction. The new digital wallet cannot only be used for online and offline payments, but also closely integrated with functions such as wealth management, social networking, shopping, and life services (Mohammad, 2008). Due to the rapid development of digital wallets, most of the research on digital wallets still stays in the traditional digital wallet, and there are few types of research on new digital wallets. The digital wallet mentioned in this article refers to the digital wallet APP applied to smart terminals such as smart phones and tablet PCs with the development of third-party online payment.

### 2.2.2 Concepts of Intention to Use

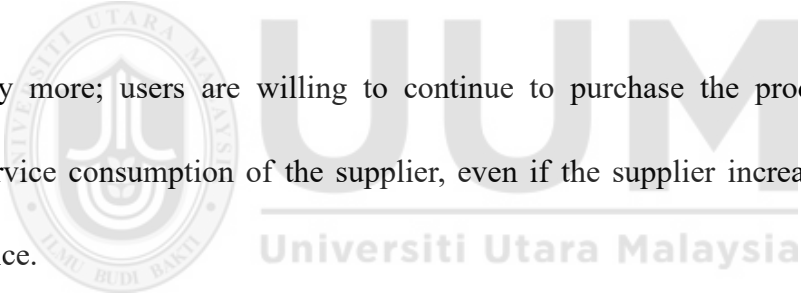
Intention to use refers to the user's psychological activity in purchasing a certain product or service. That is, the intention to adopt the product or service. Blackwell (2001) argued in the study that the intention to use refers to a clear behavioural tendency of users to take certain actions, and can also be considered as a subjective judgment on the matter to be completed, it can be a user behaviour, or it can be some behaviour that users take to know a

particular target. Zeithaml (1996) believes that intention to use has two main aspects, positive and negative. Positive intention is expressed as: When users have a positive intention to the company, there is an intangible connection between the user and the company, so that the user will feel good about the company without knowing it. There is also a greater bias, which will increase the purchase of the company's products or services, and enhance the stickiness of the company's products; Negative intention to use is expressed as: when users have a negative intention to the company, then users will have a conflict or indifference to the company's products or services. This will reduce or even not buy the company's products or services.

Research by global scholars on the intention is constantly deepening. For example, Zeithaml (1996) and Parasuraman (2016) in their articles discussed on the impact of service quality on intention. There are five dimensions of intention are proposed: the tendency to switch, loyalty, external response, internal response, and more payment.

- 1) The tendency to switch is to reduce the likelihood that a user will purchase a supplier's product or service and instead purchase a competing product;



- 2) Loyalty refers to the strength of the relationship between users and suppliers, and can also be understood as the degree of dependence of users on them;
  - 3) External response refers to the possibility that users will complain or turn to other competitors in the event of difficulties and problems;
  - 4) Internal response refers to the possibility of users complaining and reacting to the supplier's staff in the event of difficulties and problems;
  - 5) Pay more; users are willing to continue to purchase the product or service consumption of the supplier, even if the supplier increases the price.
- 

Blackwell, Miniard, and Engel (2001) divide intention into six types when studying user behaviour, and they believe that these kinds of intention are different. Specifically: shopping intentions, spending intentions, purchase intention; repurchase intentions, search intentions, and consumption intentions.

- 1) Purchase intentions represent what we think we will buy. Also, purchase intent refers to a user's intention to purchase a product, or to patronize a

service firm;

- 2) Shopping intentions indicate where we plan on making our product purchases;
- 3) Spending intentions represent how much money we think we will spend;
- 4) Repurchase intentions, which reflect whether we anticipate buying the same product or brand again;
- 5) Search intentions indicate our intentions to engage in external search;
- 6) Consumption intentions represent our intentions to engage in a particular activity.

### 2.2.3 Research on the Theory of Technology Acceptance Model

Basis on of Theory of Reasoned Action (TRA), follow-up scholars continue to explore and research and promote the development of research on user behavior. In 1989, Davis first proposed the TAM. The theory inherits the relationship between the attitude and the behavioral intention in TRA, and at

the same time adds the content of user perception, and perfects the research on the factors influencing the intention to accept information technology. The TAM simplifies the TRA and provides a general explanation for the determinants that influence the acceptance and use of information technology. The TAM believes that the user's adoption of a certain behavior is mainly affected by the following factors: external factors mainly affect the perceived usefulness and perceived ease of use, the transmission affects the attitude, and ultimately affects the behavioral intention. This affects the use of information technology. Compared with the early TRA and Theory of Planned Behaviour (TPB), the TAM can correctly explain and predict the user's behavior. However, in the TAM, the influence of subjective norms on user behavior was removed, and the attitude of use was retained. The model is shown in Figure 2.1 below:

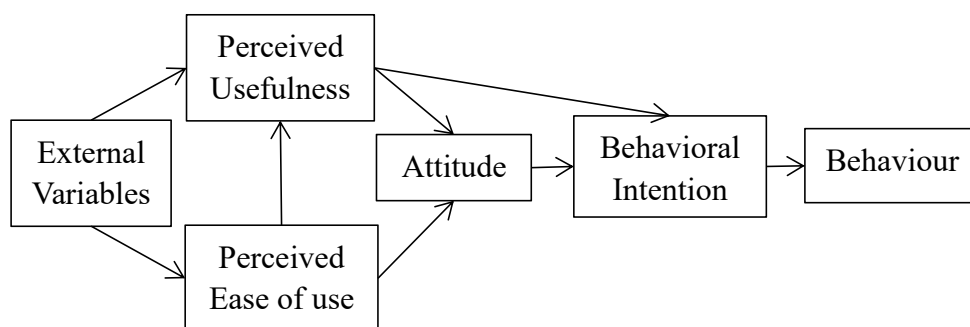
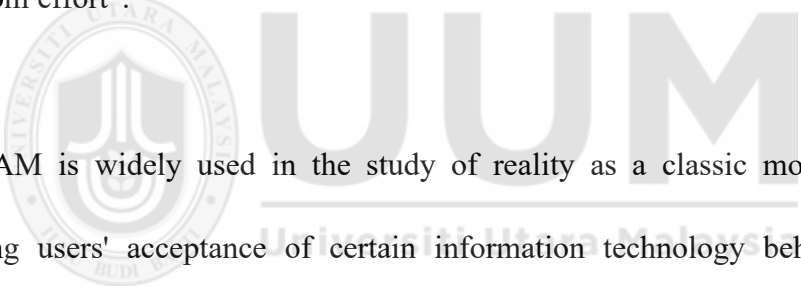


Figure 2.1.  
*Technology Acceptance Model*  
Source: Davis, 1989

The TAM believes that the user's behavior is determined by his behavioral intention, and the behavioral intention is influenced by the perceived usefulness and use attitude, while the use attitude is influenced by the perceived usefulness and perceived ease of use. Perceived ease of use also affects perceived usefulness. Davis (1989) also defines perceived usefulness and perceived ease of use. He believes that perceived usefulness refers to “the degree to which a person believes that using a particular system would enhance his or her job performance”. Perceived ease of use defined that “the degree to which a person believes that using a particular system would be free from effort”.



The TAM is widely used in the study of reality as a classic model for studying users' acceptance of certain information technology behaviors. First of all, TAM is characterized by rigour and practicability and has ability to prepare behaviors that predict users to adopt new information technologies. As a method to accurately and effectively explain the acceptance behavior of information technology users, the TAM depicts the path of external variables affecting information technology acceptance behavior through perceived usefulness and perceived ease of use to reveals the logical relationship between the various factors that influence user' behavior. In practical applications, the TAM has been fully affirmed both in terms of explanatory power and interpretation.

#### 2.2.4 Diffusion of Innovation Theory (DOI)

Rogers proposed the DOI in 1983. He believes that innovation is a new idea, a new product or a new process for the adopter, or we can also call it a new idea for the individual, which we can call innovation. Rogers argues that user innovation takes the process of expressing whether users are willing to adopt, accept, and execute new things. This process is called an innovative decision-making process.

When studying user behavior, Schiffinan & Kanuk (1994) argued that innovation adoption could be seen as a local, individual micro-view that tends to be a process for individual users to decide whether to accept innovative products; diffusion can be considered It is a general and overall macro view, which is a process to illustrate the innovation from the emergence to the gradual dissemination and promotion. Also, Rogers also believes that the diffusion of innovation is a process of communication, in which innovation is communicated among members of the entire social system through channels. In this process, independent individuals will be influenced by three aspects: the influence of others, personal innovation, and innovative features. This plays a decisive role in the individual's perception and adoption of innovative products. Individuals' psychological activities and the characteristics of their environment can have a significant

impact on such assessments.

Compatibility refers to the degree of coordination between hardware, software, or a combination of hardware and software. Subsequent research also found that compatibility has a positive correlation with user adoption behavior. Users often need to adopt a new value system to adopt innovations that are incompatible with them. In this process, users will be in conflict or not applicable. Therefore, for users, accepting their existing values and social system standards is not compatible innovation requires a process of adapting slowly.

The five factors that Rogers proposes to influence the diffusion of innovation is relative advantage, complexity, trialability, observability and compatibility.

- 1) Relative Advantage mainly refers to the user's perception of the use of an innovation.
- 2) Complexity mainly refers to the difficulty of cognition and adopting innovative methods.
- 3) Trialability refers to the extent to which an innovative approach can be

implemented and tested in a small range before use.

- 4) Observability refers to the degree to which the results of innovation can be observed and transmitted to others.
- 5) Compatibility mainly refers to the extent to which users perceive the use of digital wallets to match existing values, personal lifestyles, and user needs.

Also, Moore and Benbasat (1991) conducted in-depth research on innovative features when researching information technology innovations, and they proposed innovative features that users can perceive: including eight characteristics of relative interest, trialability, results in display, visibility, compatibility, ease of use, results presentation, visibility, image and voluntary. Also, they also mentioned in their research that the relative interests and the perceived usefulness and perceived ease of use in Davis's TAM. It is similar to the perceived ease of use in the TAM.

Kaminski (2011) argues that the diffusion of innovation is an acceptance of a new product or a new standard and is the dissemination of things of interest. By studying the origin and formation of innovation, the focus of innovation diffusion is on the process of communication of things.

Innovation is a process of innovation, and DOI is the result of an object or technological advancement.

### **2.3 Conclusion**

Through research on relevant literature, it is found that previous studies on TAM and the factors affecting users' intention, which provides an important analytical tool and theory for researching users' influence factors on the intention of digital wallets. The framework from the above-mentioned literature on the intention to use digital wallets, we can see that the TAM and the DOI are very extensive, especially based on the TAM. From credit card applications to instant chat tools to online shopping and online banking, it has been widely recognized. The results confirm that TAM can effectively explain the use of different information technology systems in different situations. Subsequent large-scale literature research is based on the original TAM. According to the specific characteristics of the research object, different variable extensions are added to study, so that the model after adding another variable is more realistic for the interpretation of the research object.

Summarizing the research of the predecessors, it is found that there are also some shortcomings, including:



First, since the explanatory variables of Davis's (1989) TAM focus on the task characteristic dimension of the TAM, there may be a possible incompatibility to different situations. Therefore, in subsequent research, scholars have different scenarios. Different research dimensions have been added, but most of these studies are mainly for the expansion of a certain dimension and lack of thinking from multiple perspectives, so this is a flaw.

Second, the digital wallet relies on the development of third-party payment and is related to the popularity of mobile terminals such as smart-phones and tablets. The development in Malaysia is very fast, but it is still in its infancy, Malaysia is less research on the intention to using a digital wallet, especially the lack of multi-dimensional scientific, systematic statistical analysis for quantitative research.

Thirdly, given the overall situation of the growth of digital wallets in Malaysia in recent years, some scholars have carried out the research, but most of these studies have stayed on the research of traditional digital wallets, along with digital wallets. The development of functional diversification has long exceeded the original concept of traditional digital wallets, and the existing research on digital wallets mostly focuses on the platform or system design of digital wallets. However, the research on the intention of users of digital wallets has not been carried out, so it is

necessary to carry out an empirical study on the intention to use a digital wallet.



## CHAPTER 3

### RESEARCH FRAMEWORK

#### 3.1 Introduction

In this chapter, through the induction and summary of previous studies, the research model of this study is constructed. At the same time, through the reading and collection of related literature, the variables involved in the model are defined, and subsequent investigations are carried out in combination with practical problems.

#### 3.2 Intention to Use Digital Wallet Model Construction

Through the review of the relevant literature review in the previous chapter, it can be derived from the TRA to the TAM, the theory of studying the relationship between attitudes and intention is getting better and better. In most cases, TAM has a universal and theoretical basis. The TAM has the characteristics of the rigorous structure, convenience and simplicity, and has very high effectiveness and high reliability. It is widely used to study the user's acceptance behavior of various information technology systems and has obtained a lot of theoretical and the support of empirical research. However, although the TAM is relatively streamlined, it ignores the

influence of different factors in different situations and reduces the explanatory ability of the model to some extent. Therefore, when using the TAM, combining the specific research objects, correcting and supplementing the influence factors such as individual important variables in other theoretical models can improve the explanatory ability and effectiveness of the model, which is the practice widely used in current research.

By studying and summarising the literature review in the previous chapter, it can be concluded that the acceptance behavior of users is significantly influenced by the DOI. According to Rogers (1983), there are five major influencing factors of DOI: relative advantage, complexity, compatibility, trialability, and observability. In the study of innovation adoption, Tornatzky and Klein (1982) concluded that there is a significant correlation between the relative advantages, compatibility, complexity in the five characteristics of DOI, but the other two are not significant. When Moore and Benbasat (1991) studied the characteristics of the DOI, it was proposed that the relative advantage was similar to the perceived usefulness in the TAM; the perceived ease of use and complexity was similar. Therefore, this study only adds compatibility as a factor affecting the intention to use a digital wallet.

### 3.3 Research Framework

Based on the classical TAM, this study combines the DOI, to establish a research model. As shown in Figure 3.1:

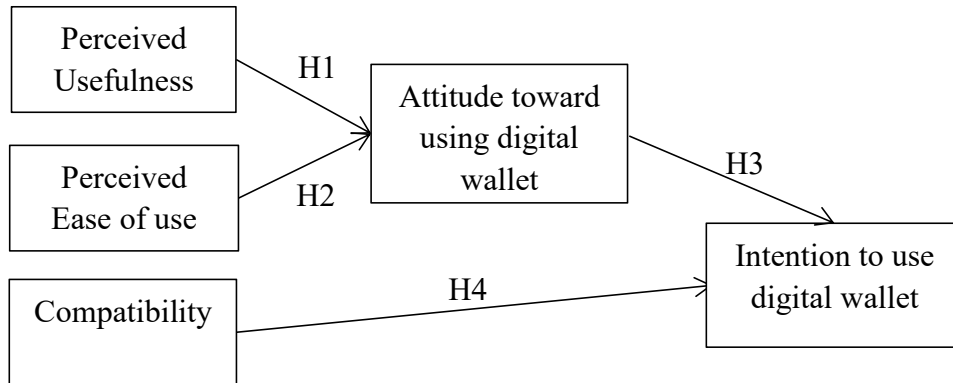


Figure 3.1:  
*The Research Framework*

In this research model, the intention to use a digital wallet is the dependent variable. Compatibility is the independent variable of the intention to use a digital wallet research model. The entire model examines the influence of compatibility, perceived usefulness, and perceived ease of use on digital wallet usage.

### **3.4 Hypotheses of Study**

#### 3.4.1 Attitude Toward Using Digital Wallet Influence Factor Hypothesis

##### 3.4.1.1 Perceived Usefulness and Attitude Toward Using Digital Wallet

Perceived usefulness is the degree to which a user perceives an individual's performance when using an information technology system. In this study, perceived usefulness refers to the usefulness that users feel about their life and work by using digital wallets. According to Davis on the TAM in 1993, the higher the performance that can be brought to users by using an information technology system, the more positive the attitude towards the use of information systems. In the study of blog usage intentions, Hsu and Lin (2008) found that in addition to knowledge sharing motivation and social influence, users' perception of the ease of use and perceived usefulness of blogs have a positive impact on attitudes. Saadé and Bahli (2005) believed that perceived usefulness was defined as the extent to which a student believed that using Internet-based learning systems would enhance his/her performance in the course. Mathwick et al., (2001) defined perceived usefulness as the extent to which a person deems a particular system to boost his or her job performance. Subsequent research by scholars such as Cao and Adeel (2018) also reached the same conclusion.

Therefore, the following hypotheses are proposed in this study:

**H1:** Perceived usefulness has a positive effect on the attitude toward using digital wallet.

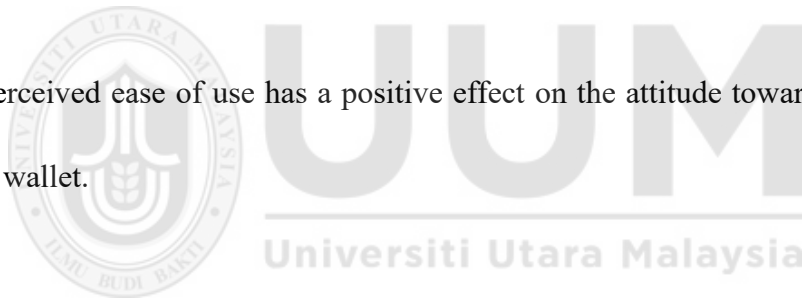
#### 3.4.1.2 Perceived Ease of Use and Attitude Toward Using Digital Wallet

Through the literature research in the previous chapter, it is found that perceived ease of use indicates how easy it is for users to learn new information technology systems. This article refers to the time, and effort users spend learning to use the digital wallet service. Davis (1989) found that when using a new information technology system, users would have a positive impact on the use of information technology systems when they need less time to achieve performance. Later, many scholars also got the same conclusion when they accepted the model. Therefore, the user's perceived ease of use of the information technology system can significantly affect the attitude towards the information system. For example, Saadé & Bahli (2005) believe that students who are more likely to use the online learning system will find it more useful and generate an attitude that they want to learn. According to Mathieson (1991), the perceived ease of use is the consumer's perception that banking on the Internet will involve a

minimum of effort. Similarly, Consult (2002) noted that perceived ease of use refers to the ability of consumers to experiment with an innovation and evaluate its benefits easily. The author also affirmed that the drivers of growth in electronic banking are determined by the perceived ease of use which is a combination of convenience provided to those with easy internet access, the availability of secure, high standard electronic banking functionality, and the necessity of banking services.

Therefore, the following hypotheses are proposed in this study:

**H2:** Perceived ease of use has a positive effect on the attitude toward using digital wallet.



### 3.4.2 Intention to Use Digital Wallet Influence Factor Hypothesis

#### 3.4.2.1 Attitude Toward Using Digital Wallet and Intention to Use Digital Wallet

The definition of attitude is whether the user likes the technology system or product and the positive or negative evaluation of the business. Previous studies have also shown that the attitude of use can have a direct impact on the intention. For example, Shih (2004), when studying the acceptance



behavior of users' online shopping, finally found that the user's attitude of use had a strong influence on the final usage intention, and the impact was positive. Fishbein and Ajzen (1977) argue that specific actions are determined by the intentions of the person taking action. To predict consumer intent, you must understand the attitude of the user. Understanding the determinants of users' attitude, it is argued that this attitude has a strong, direct, and positive effect on users' intentions to use the new technology or system (Hernandez and Mazzon, 2007). Based on the above research and the specific objects studied in this paper, the following assumptions are made:

**H3:** Attitude toward using digital wallet has a positive effect on the intention to use digital wallet.

#### 3.4.2.2 Compatibility and Intention to Use Digital Wallet

Compatibility refers to the degree to which a user is consistent with his or her original values, experience, and current needs when adopting an innovation. In this paper, it is defined as the degree to which users use digital wallets in a way that matches their original values, personal lifestyles, and user needs. When Taylor and Todd (1995) combined innovative features with TPB, they also validated the impact of compatibility on intention.

Therefore, if the company can improve the compatibility of users with digital wallets, users intention towards using digital wallet may have an impact. Brancheau and Wetherby (1987) found a strong link between comparative advantage, compatibility, and the use of spreadsheet software across multiple industries. Hoffer and Alexander (1992) also found this connection in the proliferation of database computers. Moore and Benbasat (1991) found that this contingency was also present at the end of the personal computer. Wu and Wang (2005) combine the original TAM with the concept of compatibility for DOI to evaluate and interpret consumerism in virtual stores and mobile commerce separately.

Therefore, the following hypotheses are proposed in this study:

**H4:** Compatibility has a positive effect on the intention to use digital wallets.

## **CHAPTER 4**

### **RESEARCH METHODOLOGY**

#### **4.1 Introduction**

This chapter clarifies the method of conducting this study. Proper research methods are critical to the successful completion of research projects. In this chapter, the methods, instruments and variables used are determined. In addition, this chapter also discusses the design of questionnaires, sample selection, data collection procedures, and data analysis methods. This study used a quantitative approach based on questionnaires to achieve its goals. It begins with a research framework and appropriate assumptions to study design and a convenient way to achieve research goals. This chapter then focuses on the relevant sampling techniques and selects the appropriate method and data collection procedure.

#### **4.2 Research Design**

Quantitative Research involves the use of computational, statistical, and mathematical tools to derive results. It is conclusive in its purpose as it tries to quantify the problem and understand how prevalent it is by looking for projectable results to a larger population (Patton, 1990).

On the other hand, qualitative research is generally more explorative, a type of research that is dependent on the collection of verbal, behavioral or observational data that can be interpreted subjectively. It has a wide scope and is typically used to explore the causes of potential problems that may exist. Qualitative research typically provides insights on several aspects of a marketing problem. It often either precedes or is conducted after quantitative research, depending on the study's objectives (Dey, 2003).

This study uses quantitative research rather than qualitative are typically looking to measure the extent and looking for statistical results that are interpreted objectively (Patton, 1990). Collecting numerical data from students and staffs in Universiti Utara Malaysia (UUM) and analyze the data by using statistical method SPSS software and SmartPLS. This study considers each subscriber's response as an individual data source.

In the design process of the questionnaire, to help the participants to answer the questions clearly, the questionnaire design is composed of three parts. The first part is exclusion criteria questions that mainly investigate the use of digital wallets. The second part is to formally investigate the factors influencing the user's intention to use digital wallet, from the perceived usefulness, perceived ease of use, compatibility, attitude toward using digital

wallet, etc., the specific questions for each indicator grouping and detailed separation will help the subject to better understand the questionnaire and better answer questions. The entire questionnaire was measured using Likert's five-level scale. The number 1-5 was used to investigate the user's acceptance of the situation described in the item: 1 means strongly disagree, 2 means disagree, 3 means neutral, 4 Indicates that agree and 5 strongly agree. The third part is to investigate the investigator's personal basic information, including gender, age, education, income, etc.

The measurement questions for specific variables and the corresponding references are shown in Table 4.1 below:

Table 4.1:  
*Variable Measurement*

Indicator content		Source of indicators
<i>Perceived usefulness</i>		Davis (1989)  Taylor & Todd (1995)
1	Using a digital wallet allows me to complete transactions quickly.	
2	Using a digital wallet can bring me financial convenience	
3	Using a digital wallet easy to manage funds.	
4	Using a digital wallet matches my daily payment habits.	
5	In general, digital wallets are useful to me.	
<i>Perceived ease of use</i>		Davis (1989)  Taylor & Todd (1995)
1	I found digital wallet is easy to use.	
2	For me, learning how to apply digital wallet is easy.	
3	I found it easy to become skillful in using digital wallets.	
4	I found digital wallet is convenient to use.	

Table 4.1: (Continued)

Indicator content		Source of indicators
5	Use digital wallets to avoid carrying large amounts of cash and cards.	
<i>Compatibility</i>		
1	I use a digital wallet to meet my consumer needs.	Moore & Benbasat (1991)
2	Using a digital wallet is compatible with my lifestyle.	
3	In general, I am very comfortable with the use of digital wallets.	
4	Digital wallets are widely used and can be used in many aspects of life.	Taylor & Todd (1995)
5	A digital wallet can bind multiple bankcards at the same time to achieve cross-line service.	
<i>Attitude toward using digital wallet</i>		
1	I am interested in using a digital wallet.	Davis (1989)
2	I think using a digital wallet is a wise decision.	
3	I support the use of digital wallets.	Taylor & Todd (1995)
4	In general, my evaluation of a digital wallet is positive.	
5	I think using a digital wallet is a trend.	
<i>Intention to use digital wallet</i>		
1	I am willing to use a digital wallet.	Davis (1989)
2	I will often use a digital wallet in the future.	
3	I will recommend digital wallets to others.	Taylor & Todd (1995)
4	I am willing to make a digital wallet a priority	
5	Get some offers with a digital wallet.	

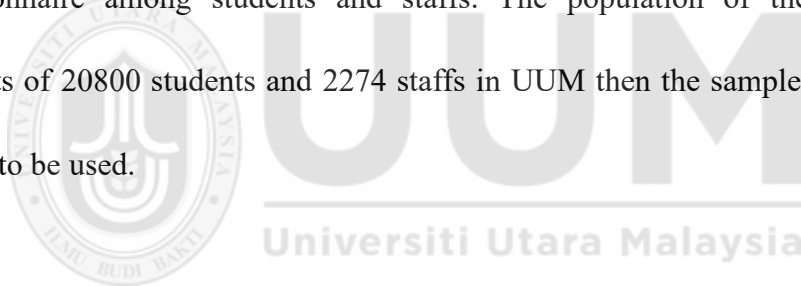
## 4.3 Sampling

### 4.3.1 Population

This study focuses on the factors influence the intention to use a digital wallet. In recent years, with the rise of mobile Internet, mobile payment has gradually integrated into user's daily life. At present, the mobile payment penetration rate is not wide enough. For many people, a digital wallet is a new technology and a new tool. Therefore, the respondents selected in this study need to have a better understanding of digital wallets, so the survey needs to select those groups that are more likely to contact new technologies than others, that is, users with higher innovation and learning ability. University students have higher academic qualifications and a strong ability to accept new technologies such as digital wallets. UUM students can be used as survey samples to better maintain the scientific and rational results of the survey. Also, to maintain the survey sample coverage, this study selected some members of the community who used digital wallets as a survey sample. In summary, UUM students have been selected as the main target group of this study. However, only selected students will have an impact on the outcome of the intend to use a digital wallet, so to make the results more accurate, UUM's staffs was selected for investigation.

#### 4.3.2 Sample size

Sample size can be referred to the number of parts to as be totaled in the study. Additionally, if a comparison between a large and small sample was made, the larger sample will offer more reliable results if compared to the smaller sample (Krejcie & Morgan, 1970). However, the population target of this study was defined as student and staff in UUM. The sample size is taken from the target population respondents, the estimation of the number of the respondents selected from the university and randomly distributed the questionnaire among students and staffs. The population of the study consists of 20800 students and 2274 staffs in UUM then the sample size of 336 is to be used.



#### 4.4 Data Collection Method

The purpose of the strategy approach is to develop better measurements. In quantitative research; preferably, samples of population targets will be promoted (Creswell 2012). Covering the maximum number of participants in the study sample will provide clear information about the study population. Usually, there is a process for data collection here, which is the main data system. The data collection method is an important part of this research, and the main data is used as the data acquisition method. Sakaran



(2013) pointed out that major data could be completed, such as telephone interviews, focus groups, face-to-face interviews and questionnaires.

In order to obtain valuable findings, it is very useful and attractive to answer research questions through data collection and analysis of correct population goals (Sakaran 2013). There are three types of data collection methods that can be used to collect data through questionnaires, which are managed by individuals, mailed to respondents, or electronically distributed. For this study, the main data was collected through electronic distribution, especially for the purpose of explaining and responding to the objectives of this study. In order to get more valid questionnaires, send a link to the group of We Chat and WhatsApp, and hope that students and staff can forward each other. Second, send links on Facebook and Instagram to get more attention.

After the completion of the revision of the questionnaire, the issuance and recovery of the questionnaire will be officially started. The questionnaire was distributed using an e-questionnaire online via Google Docs. A total of 374 questionnaires were collected, and after the invalid questionnaire was removed, 336 valid questionnaires were obtained.

This study takes the emerging digital wallet as the main research object, in order to more accurately study the factors affecting its willingness to use, in

the selection of the survey object, covering the students, staff and other groups, This will help to improve the randomness and validity of the survey sample.

#### **4.5 Statistical Methods**

After obtaining the data by issuing the questionnaire, this study used SPSS20.0 and SmartPLS 3.0 as the statistical software to analyze the data collected by the questionnaire in detail, and verified the correctness of the model hypothesis, The relationship between perceived usefulness, perceived ease of use, compatibility, attitude toward using digital wallet and intention to using digital wallet is also studied. The questionnaire firstly described the descriptive statistics, analyzed the gender, age, education level, occupation and income of the collected questionnaires, and statistics on the use of digital wallets, including the types of digital wallets used, etc. And secondly each question of the questionnaire measurement indicators was analyzed for reliability and validity running the PLS-SEM procedure, and the relationship between the variables was analyzed again. Finally, The final step is to test the hypotheses formulated for the study. The specific analysis methods of this questionnaire are as follows:

##### **4.5.1 Statistical analysis - Demographic.**

Demographic statistical analysis is a commonly used analytical method across the SPSS. It describes the structure of the survey sample and the overall sample. Specifically, this study refers to collecting and sorting the questionnaires of the digital wallet, including the age of the respondent, education, etc. and sample distribution status and percentage. Analysis of frequency and so on, of course, also includes a description of the use of digital wallets.

#### 4.5.2 Descriptive statistics

The collected data were analyzed descriptively through six variables such as maximum and minimum, variance, median, and average to indicate the level of correlation between variables

#### 4.5.3 Data analysis

The data analysis process commenced with Smart Partial Least Structural Equation Modelling PLS-SEM. Data analysis including Cronbach Alpha and Composite Reliability, and CFA for convergent validity and Average Variance Extracted (AVE) for Discriminant Analysis. The final step is running the PLS-SEM procedure to test the hypotheses Formulated for the

study. Since, this study intends to investigate causal and mediating between latent variables, Smart Partial Least Square - Structural equation modelling (PLS-SEM) was the main analysis method used (Hair, Ringle & Sarstedt, 2011).

Reliability of a survey (or scale) measurement and is a measure of stability. There are three types of general reliability indicators: stability indicators, equivalence indicators, and internal consistency indicators. Cronbach's alpha will generally increase as the inter-correlations among test items increase and is thus known as an internal consistency estimate of the reliability of test scores (Cronbach, 1951). Because inter-correlations among test items are maximized when all items measure the same construct, Cronbach's alpha is widely believed to indirectly indicate the degree to which a set of items measures a single uni-dimensional latent construct.

Cronbach's Alpha coefficient measurement used in this study is based on Table 4.2.

Validity is the degree to which the measured characteristic of the object is reflected by the difference between the observed values, that is, the degree of correlation between the measured result and the external standard. Validity analysis generally includes construct, criterion, and content validity. This study mainly uses factor analysis methods for validity analysis.

Table 4.2:  
*Cronbach 's Alpha Coefficient Evaluation Standard*

<b>Cronbach's alpha</b>	<b>Internal consistency</b>
$0.9 \leq \alpha$	Excellent
$0.8 \leq \alpha < 0.9$	Good
$0.7 \leq \alpha < 0.8$	Acceptable
$0.6 \leq \alpha < 0.7$	Questionable
$0.5 \leq \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable



## CHAPTER 5

### DATA ANALYSIS

#### 5.1 Introduction

In this chapter, through the recycling of the intention to using digital wallet the questionnaire, and the collected information is collated, using SPSS 22.0 and SmartPLS 3.0 as statistical analysis software, statistical analysis of the collected data, and the use of the final results to verify the hypotheses proposed in this study.

#### 5.2 Response Rate

In this study, a total of 374 questionnaires were collected in UUM located in the Sintok, Kedah Darulaman, Malaysia.

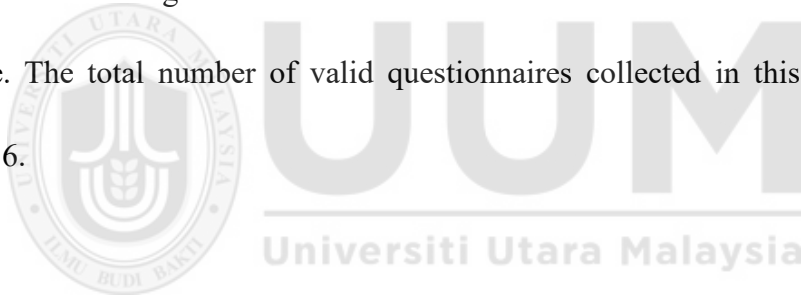
Of these 374 questionnaires, 38 were unusable because the participants did not complete a large part of the questionnaire, and the remaining 336 available questionnaires were used for further analysis. This accounted for 89.8% valid response rate, which is adequate. Table 5.1 shows the response rate of the questionnaire.

Table 5.1 :  
*Response Rate of the Questionnaire*

	Frequency	Percentage
Returned questionnaires	374	
Returned and usable questionnaires	336	
Returned and excluded questionnaires	38	
Valid response rate		89.8%

### 5.3 Basic Information Statistics

The target survey group for this study included students, staffs, and others with a wide coverage to maximize the randomness and effectiveness of the sample. The total number of valid questionnaires collected in this survey was 336.



#### 5.3.1 Statistical analysis of users basic information

Among the 336 valid questionnaires collected, the proportion of males was 41.4%, reaching 139; the proportion of females was 58.6%, reaching 197. The ratio of male to female is roughly 1:1.4. For age category, the participants of the questionnaire have a wide range of ages. The questionnaire is divided into under 20 years old, 20-29 years old, 30-39 years old, 40-49 years old, 50 years old and above. Based on the findings, the composition of the age category is as follows: 52 users under the age of

20, for 15.5% of the overall sample; 197 users aged 20-29, is about 58.6%; 55 users aged 30-39, it accounted for 16.4%; 27 users aged 40-50 represent about 8%; 5 users aged 50 and above for 1.5% among the overall participants.

For the career part, among of the users are students, which is 253 that represent 75.3% of the total participants. However, only 73 participants are UUM staff,, which represent about 21.7%; the others are 10, which is about 3%. In terms of education level, the number of participants who hold bachelor is 214, (63.7%); master's degree is 73 (21.7%); and the PhD is 42, (12.5%); the others are 7, (2.1%). In terms of income, monthly income category is the largest in the interval of less than MYR 1,000 is 154 participants, represent about 45.8% of the overall sample; 85 user have a monthly income of MYR 1,000-2,999, or 25.3%; MYR 3,000-4,999 are 49 user, for 14.6%; 32 user between MYR 5,000-7,999, for 9.5%; and 6 users or participants gained above MYR 8,000 on their monthly income, which represent about 1.8%. The details of users' basic information are as shown in Table 5.2 below:



Table 5.2:

*Statistical Table of Basic Information of Samples*

<b>Demographics</b>	<b>Categories</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Gender</b>	Female	197	58.6%
	Male	139	41.4%
<b>Age</b>	Under 20 years old	52	15.5%
	20-29 years old	197	58.6%
	30-39 years old	55	16.4%
	40-49 years old	27	8%
	Above 50 years old	5	1.5%
<b>Career</b>	Student	253	75.3%
	Staff	73	21.7%
	Other	10	3%
<b>Education level</b>	Bachelor	214	63.7%
	Master	73	21.7%
	PhD	42	12.5%
	Other	7	2.1%
<b>Monthly income</b>	Less than MYR 1,000	154	45.8%
	MYR 1,000-2,999	85	25.3%
	MYR 3,000-4,999	49	14.6%
	MYR 5,000-7,999	32	9.5%
	Above MYR 8,000	6	1.8%

### 5.3.2 Statistical analysis of digital wallet usage

For the use of the digital wallet type, the most selected is PayPal, with 78.6% of respondents. The next most is Alipay, with 67% of respondents choosing. 58.6% chose to use WeChat pay. 13.7% of users choose Kiple pay. 8.3% of other users have used other digital wallets, such as: steam wallet, grab pay, amazon wallet and etc.

In terms of the types of mobile payment services used by users, 41.4% of users chose to transfer credit card repayments; 83% of users chose online

and offline transaction payments; 72.3% of users chose life expenses, such as paying utility bills and others; 58.9% of users chose entertainment services, such as purchasing movie tickets, game recharge cards and others; 31.3% of users chose investment and financial management services.

For the use of digital wallets, users account for 73.8% of the total sample for less than one year, and 26.2% of the total sample for more than one year.

The details are as follows:

Table 5.3:

*Digital Wallet Usage Analysis Table*

<b>Characteristic variable</b>	<b>Type</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Types of digital wallet</b>	Paypal	264	78.6%
	Wechat pay	197	58.6%
	Kiple pay	46	13.7%
	Alipay	225	67%
	Other	28	8.3%
<b>Type of service using digital wallet</b>	Transfer credit card repayment	139	41.4%
	Online and offline transaction payments	279	83%
	Living expenses such as paying utility bills, etc	243	72.3%
	Entertainment such as purchasing movie tickets, game recharge cards, etc.	198	58.9%
	Investment and financial management	105	31.3%
<b>Duration of using a digital wallet</b>	Less than 1 year	248	73.8%
	More than 1 year	88	26.2%

## 5.4 Descriptive Statistics

A descriptive analysis has been conducted to describe the overall situation of perceived usefulness, perceived ease of use, compatibility, attitude toward using digital wallet and intention to using digital wallet. Table 5.4 reports the mean, standard deviation, maximum and minimum values of the constructs.

Table 5.4:  
*Descriptive Statistics*

	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Standard deviation</b>	<b>Median</b>
Perceived usefulness	336	3.000	5.000	4.295	0.410	4.400
Perceived ease of use	336	2.400	5.000	4.025	0.410	4.000
Compatibility	336	2.400	5.000	3.686	0.580	3.600
Attitude toward using digital wallet	336	2.400	4.800	3.849	0.528	4.000
Intention to using digital wallet	336	3.000	5.000	4.136	0.438	4.200

Table 5.4 shows that the lowest value of the constructs is 2.400 and the highest value is 5.000, which Likers use it as the lowest and highest levels this study. In addition, the data demonstrates that perceived usefulness has a maximum mean value of 4.295 with the standard deviation of 0.410. On the other hand, compatibility has a minimum mean value of 3.686 with the standard deviation 0.580. In general, these results indicate that the

respondents tend to exhibit high levels of perceived usefulness with digital wallets. Overall, the mean score of the constructs range is between 3.686 and 4.295. Hence, it shows that there is a moderate level of responses among users on their intention to use digital wallet.

## **5.5 Data Analysis**

Since the constructs have been determined and proper items have been adapted and modified from adopted instruments, therefore SPSS is used for preliminary analysis, especially for the study sample. And variables used to calculate variables that define the level of user perception in the study respondents. In addition, SPSS has been used to calculate the mean of each item representing the construction. For the main analysis, the PLS-SEM path modeling technique method was used. This study decided to use PLS-SEM path modeling techniques because some researchers cited it in behavioral science, marketing, and management research (Hair, Sarstedt, Ringle, & Mena, 2012). First, this technique is most appropriate when multivariate normality and interval assumptions are made. When researchers focus on the prediction of dependent variables, the data cannot be performed in the scale. Second, the PLS-SEM parameter can be used to estimate the higher intensity and direction of the relationship between variables and the correlation coefficient. It also avoids parameter estimation biases that are

common in regression analysis (Calantone, Graham, & Mintu-Wimsatt, 1998). Thirdly, PLS-SEM provides a powerful framework for predicting models with latent variables and simultaneous equation systems with measurement errors, and it has minimal requirements for sample size and typically achieves high levels of statistical power (Reinartz, Haenlein, & Henseler), 2009).

#### 5.5.1 Research Model

The original study model included 25 reflective measurement items (manifest variable or indicator) for five variables (latent variables) perceived usefulness, perceived ease of use and compatibility as independent variables, attitude toward using digital wallet as an intermediate variable of perceived usefulness and perceived ease of use, and intention to using digital wallet as dependent variable.

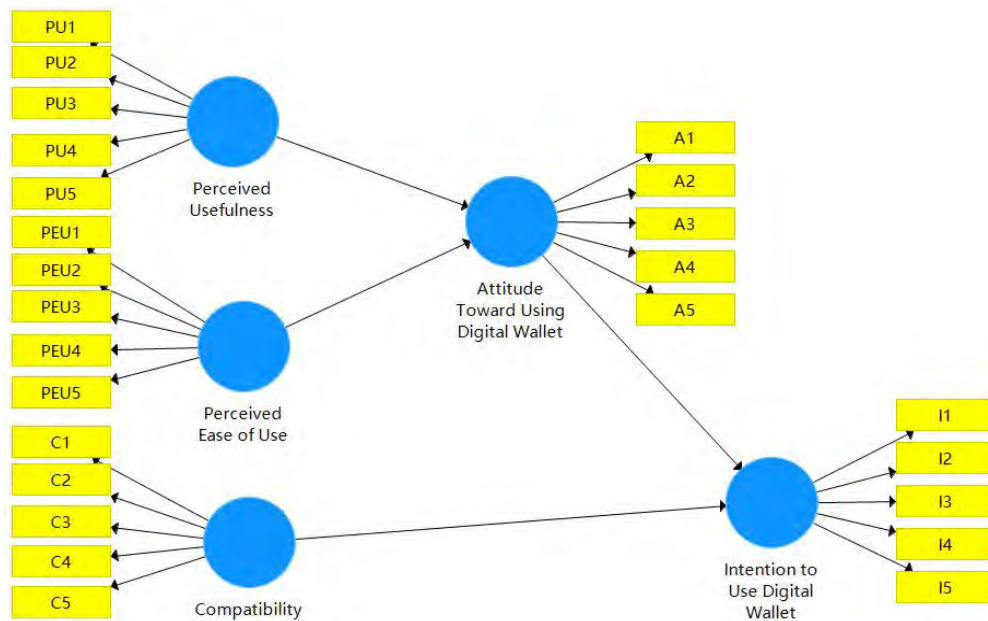


Figure 5.1:  
*The Research Model*

### 5.5.2 Assessment of Measurement Model

Based on the previous study's recommendations, the measurement model's quality in this research was evaluated by utilizing the next criteria: (i) internal consistency reliability, (ii) convergent validity, and (iii) discriminant validity for reflective and formative construct.

Figure 5.2 describes the results of the measurement model for the complete research model for the reliability and validity of the constructs, whereas the results of reflective measurement models are presented in Figure 5.2.

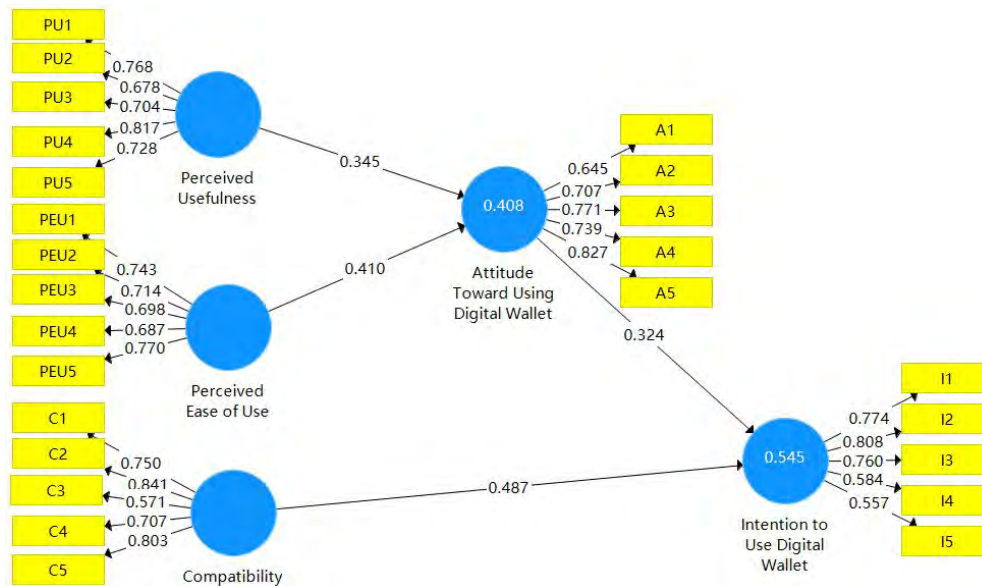


Figure 5.2:  
*The Measurement Model*

SmartPLS presents path modeling estimations not only in the Modeling Window but also in a text-based report. In the PLS-SEM diagram, there are two types of numbers:

Numbers in the circle: These show how much the variance of the latent variable is being explained by the other latent variables.

Numbers on the arrow: These are called the path coefficients. They explain how strong the effect of one variable is on another variable. The weight of different path coefficients enables us to rank their relative statistical importance.

### 5.5.2.1 Internal Consistency Reliability

Table 5.5:  
*Result of Reflective Measurement Model*

Construct	Items	Std,Loading	Cronbach's Alpha	CR	AVE
Perceived usefulness	PU1	0.768	0.796	0.858	0.549
	PU2	0.678			
	PU3	0.704			
	PU4	0.817			
	PU5	0.728			
Perceived ease of use	PEU1	0.743	0.775	0.845	0.523
	PEU2	0.714			
	PEU3	0.698			
	PEU4	0.687			
	PEU5	0.770			
Compatibility	C1	0.750	0.793	0.856	0.548
	C2	0.841			
	C3	0.571			
	C4	0.707			
	C5	0.803			
Attitude toward Using Digital Wallet	A1	0.645	0.794	0.858	0.548
	A2	0.707			
	A3	0.771			
	A4	0.739			
	A5	0.827			
Intention to Using Digital Wallet	I1	0.774	0.741	0.828	0.500
	I2	0.808			
	I3	0.760			
	I4	0.584			
	I5	0.557			

Std= Standardized; CR= Composite Reliability; AVE= Average Variance Extracted

Internal consistency reliability refers to the extent to which all items on a particular (sub) scale are measuring the same concept (Bijttebier et al., 2000). Cronbach's alpha coefficient and composite reliability coefficient are



the most commonly used estimators of the internal consistency reliability of an instrument in organizational research (Bacon, Sauer, & Young, 1995). In this study, composite reliability coefficient was chosen to ascertain the internal consistency reliability of measures adapted.

Two main reasons justified the use of composite reliability coefficient. Firstly, composite reliability coefficient provides a much less biased estimate of reliability than Cronbach's alpha coefficient because the later assumes all items contribute equally to its construct without considering the actual contribution of individual loadings. (Barclay, Higgins, & Thompson, 1995) Secondly, The composite reliability takes into account that indicators have different loadings and can be interpreted in the same way as Cronbach's  $\alpha$  (that is, no matter which particular reliability coefficient is used, an internal consistency reliability value above 0.70 is regarded as satisfactory for an adequate model, whereas a value below 0.60 indicates a lack of reliability). Cronbach's alpha may over or under-estimate the scale reliability. Nevertheless, the interpretation of internal consistency reliability using composite reliability coefficient was based on the rule of thumb provided by Bagozzi and Yi (1988) as well as Hair et al (2011), who suggest that the composite reliability coefficient should be at least 0.70 or more. As shown in Table 5.5, the composite reliability coefficient of each latent constructs ranged from 0.828 to 0.858, with each exceeding the minimum

acceptable level of 0.70, suggesting adequate internal consistency reliability of the measures used in this study (Bagozzi & Yi, 1988; Hair *et al.*, 2011).

#### 5.5.2.2 Convergent Validity

Convergent validity refers to the extent to which items truly represent the intended latent construct and indeed correlate with other measures of the same latent construct (Hair *et al.*, 2011). Convergent validity was assessed by examining the AVE of each latent construct, as suggested by Fornell and Larcker (1981). To achieve adequate convergent validity, Chin (1998) recommends that the AVE of each latent construct should be 0.50 or more. Following Chin (1998), the AVE values in Table 5.5 exhibited high loadings (>0.50) on their respective constructs, indicating adequate convergent validity.

#### 5.5.2.3 Discriminant Validity

Discriminant validity refers to the extent to which a particular latent construct is different from other latent constructs (Duarte & Raposo, 2010). In the present study, discriminant validity was ascertained using AVE, as suggested by Fornell and Larcker (1981). This was achieved by comparing the correlations among the latent constructs with square roots of AVE

(Fornell & Larcker, 1981). Additionally, discriminant validity was determined following Chin's (1998) criterion by comparing the indicator loadings with other reflective indicators in the cross loadings table. First, as a rule of thumb for evaluating discriminant validity, Fornell and Larcker (1981) suggest the use of AVE with a score of 0.50 or more. To achieve adequate discriminant validity, Fornell and Larcker (1981) further suggest that the square root of the AVE should be greater than the correlations among latent constructs. As indicated in Table 5.5, the values of the AVE range between 0.500 and 0.549, suggesting acceptable values.

In Table 5.6, the correlations among the latent constructs were compared with the square root of the average variances extracted (values in bold face). Table 5.6 also shows that the square root of the average variances extracted were all greater than the correlations among latent constructs, suggesting adequate discriminant validity (Fornell & Larcker, 1981).

Table 5.6:  
*Latent Variable Correlations and Square Roots of AVE*

	<b>A</b>	<b>C</b>	<b>I</b>	<b>PEU</b>	<b>PU</b>
<b>A</b>	<b>0.740</b>				
<b>C</b>	0.642	<b>0.740</b>			
<b>I</b>	0.637	0.695	<b>0.704</b>		
<b>PEU</b>	0.557	0.489	0.599	<b>0.723</b>	
<b>PU</b>	0.520	0.500	0.575	0.427	<b>0.741</b>

Source: Entries shown in bold face represent the square root of the average variance extracted

Discriminant validity can be ascertained by comparing the indicator loadings with cross-loadings (Chin, 1998). To achieve adequate discriminant validity, Chin (1998) suggests that all the indicator loadings should be higher than the cross-loadings. Table 5.7 compares the indicator loadings with other reflective indicators. All indicator loadings were greater than the cross loadings, suggesting adequate discriminant validity for further analysis.

Table 5.7:  
*Cross Loading*

	<b>PU</b>	<b>PEU</b>	<b>C</b>	<b>A</b>	<b>I</b>
PU1	<b>0.768</b>	0.276	0.373	0.408	0.391
PU2	<b>0.678</b>	0.205	0.279	0.318	0.316
PU3	<b>0.704</b>	0.284	0.330	0.340	0.398
PU4	<b>0.817</b>	0.468	0.461	0.499	0.554
PU5	<b>0.728</b>	0.293	0.375	0.313	0.435
PEU1	0.396	<b>0.743</b>	0.602	0.496	0.555
PEU2	0.257	<b>0.714</b>	0.237	0.370	0.291
PEU3	0.277	<b>0.698</b>	0.154	0.360	0.369
PEU4	0.252	<b>0.687</b>	0.307	0.306	0.488
PEU5	0.325	<b>0.770</b>	0.376	0.437	0.440
C1	0.310	0.418	<b>0.750</b>	0.326	0.483
C2	0.472	0.387	<b>0.841</b>	0.608	0.706
C3	0.234	0.204	<b>0.571</b>	0.495	0.289
C4	0.424	0.389	<b>0.707</b>	0.460	0.531
C5	0.333	0.372	<b>0.803</b>	0.482	0.426
A1	0.287	0.350	0.400	<b>0.645</b>	0.286
A2	0.441	0.447	0.456	<b>0.707</b>	0.501
A3	0.409	0.370	0.480	<b>0.771</b>	0.569
A4	0.371	0.415	0.511	<b>0.739</b>	0.359
A5	0.391	0.415	0.526	<b>0.827</b>	0.555
I1	0.470	0.384	0.502	0.345	<b>0.821</b>
I2	0.423	0.593	0.596	0.581	<b>0.804</b>
I3	0.429	0.523	0.547	0.571	<b>0.708</b>
I4	0.313	0.300	0.276	0.352	<b>0.657</b>
I5	0.386	0.205	0.452	0.313	<b>0.502</b>

**NOTE:**

PU=Perceived usefulness, PEU=Perceived ease of use, C=Compatibility, A=Attitude toward using digital wallet, I=Intention to use digital wallet

5.5.3 Assessment of Significance of the Structural Model

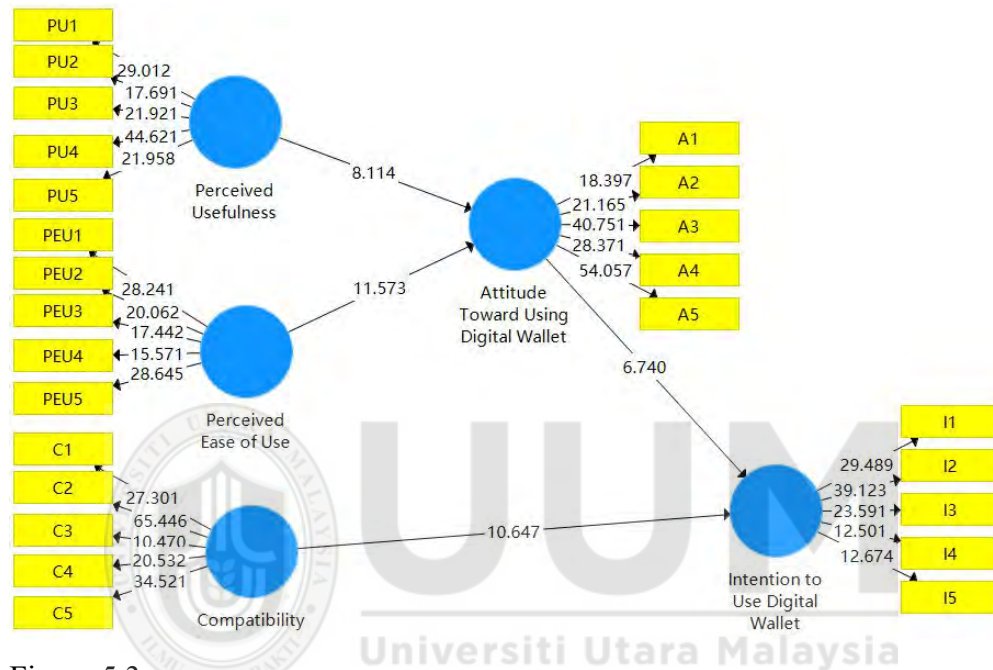


Figure 5.3:  
*The Structural Model*

Having ascertained the research model (Figure 5.1) next, the present study assessed the measurement model Figure 5.2. The present study also applied the standard bootstrapping procedure with a number of 5000 bootstrap samples and 336 cases to assess the significance of the path coefficients (Hair *et al.*, 2011, 2012; Henseler *et al.*, 2009). Figure 5.3 and Table 5.8 therefore show the estimates for the full structural model, which includes mediator variable.

Table 5.8:  
*Results of Structural Model*

<b>H</b>	<b>Result</b>	<b><math>\beta</math></b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>T Statistics</b>	<b>P Values</b>
<b>H1</b>	PU -> A	0.345	0.349	0.044	7.862	0.000
<b>H2</b>	PEU -> A	0.410	0.409	0.040	10.265	0.000
<b>H3</b>	A -> I	0.324	0.324	0.048	6.780	0.000
<b>H4</b>	C -> I	0.487	0.491	0.044	11.187	0.000

Endogenous latent variable attitude toward using digital wallet:  $R^2=0.408$  and intention to using digital wallet:  $R^2=0.545$  from figure 5.2; Falk and Miller (1992) state the minimum level accepted for the endogenous latent variable  $R^2$  was 0.10. According to Wegner (2011),  $R^2$  values for endogenous latent variables are assessed as follows:

When  $R^2$  lies closer to 0 (or 0%), it indicates a weak level.

When  $R^2$  closer with center 50 (or 50%), it indicates a moderate level.

When  $R^2$  lies closer to 1 (or 100%), it indicates a strong level.

The tested model showed that  $R^2$  value was 0.408 which means that perceived usefulness, Perceived ease of use account 40.8% of the variance of attitude toward using digital wallet. The  $R^2$  value was 0.545, which means that attitude toward using digital wallet, compatibility account 54.5% of the variance of intention to using digital wallet.

At the outset, Hypothesis 1 predicted that perceived usefulness is significantly and positively related to attitude toward using digital wallet. Result (Table 5.8) revealed a significant positive relationship between perceived usefulness and attitude toward using digital wallet ( $\beta=0.345$ ,  $t=7.862$ ,  $p=0.000$ ), supporting Hypothesis 1.

Hypotheses 2 predicted that perceived ease of use is positively related to attitude toward using digital wallet. Result (Table 5.8) indicated that perceived ease of use had a significantly and positively relationship with attitude toward using digital wallet ( $\beta=0.410$ ,  $t=10.265$ ,  $p=0.000$ ), supporting Hypotheses 2. Similarly, in examining the influence of attitude to intention to using digital wallet, result indicated that attitude toward using digital wallet had significant and positive relationship with intention to use digital wallet ( $\beta=0.324$ ,  $t=6.780$ ,  $p=0.000$ ), the result supported Hypothesis 3.

Hypotheses 4 positive relationship between compatibility and intention to using digital wallet, the result showed significant ( $\beta=0.487$ ,  $t=11.187$ ,  $p=0.000$ ), this hypothesis 4 was supported.

## 5.6 Summary of Findings

Through the above empirical research on sample data, it can be seen that perceived usefulness and perceived ease of use have a positive and significant impact on the attitude toward using digital wallet. Both attitudes toward using digital wallet and compatibility have a positive and significant impact on the intention to using digital wallet, and depending on the size of the coefficient, It can be seen that the influence degree of each factor on the intention to using digital wallet has the greatest influence on the perceived ease of use in the positive influence degree, and the influence of the attitude toward using digital wallet is the smallest.

The results of this study can show that H1, H2, H3 and H4 are all established in the hypothesis, see Table 5.9.

Table 5.9:  
*Summary of Hypotheses findings*

	<b>Statement</b>	<b>Finding</b>
H1	Perceived usefulness will positively affect the attitude toward using digital wallet of digital wallets.	Supported
H2	Perceived ease of use will positively affect the attitude toward using digital wallet of digital wallets.	Supported
H3	attitude toward using digital wallet will positively affect the intention to using digital wallet.	Supported
H4	Compatibility will positively affect the intention to using digital wallet.	Supported



## CHAPTER 6

### CONCLUSION AND RECOMMENDATION

#### 6.1 Introduction

This chapter aims to clarify reasonably the findings demonstrated in the previous chapter, particularly for the hypotheses tested. These findings will be presented according to the hypothesized relationship according to the research objectives that were exhibited in the preceding sections.

The following examined variables: perceived usefulness, perceived ease of use and compatibility are comprised in the discussion. The discussions of each variable of all findings to address the hypotheses will be covered. The discussions will also be presented in the line to the order of the research objectives in chapter one. In addition, valuable recommendations are proposed for future research, while limitations and suggestions for future studies are also highlighted. Finally, a conclusion of what the whole study entails is made to summarize the research.

## 6.2 Summary of The Study

The main purpose of this research is to consider the intention of use digital wallet from the user's point of view. Based on the TAM, combined with the DOI, and based on the characteristics of the digital wallet, then construct a model that affects the intention on use digital wallet.

## 6.3 Discussion

6.3.1 What are the significant factors (perceived usefulness, perceived ease of use) influencing attitude toward using the digital wallet?

The present study predicted that two factors are significantly influencing attitude toward using digital wallet: perceived usefulness (H1), perceived ease of use (H2). There are two paths found to support the hypotheses. Therefore, the next paragraphs these findings.

6.3.1.1 The relationship between perceived usefulness and attitude toward using digital wallet **(H1)**

Empirical evidence from this study shows that there is a significant

influence and positively relationship between the perceived usefulness and attitude toward using digital wallet. ( $\beta=0.345$ ,  $t=7.862$ ,  $p=0.000 < 0.05$ ). Thus, hypothesis H1 is supported. Accordingly, there are several past studies that have obtained similar results (Ajzen & Fishbein, 2000). These conclusions verify the correctness of the TAM. Therefore, digital wallet operators should expand mobile payment transactions, such as: paying tuition, buying a car, investing in wealth management, etc. In addition, digital wallet functions, such as automatic payment, regular payment, account analysis, etc., are required. Improve the usefulness of digital wallet, thereby enhancing attitude toward using digital wallet.

#### 6.3.1.2 The relationship between perceived ease of use and attitude toward using digital wallet (H2)

Perceived ease of use has the greatest impact on the user's attitude toward using digital wallet ( $\beta=0.410$ ,  $t=10.265$ ,  $p=0.000 < 0.05$ ). Thus, hypothesis H2 is supported. This shows that for the non-users, the biggest factor that causes them not to try to use mobile payments is the difficulty of a digital wallet. This is supported by studies from Madan & Yadav (2016) and Dong & Jin (2003). Therefore, digital wallet operators not only need to reduce the operational difficulty from the technical level, but also need to increase the propaganda, highlight the operational simplicity of mobile payment, and let

users know that the operation of a digital wallet is not difficult for online payment. Thereby enhancing the user's attitude toward using a digital wallet. Ultimately helping digital wallet operators expand into new markets.

6.3.2 What are the significant factors (attitude toward using digital wallet, compatibility) influencing intention to use digital wallet?

The present study predicted seven factors influencing intention to use digital wallet: attitude toward using a digital wallet (H3), compatibility (H4). Three paths are found to support the hypotheses: H3, H4. The subsequent paragraphs reported each result separately.

6.3.2.1 The relationship between attitude and intention to use digital wallet

**(H3)**

Empirical evidence from this study shows that there is a significantly influence and positively relationship between the users' attitude and intention to use digital wallet ( $\beta=0.324$ ,  $t=6.780$ ,  $p=0.000$ ). Thus, hypothesis H3 is supported. This result indicates that the user have high attitude to select digital wallet. This is supported by a study from Schiffman and Kanuk (1994). The results show that the respondents, (around 26.2%) have been

using digital wallet for more than one year, which means that they could encourage others to have the intention to select digital wallet to be a new payment method. This result indicates that the user have positive feelings and favorable attitudes toward the intention to use digital wallet.

#### 6.3.2.2 The relationship between compatibility and intention to use digital wallet (H4)

Compatibility has a significant impact on intention to use digital wallet. ( $\beta=0.487$ ,  $t=11.187$ ,  $p=0.000$ ). Thus, hypothesis H4 is supported. This is also supported by a study from Chavosh and Espahbodi (2011). Therefore, when implementing digital wallet, digital wallet operators, banks, and third-party payment companies should fully exploit the potential needs of users, with user experience, user habits, and user value to be a starting point, improve the compatibility of digital wallet, meet user expectations, achieve profit acquisition, and strive to improve the technical level, use the media to widely publicize the advantages of digital wallet, and strengthen the use of digital wallet as a symbol of quality life.

## **6.4 Implication of the Study**

### **6.4.1 Theoretical Implication**

The contribution of this study from the theoretical perspectives is to identify how the perceived usefulness, perceived ease of use and compatibility affects intention to use digital wallet. However, these studies contribute to the literature by examining the factors stated in the context and develop a theoretical framework that examines the relationship between the factors mentioned above with intention to use digital wallet.

The result also provides a new dimension in understanding the intention to choose digital wallet operators and its determinant. Further, the study also provides additional knowledge for the variables and how are related to the user's perception to choose digital wallet operators. As for the literature point of view, the study provides new evidence from Malaysia particularly on the variable that has not been together tested earlier.

In addition, the research regarding user's intention to use digital wallet is limited. Due to reason, this study could contribute to a research paper in Malaysia, which will come with some information for future researchers interested in carrying out a study on digital wallet industry, particularly on

digital wallet service providers. Furthermore, this study likewise helps to authorize the previous instruments concerning the intention as well as the determinants that may give an effect towards the intention. The finding benefits managers and academicians a much stronger basis for recommending strategies to ensure better understanding intention to use digital wallet.

#### 6.4.2 Practical Implication

The findings are also beneficial to the policy maker whereby the results might become feedbacks for them in formulating related policies. As for digital wallet operators, the results provide insight in to the determinant factors of users in digital wallet in Malaysia.

As mentioned earlier, predictors as perceived usefulness, perceived ease of use, compatibility has remarkable effect on intention to use digital wallet. These effects would help digital wallet providers to meet this target and fulfill their needs. In addition, the results are important to the digital wallet operators, especially in structuring their strategies to attract more users to their companies.

## 6.5 Limitations and Recommendations

Based on a broad summary of existing scholars' research theories related to digital wallets, this study combines TAM and DOI to explore perceived usefulness, perceived ease of use and compatibility as factors influencing the intention of digital wallets. This study has made a preliminary discussion on the influence of the intention to use digital wallets from the perspective of theoretical analysis and empirical research and has reached some conclusions, but there are still many problems to be further explored, mainly in the following aspects:

### 6.5.1 Research perspective needs further innovation

This study combines TAM and DOI to explore perceived usefulness, perceived ease of use and compatibility as factors influencing the intention to use digital wallets. In reality, there are many factors that affect users' intentions to use digital wallets, such as cost and perceived risk. This study cannot continue to conduct more in-depth and extensive research due to limited time. Subsequent research processes should continue to expand the research perspective, incorporate more influencing factors into the research model, and conduct more in-depth empirical analysis.



### 6.5.2 Survey sample needs to be further expanded

Due to time and other factors, the survey sample was mainly based on UUM students and employees. Although college students are the main users of digital wallets, they still cannot cover all the populations. Therefore, the survey samples of this study have certain limitations. In the follow-up research process, the survey samples should be expanded to cover a wider range of users. The survey sample has a broader representation.



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## Appendix: Questionnaire

### **A STUDY ON FACTORS INFLUENCING USERS' INTENTION TO USE DIGITAL WALLET: A CASE STUDY OF UNIVERSITI UTARA MALAYSIA (UUM)**

Dear Respectable Professor, Associate Prof., Dr, Sir, Madam,

You are cordially invited to participate in my research project as part of the requirement of MSc. International Accounting. This research project is focuses on the factors influencing UUM staffs and student using digital wallets. The digital wallet refers to payment applications via third-party such as WeChat Pay, PayPal, Kipple Pay and etc., used by mobile terminals such as mobile phones and tablet computers. The survey is only used for academic purposes. Please answer all items.

Information obtained from this survey **WILL BE TREATED STRICTLY CONFIDENTIAL** and will be used solely for academic purposes. Kindly note that completing the survey takes no longer than 10 minutes. Your voluntariness, sincerity, and truthfulness in answering the survey completely are fully appreciated.

Sincerely,

Zhan Baihui

MSc (International Accounting)

Othman Yeop Graduate School (OYA)

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### SECTION A: EXCLUSION CRITERIA QUESTIONS

1. Please specify what types of digital wallet you have used before?

- Paypal
- Wechat pay
- Kiple pay
- Alipay
- other \_\_\_\_\_



2. Which services do you generally use for digital wallets?

- Transfer credit card repayment
- Online and offline transaction payments
- Living expenses such as paying utility bills, etc.
- Entertainment such as purchasing movie tickets, game recharge cards, etc.
- Investment and financial management

3. How long you have been using digital wallets?

a. ( ) < 1 Year

b. ( ) > 1 Year

c. ( ) Never

### SECTION B : SURVEY QUESTIONS

Direction: Please select the appropriate scale from 1 to 5 with 1 means Strongly Disagree, 2 means Disagree, 3 Neutral, 4 Agree and 5 Strongly Agree.

Statement		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
No	Statement	1	2	3	4	5
1	Using a digital wallet allows me to complete payment transactions quickly.					
2	Using a digital wallet can bring me financial convenience					
3	Using a digital wallet easy to manage funds.					
4	Using a digital wallet matches my daily payment habits					
5	In general, digital wallets are useful to me.					
6	I found digital wallet is easy to use					

7	For me, learning how to apply digital wallet is easy.					
8	I found it easy to become skillful in using digital wallets.					
9	I found digital wallet is convenient to use.					
10	Use digital wallets to avoid carrying large amounts of cash and cards					
11	I use a digital wallet to meet my consumer needs					
12	Using a digital wallet is compatible with my lifestyle.					
13	In general, I am very comfortable with the use of digital wallets.					
13	I am worried that the password account leakage of a digital wallet will cause property damage.					
14	Digital wallets are widely used and can be used in many aspects of life.					
15	Digital wallet can bind multiple bank cards at the same time to achieve cross-line service					
16	I am interested in using a digital wallet.					
17	I think using a digital wallet is a wise decision.					
18	I support the use of digital wallets.					
19	In general, my evaluation of digital					

	wallets is positive.					
20	I think using digital wallet is a trend.					
21	I am willing to use a digital wallet.					
22	I will often use digital wallets in the future.					
23	I will recommend digital wallets to others.					
24	I am willing to make digital wallet a priority					
25	Get some offers with a digital wallet					

### SECTION C: DEMOGRAPHIC PROFILE

Please tick (/) against the appropriate response or answer the questions with the appropriate answers.

1. Gender :  male  female
2. Age :  Under 20 years old  20-29 years old  
 30-39 years old  40-49 years old  Above 50 years old
3. Career :  student  staff  other, please state \_\_\_\_\_
4. Educational level :  Bachelor  Master  PhD  
 Other, please state \_\_\_\_\_
5. Monthly income :  less than MYR 1,000  MYR 1,000-2,999



MYR 3,000-4,999       MYR 5,000-8,000       above MYR  
8,000

**Thank you for your participation and support!**

