THE NEXT WAVE: POPULARITY OF E-WALLET??

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DECLARATION

We hereby declare that:

(1) This undergraduate FYP is the end result of our own work and that due acknowledgement has been given in the references to ALL sources of information be they printed, electronic, or personal.

(2) No portion of this FYP has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.

(3) Equal contribution has been made by each group member in completing the FYP.

(4) The word count of this research report is 18,481 words.

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E-Wallet	Electronic Wallet
POS	Point of Sale
QR	Quick Response
UPI	UnionPay International
ICTF	Interoperable Credit Transfer Framework
P2P	Person-to-person
ePIF	e-Payment Incentive Fund
MDR	Merchant Discount Rate
PCRF	Payment Card Reform Framework
TAM	Technology Acceptance Model
TRA	Theory of Reasoned Action
UTAUT	Unified Theory of Acceptance and Use of Technology
PLS-SEM	Partial Least Squares Structural Equation Modeling
U.S.	United States
ANOVA	Analysis of Variance
ITU	Intention to Use
PS	Perceived Security
PU	Perceived Usefulness
PEOU	Perceived Ease of Use
SN	Subjective Norm
PT	Perceived Trust
AVE	Average Variance Extracted
HTMT	Heterotrait-Monotrait

STDEV   Standard Deviation

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PREFACE

This study is submitted for the purpose to fulfill the requirement in pursuing the course of Bachelor of Business Administration (Hons) Banking and Finance in Universiti Tunku Abdul Rahman under supervision of Ms. Kuah Yoke Chin. Cashless transaction is still in an early stage as a new way of payment method. Malaysia have a high mobile phone penetration rate and consumers in Malaysia have become increasingly familiar with the mobile payment via E-wallet. This study targets in Kampar, Perak, Malaysia to understand the determinants of consumer's intention to use E-wallet.

In order to achieve the purpose, this study have selected five independent variables which are perceived usefulness, perceived ease of use, perceived security, perceived trust and subjective norm. This study aims to determine the relationship between the independent variable and dependent variable, which is the consumer's intention to use E-wallet.

ABSTRACT

This study was studies the relationship between perceived security, perceived usefulness, perceived ease of use, subjective norm, perceived trust and intention to use E-Wallets. The target respondents of this study were included 300 people that own E-Wallet with the sampling location at Kampar, Malaysia. To execute the five statistics results were cronbach's alpha, composite reliability, average variance extracted, discriminant validity, as well as hypothesis testing. The Partial Least Squares Structural Equation Modeling (PLS-SEM) had been conducted in this study. The results found that there were significant relationship between perceived security, perceived usefulness, perceived ease of use, subjective norm, perceived trust and intention to use E-Wallets. This study was provided the benefit to the society such as consumer of E-Wallets, developer of E-Wallets, policymaker and government of Malaysia.

CHAPTER 1: RESEARCH OVERVIEW

1.0   Introduction

Traditionally, most of the people need to bring cash when they are shopping or want to buy a certain product. This is because cash is the value that can accept by everyone. However, in this era of high technological world has introduce many systems to replace cash and one of them is Electronic Wallet (E-wallet). E-wallet is an easy and convenient payment system because it can replace with cash and some personal information.

The most famous E-wallet in Malaysia include Boost, Aeon Wallet, Grab Pay, Touch n' Go E-wallet and others. E-wallet also is an electronic wallet that holds electronic money (e-money) and provides many services such as reloads, make payments, or purchase movie tickets through using smart phone, anywhere and anytime within Malaysia. It also required consumer to provide some personal information to enjoy other services such as fund transfer.

People also use credit card to purchase goods and services because it is one of the cashless and easy payment systems. Therefore, this study wishes to find out that does E-wallet can be accepted and use by Malaysian? Based on previous researches, five determinants of intention to use E-wallet were identified for this study. They are perceived security, perceived trust, perceived usefulness, perceived ease of use, and subjective norm.

1.1 Research background

1.1.1 Overview of Electronic Wallet

Based on Tan and Eze (2010), the oldest form of payment system is called the barter system. Barter system allowed the exchange of goods and services for another. In 21st century, cheque, debit or credit card, legal tender or online transfer is used as the payment system. Moreover, in the past two decades, the use of electronic payment methods has been rising and which include smartcard, magnetic stripe card and others. As the technologies keep improving, the transition from online to mobile payment system is also improved. In Malaysia, mobile payment still growth in an early stage. In the future, every individual would be able to make transactions through their mobile devices. Thus, the mobile payment will be a new trend for every individual to make payments.

E-wallet in Malaysia was introduced soon after China in 2015. There are 44 digital payments start-ups to issue e-money through different mobile apps. The increasing of using the internet and mobile applications has raised the global awareness that technology advancement is important. However, if the technologies innovations do not meet people's expectation, it is considered as worthless. Therefore, the factors to determine the adoption on E-wallet are important. E-wallet needs to keep up to date with the latest of technology as consumer will be the ones who deciding the use of E-wallet. E-wallet that provides the best users experience will eventually dominate. Thus, for E-wallet to grow nationally, E-wallet has to improve their information infrastructures (Khairani & Subramaniam, 2019).

Lee and Khaw (2018) highlighted that Malaysia have a high mobile phone penetration rate, therefore mobile payments have no additional infrastructure costs because the use of point of sale (POS) terminals has been replace by the Quick Response (QR) code payments. Meanwhile, consumers in Malaysia have become increasingly familiar with the mobile payment via E-wallet.

1.1.1.1 Functions of an electronic wallet

An electronic wallet (E-wallet) enables users to assemble electronic commercial transactions secure and free from danger. The purpose of E-wallet is almost close with physical wallet. E-wallet contains both software and information element that allows users used in conveniently. Taghiloo, Agheli, and Rezaeinezhad (2010) found that the software offers secure and encoding of personal details and also for the genuine transaction. Regularly, the E-wallets are reserved on the client-side and simply adaptable with nearly all of digital transactions. Server-side of E-wallet is the one who designs for users and retain on its servers. The information element is primarily a database of user log in information. Shipping address, billing address, and other information are included in the information of E-wallet. This idea is to perform a means by which customer enable order selected products and services online without ever get into sensitive information and proposing it through the wireless communication, where it is endangered to theft by cyber-criminals.

E-wallet enable the users to perform transaction via mobile devices for goods and services. Based on Shin (2009) found that E-wallet accelerate

transactions between consumer to business, machine and online. Besides that, for adopting E-wallet, there is a compulsory needed of smart phone with internet connection. The payment transactions via E-wallets are extremely secure and easy. Grover and Kar (as cited in Ma & Yi, 2012) found that mobile wallet combines diverse payment plan into one application system. Bodhani (2011) found that the evidences show that boundless adoption of E-wallets possible lead to cashless societies at a later date. Dahlberg, Mallat, Ondrus, and Zmijewska (2008) had mentioned that establish of e-wallet adoption among users include convenience, cost, context, expressiveness, ease of use, network externalities, privacy, risk, social influence, security, system quality, speed of transaction, trust and usefulness. Thus, it is vital to determine consumer intention to use the E-wallet payment.

1.1.2 Trends of electronic payment system in Malaysia

The most famous E-wallet in Malaysia include Boost, GrabPay and Touch n' Go E-wallet (Nathan, 2018). Oh (2018) mentioned that Boost has 3.3 million of registered users with 50000 of touch points. Boost also supported by 10,000 cab drivers. It also promotes aggressively in marketing by giving rewards for each transaction made. Boost has cooperated with UnionPay International (UPI) in July 2018. Boost users will be able to make payment to any merchants that accept UnionPay cards. Every one out of two smartphones in Malaysia are installed with Grab. There are 120 million downloads across Southeast Asia. Recently, Grab also cooperates with Mastercard which will link a Mastercard Prepaid Card to Grab Pay (Oh, 2018). While for the Touch 'n Go E-wallet, there are 1.2 million of total registered account. Jayaseelan (2017) stated that the chief executive

officer of Touch 'n Go company said that the company want to introduce the cashless payment system deeper at the community level to enhance cashless transactions in Malaysia.

Kaur (2017), a professor of Sunway University Business School, he claimed that Malaysia will be a cashless society in five years as rural areas become more urbanized and more youths prefer to do transaction with e-payments. He found that 70% of Malaysia's population that lived in city prefer to make payment via mobile channel compare to make payment in cash. According to Financial Stability and Payment Systems Report (2017), the central bank of Malaysia has made several efforts in promoting the use of e-payments and encourages merchants and consumers to make transactions via mobile channel. The central bank of Malaysia has introduced Interoperable Credit Transfer Framework (ICTF) to ensure all customer accounts are reachable to reduce the usage of cash.

Lim (2008) highlighted that the payment systems in Malaysia is growing rapidly with the advancement in technology. Advancement in technology have improved the e-payment systems in Malaysia. Basir (2009) pointed that the acceptance of e-payment system has been increased in Malaysia during the few years. It can be noticed from the increases in the e-payment transactions volume in recent years. The evidence from Financial Stability and Payment Systems Report (2017) showed that the volume of e-payment transactions per capita in Malaysia have increased by 73.4% from 64 in 2013 to 111 in 2017 respectively. Although mobile payment is still growth in an early stage, but among the various types of e-payment system, e-money have the highest volume of transactions per capita which is 58 in 2017. Based on Figure 1.1, the transaction volumes of e-money for the network-based system have increased by 18.9% from 20.1 million in 2013 to 23.9 million in 2017.

Figure 1.1: The transaction volume of e-money for the network-based system
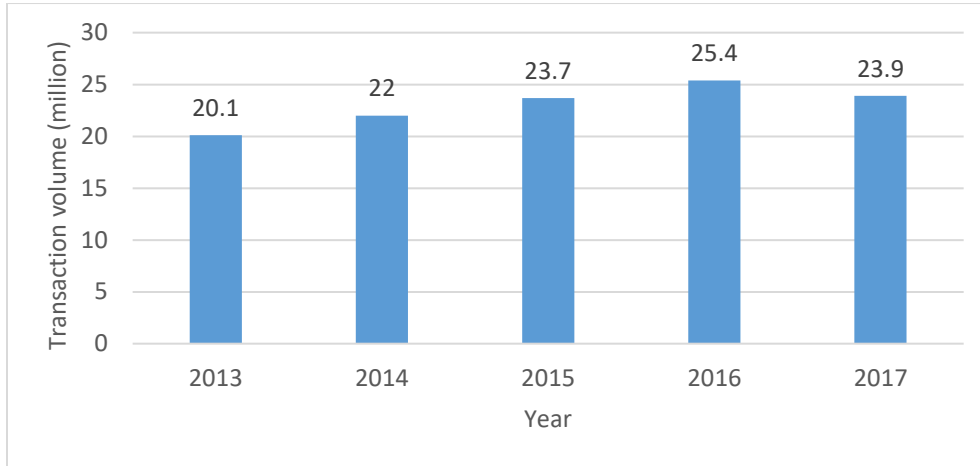
Source: (Central bank of Malaysia, 2017).

From the Financial Stability and Payment Systems Report (2017), it stated that the key enablers for Malaysia to enhance the cashless transactions include increase in the use of smartphones, willingness of consumers and merchants to accept payments via mobile device, and the increase of new entrants within the segment. Malaysia has a tremendous mobile phone penetration rate. From a total population of 32.1 million, there has 42.4 million of mobile phone subscriptions. The total number of non-bank e-money issuers had also rise from 19 issuers in 2013 to 26 issuers in 2017. The non-bank e-money issuers have provided a system via mobile applications to make payment. It included person-to-person (P2P) funds transfers and Quick Respond (QR) codes. These trends are expected to enhance the range of mobile payment offerings.

1.1.3 Development of electronic payment system in Malaysia

Lee and Khaw (2018) highlighted that there are three waves of payment system transformation in Malaysia. Figure 1.2 has shown clearly about the three waves of transformation payment systems in Malaysia. The first wave is between 2013 and 2015 where the focus area is to replace the cheques with electronic fund transfer. Price distortion between cheques and credit transfer is the challenge faced by the first wave. However, there are initiatives that done by the central bank which are Pricing Reform Framework and e-Payment Incentive Fund (ePIF). The second wave is between 2015 and 2018 where the focus area is to replace the cash with debit card. The challenges faced by the second wave are high merchant discount rate (MDR) and moderation in point-of-sale (POS) terminal growth. In order to face the challenges, the central bank has introduced Payment Card Reform Framework (PCRF). The next transformative wave is starting from 2018, the focus area is to replace cash and cheques with the mobile payment. The challenge faced by the third wave is around 12 million of adults without online banking services. However, there is an initiative that introduced by the central bank which is the Interoperable Credit Transfer Framework (ICTF).

Figure 1.2: The Bank's three waves of reform measures for Malaysia's payment systems

	1 st wave	2 nd wave	3 rd wave
	2013	2015	2018
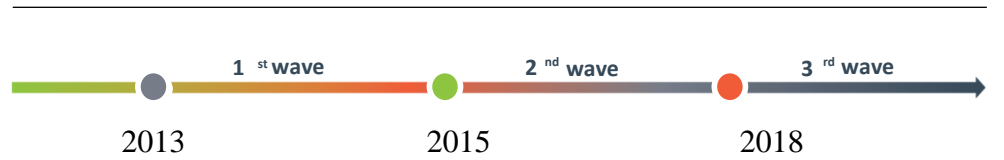
Focus Areas	Electronic fund transfers to displace cheques	Debit cards to displace cash	Mobile payment to displace cash and cheques
Challenges	Price distortion between cheques and credit transfer	High merchant discount rate and moderation in point-of-sale (POS) terminal growth	Estimated 12 mil adults without online banking services
Initiatives	Pricing Reform Framework and e-Payment Incentive Fund -IBG (max. fee: 10 sen) -Instant Transfer (max. fee: 50 sen -Introduction of cheque fees and ePIF	Payment Card Reform Framework -Ceiling for interchange fees -Establishment of Market Development Fund -Implementation of Chip and PIN	Interoperable Credit Transfer Framework -Open and fair access to shared payment infrastructure for banks and eligible non-banks -Account reachability through common identifiers -Interoperable QR scheme and common QR code -Instant Transfer transactions up to RM5k to be free of charge for individuals and SMEs

Source: (Lee & Khaw, 2018).

1.2 Problem Statement

In this world of rapid transformation in technology, cash may not be king anymore because electronic payment has been introduced and one of them is E-wallet. Now, the world even using applications installed in their smartphones for digital or online payment (Punwatkar & Verghese, 2018)**.** Basically, the function of E-wallet is same like physical wallet which keeps user's identification information and contains electronic cash that also allow user do transactions. Cheng, Hamid and Cheng (2011) highlighted that there is a marginal increase of 4.5% on the usage of E-Money in the year of 2009 compares to 11.7% in the year of 2008 in Malaysia.

Based on the information that found on Bank Negara Malaysia's official website, it stated that Malaysia is on third payment wave which means electronic payment will replace cash and cheques in the future. However, it is surprising to know that the use of E-Money among young adults are lower than expected as they should be the group of people that are heavy users of E-Money in the future (Cheng et al., 2011). Besides that, the main requirement to use E-wallet is the user must have electronic devices such as smartphones and know how to use electronic payment services. This also creates a challenge to achieve the third payment wave in Malaysia because there has estimated 12 million adults without using banking services (Lee & Khaw, 2018).

Apart from that, there is an article that written by Pikri (2017) had mentioned that there is a common problem happens in Malaysia that there are a lot of retailers, restaurants and so on not using or adopting the E-Wallet payment. Even though the trend of using E-Wallet as a way of payment transaction is increasing in Malaysia but somehow the users still not able to use E-Wallet to make transaction for purchasing goods or services if the retailers not even providing the services of E-Wallet payment.

Besides that, there was a survey conducted by PwC Research and Analysis (2018) for the quarter 2 of 2018 has raised three key concerns which one of them is the low adoption of E-Wallet in merchandise. Hence, this study had provided the information to the retailers who want to adopt E-Wallets on what reasons that attract or move the familiar customers and employees to use E-wallets as a mean of purchasing goods and services for the purpose of making the adoption of E-Wallets in Malaysia a successful one.

In the study by Koh, Tang, Vincent, Lye and Bryan (2019), it pointed that the rate of customers to adopt E-Wallet in Malaysia is slow despite Malaysia is the high potential environment for the growth of E-Wallet. This is because there are 86% internet invasion and 64% of mobile invasion rate which consider high in a country regarding to the survey which conducted by PwC Research and Analysis (2018). However, the results show that it consists only 22% of the respondents are E-Wallet users. Besides that, there is a report prepared by The Star news in 2018 also show that there is only 20% of the country total payment adopting cashless payment and with only 10% of them are from E-Wallet (Yuen, 2019).

According to the Star News in 2019, E-Wallet acts as an important element of payment to Malaysian as there is one issue that mentioned by Finance Minister Lim Guan Eng which is the corruption of a nation by using cash in circulation. This is because using cash for transaction has no paper record to that individual or the particular firm. Therefore, criminals preferred to use cash as a method to bribe. Meanwhile, the introduction of E-Wallet can help to trace the transactions and reducing the risk of money laundering (Tee & Saieed, 2019). Therefore, this is one of the reasons that government in Malaysia highly encourages the use of E-Wallet in Malaysia.

From the certain issues that have stated above, this study aims to determine which factors that gives impact for affecting the willingness to use E-wallet in Malaysia. The determinants that have choose in this study are perceived security, perceived trust, perceived usefulness, perceived ease of use and subjective norm.

1.3 Research Objective

The study focuses on the determinants that influencing an intention to use E-wallet. The theory development in this study is based on three developed theory adopted from previous studies, which namely, Technology Acceptance Model (TAM), Theory of Reasoned Action (TRA) and Unified Theory of Acceptance and Use of Technology (UTAUT). The related determinants from these theories are tested in an intention to use E-wallet. Under the TAM, the perceived usefulness and perceived ease of use are related to intention to use E-wallet. It used as factors that affect user to accept the use of E-wallet. Moreover, the subjective norm is created under the TRA. Its function is to affect the behavioral intention to use E-wallet. The perceived security and perceived trust are obtained from the unified theory of acceptance and use of technology (UTAUT). This study used the UTAUT to develop a model that how the perceived security and perceived trust influences the user adoption and user behaviour accepting E-wallet.

1. The main researches objective in this study is to determine the relationship between perceived security, perceived trust, perceived usefulness, perceived ease of use and subjective norm in an intention to use E-wallet in Kampar, Malaysia. Hence, the target respondents will be selected 310 respondents in Kampar, Malaysia.

2. To identify the relationship between perceived security and intention to use E-wallet in Malaysia?

3. To examine the relationship between perceived trust and intention to use E-wallet in Malaysia?

4. To analyse the relationship between perceived usefulness and intention to use E-wallet in Malaysia?

5. To measure the relationship between perceived ease of use and intention to use E-wallet in Malaysia?

6. To investigate the relationship between subjective norm and intention to use E-wallet in Malaysia?

1.4 Research Questions

Particularly, this study will probe the following questions:

1. Is there any relationship statistically between perceived security and intention to use E-wallet in Malaysia?

2. Is there any relationship statistically between perceived trust and intention to use E-wallet in Malaysia?

3. Is there any relationship statistically between perceived usefulness and intention to use E-wallet in Malaysia?

4. Is there any relationship statistically between perceived ease of use and intention to use E-wallet in Malaysia?

5. Is there any relationship statistically between subjective norm and intention to use E-wallet in Malaysia?

1.5 Hypothesis of the Study

Based on the previous developments of the literature, several hypotheses are developed.

H_0: Perceived security has no significant relationship with intention to use E-wallet.
H_1: Perceived security has a significant relationship with intention to use E-wallet.

H_0: Perceived trust has no significant relationship with intention to use E-wallet.
H_1: Perceived trust has a significant relationship with intention to use E-wallet.

H_0: Perceived usefulness has no significant relationship with intention to use E-wallet.
H_1: Perceived usefulness has a significant relationship with intention to use E-wallet.

H_0: Perceived ease of use has no significant relationship with intention to use E-wallet.
H_1: Perceived ease of use has a significant relationship with intention to use E-wallet.

H_0: Subjective norm has no significant relationship with intention to use E-wallet.
H_1: Subjective norm has a significant relationship with intention to use E-wallet.

Based on these hypotheses, further tested is carried out to determine whether there is an insignificant or significant relationship between perceived security, perceived trust, perceived usefulness, perceived ease of use and subjective norm with intention to use E-wallet.

1.6 Significance of the study

Nowadays, growth of electronic wallet become a global trend. Malaysia as a developing country which following the global trend as well to improve country economic growth and increase convenience of transactions. Taylor (2018) highlighted that in the United States alone, 57 percent of users (which amounts to 60 million people) have used a mobile wallet at least once. This might be one of the reasons behind of this widespread growth in electronic wallet.

Therefore, the adoption criteria of the E-wallet by consumer are important information for the company or technology department whom created the E-wallet applications. This study can provide the company or technology department to have a better understanding on how to increase the E-wallet adoption rate among the Malaysia people. Besides that, it also provided a guidance to the company or technology department that involved in the design, create and delivery of the E-wallet application or its payment system. The guideline is based on the factors of intention to use E-wallet which it helps to know well the customers' needs and preferences while they select the E-wallet. Thus, companies are able to create an E-wallet application that satisfied the consumer needs and wants.

Based on this study, it has contributed some info to government and this info can be used to formulate relevant law and regulations or policies to expedite Malaysia E-wallet

adoption. The government also can enforce the policies in term of security to enhance the level of security on the E-wallet. By increasing the level of security on the E-wallet also will increase the number of users.

Lastly, useful data also will be provided from this study to have a depth explanation about the consumer intention to adopt E-wallet in Malaysia. It also can be used as reference for the undergraduate student when they are in the same study area.

1.7 Chapter Layout

Five chapters will be involved in this study. First, chapter one will discussed on the overview of research paper which include the research background, problem, questions, objectives and continue by the significance of the study, chapter layout and conclusion respectively. The next chapter will review and discuss the relevant literature from the past research. Besides, the theoretical framework and hypotheses of study was developed in the following chapter. Chapter three will include the research design, sampling design and data collection methods. Moreover, chapter four and five were conducted for data analysis by using the Smart PLS-SEM software and discussed the implication and recommendation for this study. The reference will be added in the last part of the study.

1.8 Conclusion

This whole chapter discussed determinants that will influence intention to use the E-wallet by users in Malaysia. The next chapter will further explain on the past relevant researches and develops theoretical framework.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

Chapter two will be reviewing the past studies on the similar topic and analyse the past literatures that are consistent and in line with the research objectives that have been discussed in chapter 1. There are three main issues will be reviewed and discussed in this topic which are dependent and independent variables, theoretical framework and hypotheses development.

2.1 Theory Development

2.1.1 Theory of Acceptance Model (TAM)

The Theory of Acceptance Model (TAM) that created by Davis (1989) is a broadly applied model and it have gained the largest popularity in previous studies that focus on mobile payment sector. It aims to detect what are the factors to impact consumer intention to accept a new technology or system, mobile payment is act as new technology or system in this study. This model has including two important variables, namely perceived ease of use and

perceived usefulness. There are often acting as determinants to affect consumer to accept the use of mobile payments in previous studies and this study also.

Perceived usefulness refers to the degree to which a person trust that it would improve their tasks when they using a system, while perceived ease of use is known as the extent to which a person trust that it would be not complicated when using a system (Davis, 1989). Perceived usefulness and attitude toward using will affect the consumer behaviour intention to adopt the system and the behaviour intention will eventually detect the actual adoption of the technology or system (Yan et al, 2009).

Figure 2.1: Theory of Acceptance Model
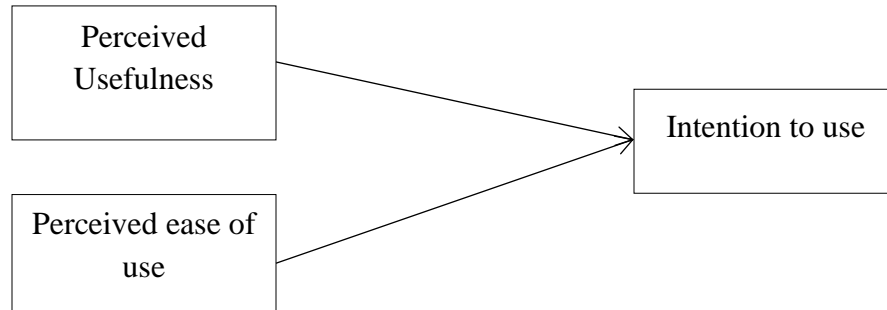
Source: (Davis, Bagozzi, & Warshaw, 1989)

2.1.2 Theory of reasoned action (TRA)

Martin Fishbein and Icek Ajzen had formed Theory of Reasoned Action (TRA) in 1975. Fishbein and Ajzen (1975) highlighted that this theory is to examine the relationship between attitudes and behaviour. The main predictor of behaviour is the behavioural intention. TRA focused on the behavioural intentions compare to attitudes. From the TRA model, it shows that the behavioural intention is determined by attitudes to perform a behaviour and subjective norms. Both of them are the most important determinants for any particular of behaviour. This theory performs most effectively when it is applied to behaviours that are under a person's self-determination. In a study conducted by Yaser, Murad, Yahya and Alina (2016), they claimed that TRA is a powerful theory to detect a broad range of behaviours. The intention to adopt a system or technology is regarding to the perceived benefits and the complexity of using the system and this can be reasonably explained by using the TRA. In short, TRA advocate that a person's beliefs will affect the attitudes and creating intentions that will generate behaviour.

Sarver (1983) mentioned that attitude to perform a behaviour is known as an individual's judgment of performing or not performing a specific action. The subjective norms mean an individual's perception to act or not to act the behaviour under the social pressure. Talukder, Quazi and Sathye (2014) revealed that attitude is a function of beliefs which mean when a people trust that acting a certain behaviour that lead to a good outcome, the person will have a positive attitude to act on the behaviour. However, when a people trust that acting a certain behaviour that lead to a bad outcome, the person will have a negative attitude to act on the behaviour.

Dillard and Shen (2002) stated that subjective norm is a function of normative beliefs which mean when an individual believes that the person whom are crucial to them think they should act on the behaviour, they will perceive social pressure to act on the behaviour. However, when an individual believes that the person whom are crucial to them think they should not act on the behaviour, they will perceive social pressure to prevent acting on the behaviour. Therefore, the perceived expectation of others and the individual's intention to carry out with those expectations are the determinants of the subjective norm.

A study from Sheppard, Hartwick and Warshaw (1988) concluded that subjective norms and attitudes are highly correlated to behavioural intention and the behaviour. There are some previous studies have used TRA to research on the consumer's adoption on mobile wallet. Phuah et al. (2018) had carry out a research study by modified TRA and TAM in their study. Another study from Aslam et al. (2017) had also applied TRA in their study. In summary, TRA is a popular model for analysing behaviour of people. Hence, TRA can be used for this study to carry out the consumer's intention to adopt an e-wallet.

Figure 2.2: Theory of Reasoned Action
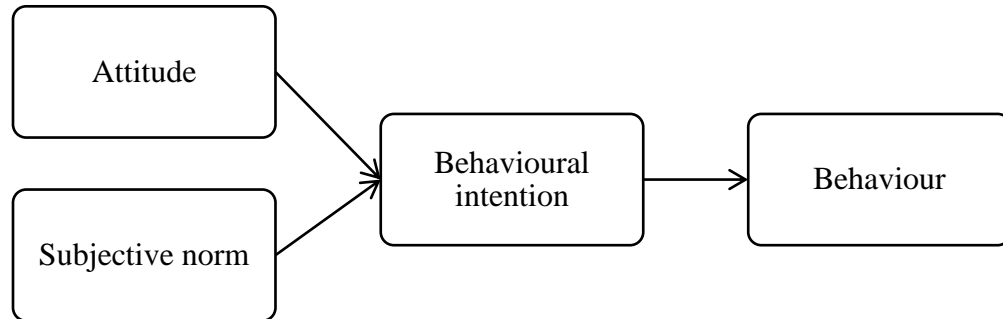
Source: (Boster, Shaw, Carpenter & Lindsey, 2014)

2.1.3 Unified theory of acceptance and use of technology (UTAUT)

Unified Theory of Acceptance and Use of Technology (UTAUT) model has been broadly applied in many studies. Based on Venkatesh, Morris, Davis, and Davis (2003), UTAUT had been developed for reviewing two determinants of this study which are perceived trust and perceived security. Integration of the constructs in UTAUT will generate a trustable and reliable model on acceptance of technology and a better explain of variances. UTAUT model able to enhance the predictive power of other models. The model bound to describe consumers' intention to adopt a system or technology.

The modification of UTAUT model allows a depth understanding of consumer adoption on mobile wallet. Despite of perceived security and perceived trust, Venkatesh et al., (2003) revealed that performance expectancy, facilitating conditions, effort expectancy and social influence are also in the line with

UTAUT models. Performance expectancy means that an individual potential gain towards their job by the use of technology. Effort expectancy is related to expected ease of use of a system. Social influence shows that a person's perceived expectations from the other people about their adoption of a system. Last, facilitating conditions show the degree to which a person believe towards existence of proper infrastructure for accepting a system.

In spite of concerns on security and privacy, there are only few studies take into consideration of these determinants. Those few studies only focus on technological aspects of security and ignore in the point of view from users' perceived security, perceived trust, and risk (Dewan & Chen, 2005). Perhaps it is crucial to explore consumers' perceived security and also consumers' privacy over e-wallets. This study investigates the determinants that affecting users' security in the mobile wallet service. It used the UTAUT to create a model that include perceived security, perceived trust and subjective norm as improving the constructs to forecast users' intention to adopt an e-wallet.

In a study conducted by Shin (2009), it confirmed that factors like perceived ease of use and usefulness are the main determinants that highly influenced perceived trust and perceived security regards to consumer adoption and consumers behaviour accepting e-wallets. Shin (2009) also pointed that perceived trust and perceived security are main determinants in user behaviour to adopt e-wallets. The study also proposed that perceived trust and perceived security are enhanced by social influence. These determinants will be applied in widen the research model.

Even UTAUT has already authorized in previously studies, it does not shows fit nicely of adapted to e-wallet. Zmijewska, Lawrence and Steele (2004a)

argued that the model is suitable used to quantify technology acceptance in companies but not in public environment. This is because some of the standards proposed to quantify 'social influence' involve help of the senior management and organizational assist for the new technology. As the mobile wallet service adopt in the daily life environment, the application of TAM able to forecast consumer adoption in this field is more proper.

Figure 2.3: Unified theory of acceptance and use of technology (UTAUT)
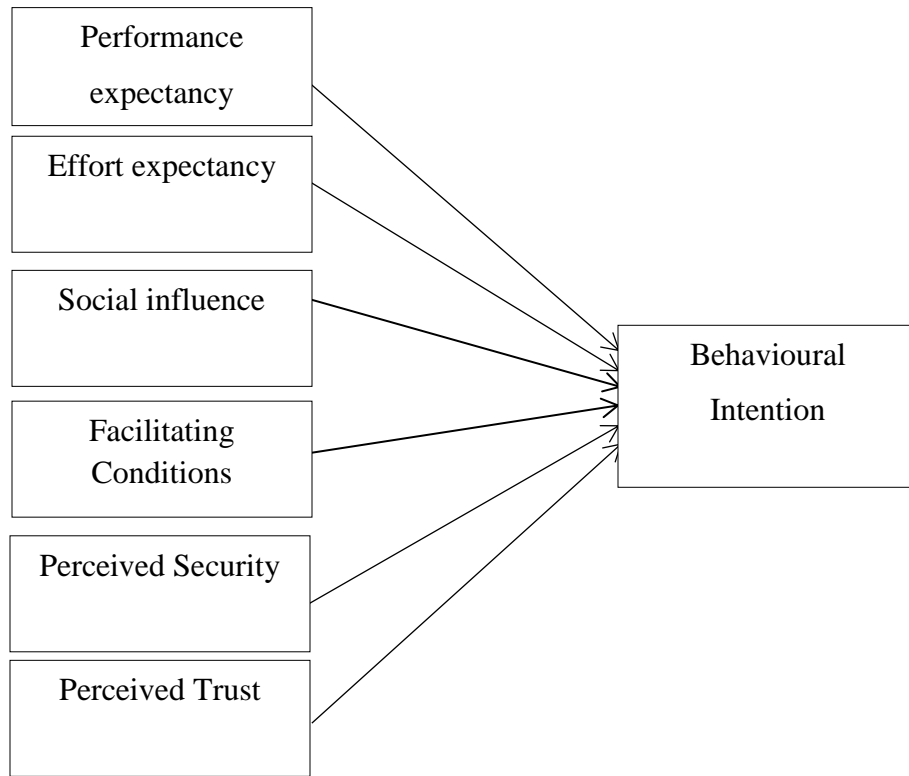
Source: (Venkatesh, Morris, Davis, & Davis, 2003)

2.2 Review of Prior Empirical Studies

2.2.1 E-Wallet

In this era of globalization, electronic devises have become one of the essential parts in our daily lives. The electronic devises include smartphone, tablet, laptop and so on. When all of these devises connected to Internet, they help to make users' lives more convenient and efficient. With the assistance of Internet, there are a lot of tasks can be performed online including payment system. In the recent years, smartphone users started to make transaction payment through the applications that downloaded in the phone. The digital instrument that is used by the users to make payment for their transactions is called as E-wallet (Punwatkar & Verghese, 2018)**.** In Amoroso and Watanabe (2012), it has cited that the payment which made by using digital devices have been categorize as electronic money which means that they are all cashless and paperless instruments to make money transactions and payment.

E-wallet is an online prepaid account that allow individual to keep cash for usage of making transactions in the future (Mohamed Ali & Vijaya Gopalan, 2018). With the assistance of E-wallet nowadays, the consumers can purchase a variety of products such as flight tickets, groceries and so on without using any credit card or debit as long as they have enough cash in the E-Wallet for their payment (Varsha & Thulasiram, 2016). Customers able to make a purchase in mere second, it is much more easier compares to the need of queuing long for making purchase of the groceries or any other stuff (Mohamed Ali & Vijaya Gopalan, 2018). E-money includes all the cashless and paperless

form of payment which replaced by cards or the money transactions via electronic channels (Punwatkar & Verghese, 2018). An E-Wallet consists of a password that set by the owner itself. The owner can shop for groceries, online purchases and so on with the help of E-Wallet. The E-Wallet also has specific components, software program and information. The software program included in the E-Wallet issue shops personal facts but it also provides security and encryption for the statistics collected. (Mohamed Ali & Vijaya Gopalan, 2018).

In conclusion, virtual cash or cashless transaction is a technology that growth fast in recent years. This cashless payment has become a well-known trend in almost every area of lives. Money has undergoing transformation over the years from valuable metals to digital or E-Money which is a formless form of money (Ambarish, Karan & Monali, 2015). The future of e-commerce has been predicted to be dependent greatly on the development and diffusion of E-Money (Ramasamy, Guru, Nair & Vaithilingam, 2006).

2.2.2 Perceived Security

Perceived security is defined which a user accepts that utilize a certain mobile payment procedure with safe and sound (Shin, 2009). The foundation of new technology in this era is always followed by perceived security concerns. When there is a processing of financial transaction, it is important for user to feel safe so that can lower down the concerns on making online transaction. Rakhi and Mala (2014) stated that service provider requires make sure a secure environment and removes these concerns in order to strengthen the user

confidence. The concern of perceived security is the main issue for unwilling to use mobile payment.

Siau and Shen (2003) highlighted that the main factor for the unwilling and slow growth rate of using the mobile payment is security risk. The concerns of perceived security and perceived trust are the main issue of barriers to the mobile payment adoption. User's private information making the buyers feels doubtful and worried thus it is an obstacle for the acceptance of e-commerce (Hoffman, Novak & Peralta, 1999). Perceived security concerns are a barrier to adopt in many payments such as in e-commerce activities. Thus, anxiety towards the perceived security of mobile payment systems exist in the midst of the main factors influence the attitudes (Shatskikh, 2013)

Patel (2016) pointed that in Ahmedabad, India, he found that perceived security has an important and negative effect on adoption on e-wallet services. Hence, the hypothesis based on perceived security is targeted whether the perceived security will have impacts on the intention to adopt an e-wallet. Besides, a study from 179 users revealed an important relationship between users perceived security in electronic commerce transactions (Chellappa & Pavlou, 2002). From these studies, it shows that perceived security is positively related on intention regarding adopt of an e-wallet. Pousttchi and Wiedemann (2007) found that the subsequent hypotheses are formulated as perceived security has a significant effect on the adoption of E-wallet**.**

Nevertheless, Kim, Mirusmonov and Lee (2010) mentioned that perceived security was not the actual factor but generate a barrier in using the mobile payment systems. In additional, the study of Alsam, Ham and Arif (2017) has stated that perceived security is an insignificant variable to influence attitude towards usage of mobile payment in Karachi, Pakistan. Besides that, Matemba

and Li (2018) stated that perceived security is a variable that bring insignificant relationship with adoption and using WeChat wallet in South Africa. Based on these previous studies, it has different result in different countries. Hence, this study will find out whether the perceived security has a relationship on consumer intention to use E-wallet.

2.2.3 Perceived Usefulness

Successfulness of introduce any new technology such as electronic payment depends on its acceptance amongst the users. In other words, the more people adopt by using this new technology in daily life can helps to rise the success rate. For example, the users can use the E-wallet apps to pay for replace the use of cash or card payment. Market can be classified according to levels of consumer adoption based on access to electronic payment methods and frequency of usage (Banktect Asia KL, 2017). E-wallet is the latest trend in the Malaysia electronic payment scene, it provided a convenience and cashless lifestyle to users (Nair, 2018). Others convenience are can made payment anytime, balance and transaction check options with one click, rewards & discount and reduced transaction time (Punwatkar & Verghese, 2018).

The perceived usefulness is useful during determined the levels of consumer adoption towards electronic payment. When the users know the usefulness of electronic payment, it can help to increase the intention of consumer adoption towards electronic payment. According to Phuah, Ting and Wong (2018) highlighted that the perceived usefulness of electronic payment has a total of 17.42% of the variance from 612 respondents in Nanjing, China. It consists of

five components which is save time, faster usage of mobile applications such as bill payment and ticket purchase, useful mode of payment, give users more choice when make payment and enable users to fulfill their daily tasks more quickly. Besides that, some past studies are mentioned that perceived ease of use has a huge impact on perceived usefulness (Davis, 1989; Deveraj, Fan & Kohli, 2002; Gefen, Karahanna & Straub, 2003).

The significance of perceived usefulness has been broadly known in the field of electronic payment (Pousttchi & Wiedemann, 2007; Phuah, Ting & Wong, 2018; Shatskikh,2013; Trivedi, 2016). Davis (1989) has developed a model known as Technology Acceptance Model (TAM). This theory has used perceived usefulness as the factors to identify the attitude towards using a new technology. As consequences, it also helps to determine user intention to use particular technology (Davis, Bagozzi & Warshaw, 1989). In other words, perceived usefulness is to measure the intention of the person to adopt a new system or technology like electronic payment, E-wallet, online banking and so on. In some of the literature review about mobile technology has concluded perceived usefulness will affect consumer intention to use mobile payment technologies (Karnouskos, 2004; Kim, Mirusmonov & Lee, 2010; Pousttchi & Wiedemann, 2007).

Davis (1989) mentioned perceived usefulness indicates the level of the users trust that using a particular technology can help them to perform their tasks better. Besides that, trying links this to the electronic payment service field, shows that users have positive intention and attitude towards the electronic payment method. This is because it has comparative advantage than other ways like card and cash payment (Arvidsson, 2014; Mallat, 2007; Rogers, 1976). Several past studies stated that perceived usefulness have positive impact with

intentions to adopt electronic payment based on the TAM (Nysveen, Pedersen & Thorbjørnsen, 2005a; Shin, 2009; Venkatesh & Davis, 2000).

Upon further investigation, the study prepared by Daştan and Gurler (2016) did not detect any evidence of perceived usefulness have relation towards the intention to adopt mobile payment services. From the study of Punwatkar and Verghese (2018), it was showed that there is no significant evidence to show that the factor of perceived usefulness has relation with the acceptance on E-wallet.

The study above indicated that there is more proof to show that perceived usefulness brings a huge impact on the intention to adopt electronic payment but there were some studies showed that perceived usefulness has no relationship with intention to adopt electronic payment system. Thus, hypotheses developed expected that perceived usefulness positively influences the intention of customer adoption towards electronic payment service.

2.2.4 Perceived Ease of Use

Perceived ease of use (PEOU) is crucial factor to determine the relationship between consumer behaviour intention to use E-wallet in Malaysia. Davis (1989) pointed that perceived ease of use is the degree to which people trust that it would be not complicated when using a system. It means that E-wallet is expected to be easy to use than other payment ways like cash, credit or debit payment and people is more willing to use the E-wallet. When people found that the procedures of using E-Wallet are difficult and complicated, they will decide not to choose and use E-Wallet when doing purchasing. Therefore, digital payment service should be not complex or difficult to adopt.

A lot of studies showed that perceived ease of use is an important factor influenced consumer behaviour intentions to use E-wallet. Trivedi (2016) had done a study about the factors of acceptance on E-Wallet among Gen Y in India and conclude perceived ease of use is vital factor to influence the acceptance of E-wallet in India. According to the study done by Pousttchi and Wiedemann (2007), perceived ease of use has huge impacts on intention to adopt mobile payments in Germany. When people found that mobile payment is not difficult to use, most of them will perceive it is useful. Therefore, this is why ease of use is playing a crucial part to affect intention to adopt a mobile payment. Besides that, a study from Cao, Dang and Nguyen (2016) found out that ease of use also is a significant variable to influence consumer intention to use E-wallet in Vietnam. Furthermore, Mun, Khalid, and Nadarajah (2017) have done a research that aim to identify the relationship between some factors by including perceived ease of use and consumer intention to adopt mobile payment. Their study proved that it has significant impact to consumer intention to use mobile payment services.

In spite of that, there also have some studies shows that perceived ease of use is an insignificant variable to impact on consumer intention to adopt mobile payment. Based on the study of Shatskikh (2013), it argued that perceived ease of use is the only insignificant variable to affect consumer intention to adopt a mobile payment in U.S. in that study. That means this variable will not have effect on influencing to adopt a mobile payment, which mean the result is not similar with previous studies. Besides that, the study that conducted by Aslam, Ham, and Arif (2017) also have an unexpected result which perceived ease of use do not influence the intention to adopt a mobile payment in Karachi, Pakistan. Furthermore, Havidz, Aima, and Wiratih (2018) also found out that perceived ease of use is an insignificant variable on affecting consumer intention to adopt WeChat mobile payment in China. Moreover, according to the study of Yan, Md-Nor, Abu-Shanab, and Sutanonpaiboon (2009) it shows that ease of use is insignificant to affect intention to adopt a mobile payment in Malaysia. They suspected that the respondents of the study are undergraduates and were considered highly computer-literate, those will not feel using mobile payment is difficult. Because of this possibility, it affects the result of their study.

The studies above have different findings between the relationship of perceived ease of use and consumer intention to adopt mobile payment in different countries. Due to different arguments and different results from previous studies, this is the reason that perceived ease of use was choose to identify the relationship between consumer's intention to use E-wallet in this study.

2.2.5 Subjective Norm

In the study of Ajzen (1985), it states the meaning of subject norm. It means the social pressure that affects the performance of a particular behaviour (Cao et al., 2016). Nysveen et al. (2005) and Schierz et al. (2010) emphasized that social influence which is called as subjective norm should be considered in the analysis of using new technologies. Referring to the theory of Theory of Reasoned Action (TRA), it mentioned that subjective norm will direct influence one's behavioural intention (Shatskikh, 2013). The study of Ajzen (1991) aimed to highlight that when subjective norm is more favourable, the stronger the intention to conduct the behaviour (Cao et al., 2016).

From furthering the investigation, it is found that the study of Yang et al. (2012) summarizes that friends, colleagues and other factors will significantly influence one's willingness to adopt mobile payment (Cao et al., 2016). Fishbein and Ajzen (1975) also mentioned that people's behaviour or perception will be affected by those who are important to them to carry out or not to carry out the action. In the analysis in Schierz et al. (2010) found that the subjective norm is known as the extent to which a social circle deemed mobile payment as necessary, needed in their daily live, it was pointed out. Therefore, there are few previous studies stated the relationship between subjective norm and intention to adopt mobile payment.

With reference to the analysis of Shatskikh (2013), it stated that subjective norm is one of the variables that affect the usage of mobile payment. In addition, the study of Wajeeha, Marija and Imtiaz (2017) reinforces the statement above which mentioned that subjective norm is significant predictor to the acceptance

of mobile payment service (Aslam et al., 2017). Apart from that, it is positive related with the intention to adopt mobile payment in restaurant, café, bars and so on as the standardize regression coefficient is 0.137. Schierz et al. (2010) and Venkatesh and Davis (2000) also stated that subjective norm is a significant variable with the intention to adopt a mobile payment (Shatskikh, 2013). A research from Nanjing, China, the result indicates that subjective norm has strong influence on the intention to adopt mobile payment compares to other variables (Teng, Ling & Seng, 2018).

In the analysis of Hiram, Yusman, Lona and Wee (2015), it discovered the subjective norm is positively related with the intention to adopt a mobile payment. However, this study found there is a difference between the relationship of subjective norm among Malays and Chinese. Deriving from the analysis of Lim (2001) and Storz (1999), it is found that Malays are more care on the social relationship with the people around them and want to receive confirmation from others compares to the other ethnic in Malaysia (Ting et al., 2016).

Admittedly, there are few more studies shown that the subjective norm and intention to use a mobile payment has positive significant relationship. However, there are some studies showed that subjective norms and the behavioural intention to use E-wallet have no relationship. For instance, the study conducted by Belousova and Chichkanov (2015) has presented the result which showed that social influence which also called as subjective norm is an insignificant variable in forecasting the adoption of electronic payment. In further study, it is found that there is a study conducted by Morosan and DeFranco (2016) which highlighted on the use of mobile payments related to digital wallets in purchasing hotel services. This study had applied another famous theoretical model of adoption in technologies which known as Unified

Theory of Adoption and Use of Technology (UTAUT), the results presented that social influence did not play important part in the adoption of digital wallet (Dmitrii, 2018).

In Kafsh (2015), the model path validity is run by using SmartPLS on the "Bootstrapping" mode. The results showed that the subjective norms and the behavioural intention to adopt E-wallet have no significant relationship towards each other. There is another special concept which was mentioned by the research of Amoroso and Magnier-Watanabe (2012) which is the Rhodes' meta-analytic concluded that the affiliation needs increase with age, therefore, it was suggested that the older workers are more affected by the social influences. This is because of the declining of experience in technologies compares to the young generation.

The studies have shown different results and findings to proof that there are different impacts of subjective norms toward the behavioural intention to use E-wallet in different countries.

2.2.6 Perceived Trust

Trust is crucial when it comes to deal with one another and a good relationship requires a high level of trust. Cho, Chan and Adali (2015) indicated that trust is a positive belief in a person or object including reliability and confidence in a person or object. Hua, Techatassanasoontorn and Tan (2015) have divided the trust into three types which are trusting beliefs, intentions and behaviours.

The trusting intentions will be affected by trusting beliefs and trusting intentions will lead to trusting behaviours. Trusting belief is defined as the kindness, proficiency and reliability of mobile service provider perceived by consumers. However, for the trusting intention, it is defined as the user's intention to rely on mobile service provider in a given condition. Consumer is less powerful when make transactions in a mobile payment ecosystem, hence, consumer is in a vulnerable position. In short, a trustworthy mobile technology and reliable mobile service provider is important to make a successful and complete payment transaction.

There are several studies showed that perceived trust is the vital factors that had an effect on the consumer adoption on e-wallet. From a research carried out by Dastan and Gurler (2016) stated that perceived trust is significant to affect the acceptance of mobile payment. From this study, the measurement model that used is the two-stage approach model. An empirical study from Vietnam done by Cao et al. (2016) found perceived trust has positive significant relationship on the acceptance of mobile payment. Multiple regressions were used in the study to examine the factors of accepting the mobile payment. Besides, a study from Shin (2009) pointed that perceived trust has positive significant relationship on the consumer intention to adopt a mobile wallet. Consumer often feel uncertain on the transaction, thus, mobile vendors should build trust in the web sites when consumer using the Internet as a transactions.

Shaw (2014) also carried out a study and revealed that perceived trust is the factor affecting the using of the digital wallet. Partial Least Squares (PLS) technique is used in the study to analyse the results. Results showed that perceived trust will influence the acceptance of the mobile wallet. In addition, a study from Phonthanukitithaworn, Sellitto and Fong (2015) showed that

perceived trust will affect people's intention for using mobile payment services. Structural Equation Modelling (SEM) is used in the study to test the proposed model. Moreover, a study conducted by Padashetty and Kishore (2013) showed that perceived trust will affect the use of mobile payment. Analysis of Variance (ANOVA) is used in the study. The outcome from the study indicated the perceived trust is positively influence the use of mobile payment services.

However, a study done by Trivedi (2016) showed that perceived trust is not significant towards the attitude of adopting an E-wallet. The study pointed that generation Y needs the improvement in system or technology to make their task easy and with a fast transaction. Trust is insignificant in this study because this generation has known enough to digital world, thus, this generation completely deny the factors such as trust. Besides, a study from Seetharaman, Kumar, Palaniappan and Weber (2017) also pointed that trust had no impact on behavioural intention to adopt a mobile wallet. Moreover, a research from Pousttchi and Wiedemann (2007) discovered that perceived trust will not have effect on the intention to adopt a mobile payment.

Most of the past studies showed that perceived trust affects the consumer's acceptance on mobile wallet. Hence, the evidence from the previous studies can develop a hypothesis which perceived trust is significantly affects the consumer's intention to use E-wallet.

Table 2.1: Summary of Prior Empirical Studies

Variables	Author (year)	Result
Perceived Security (PS)	1. Chellappa and Pavlou (2002) 2. Patel (2016) 3. Pousttchi and Wiedemann (2007) 4. Shatskikh (2013) 5. Aslam, Ham and Arif (2017) 6. Kim, Mirusmonov, and Lee. (2010) 7. Matemba and Li (2018)	1. Significant relationship 2. Significant relationship 3. Significant relationship 4. Significant relationship 5. Insignificant relationship 6. Insignificant relationship 7. Insignificant relationship
Perceived Usefulness (PU)	1. Gefen, Karahanna, and Straub (2003) 2. Karnouskos (2004) 3. Kim, Mirusmonov, and Lee (2010) 4. Nysveen, Pedersen, and Thorbjørnsen (2005) 5. Phuah, Ting, and Wong (2018) 6. Shatskikh. (2013) 7. Shin (2009) 8. Venkatesh and Davis (2000) 9. Dastan and Gurler (2016). 10. Punwatkar and Verghese (2018)	1. Significant relationship 2. Significant relationship 3. Significant relationship 4. Significant relationship 5. Significant relationship 6. Significant relationship 7. Significant relationship 8. Significant relationship 9. Insignificant relationship 10. Insignificant relationship
Perceived Ease of	1. Cao, Dang, and Nguyen (2016)	1. Significant relationship 2. Significant relationship

Use (PEOU)	2. Mun, Khalid, and Nadarajah (2017)	3. Significant relationship
	3. Pousttchi and Wiedemann (2007)	4. Significant relationship
	4. Trivedi (2016)	5. Insignificant relationship
	5. Aslam, Ham, and Arif (2017)	6. Insignificant relationship
	6. Havidz, Aima, and Wiratih (2018)	7. Insignificant relationship
	7. Shatskikh (2013)	8. Insignificant relationship
	8. Yan, Md-Nor, Abu-Shanab, and Sutanonpaiboon (2009)	
Subjective Norm (SN)	1. Aslam, Ham, and Arif (2017)	1. Significant relationship
	2. Cao, Dang, and Nguyen (2016)	2. Significant relationship
	3. Hiram, Yusman, Lona and Wee (2015)	3. Significant relationship
	4. Shatskikh (2013)	4. Significant relationship
	5. Teng, Ling, and Seng (2018)	5. Significant relationship
	6. Wajeeha, Marija and Imtiaz (2017)	6. Significant relationship
	7. Amoroso and Magnier-Watanabe (2012)	7. Insignificant relationship
	8. Belousova and Chichkanov (2015)	8. Insignificant relationship
	9. Morosan and DeFranco (2016)	9. Insignificant relationship
	10. Kafsh (2015)	10. Insignificant relationship

Perceived Trust (PT)	1. Cao, Dang, and Nguyen (2016)	1. Significant relationship
	2. Dastan and Gurler (2016)	2. Significant relationship
	3. Padashetty and Kishore (2013)	3. Significant relationship
	4. Phonthanukitithaworn, Sellitto and Fong (2015)	4. Significant relationship
	5. Shaw (2014)	5. Significant relationship
	6. Shin (2009)	6. Significant relationship
	7. Trivedi (2016)	7. Insignificant relationship
	8. Pousttchi and Wiedemann (2007)	8. Insignificant relationship
	9. Seetharaman, Kumar, Palaniappan, and Weber (2017)	9. Insignificant relationship

Figure 2.4: Theoretical Framework of the determinants of intention to use E-wallet
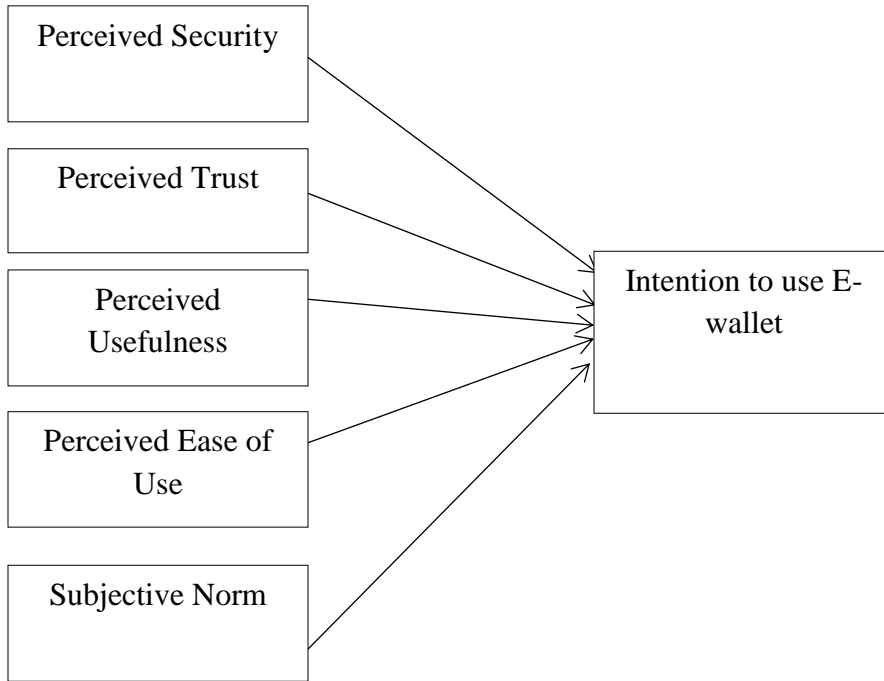
2.3 Hypotheses Development

Hypothesis testing below has developed to study the research questions are mentioned in previous chapter which is Chapter 1.

H_1: Perceived security has a significant relationship with intention to use E-Wallet.

H_1: Perceived usefulness has a significant relationship with intention to use E-Wallet.

H_1: Perceived ease of use has a significant relationship with intention to use E-Wallet.

H_1: Subjective norm has a significant relationship with intention to use E-Wallet.

H_1: Perceived trust has a significant relationship with intention to use E-Wallet.

2.4 Conclusion

Chapter 2 has discussed about literature reviews and theoretical framework which relevant to the intention to use E-wallet. The literature reviews covered the five determinants of intention to adopt E-wallet. At the same time, the theory development has formed in this study. The theory development was developed to describe how does the five independent variables affect the dependent variable. The development of hypotheses is to represent the relationship between the dependent and independent variables. Review of past studies as evidences and further support these researches paper.

CHAPTER 3: METHODOLOGY

3.0 Introduction

Chapter 3 will mainly focus on the research methods that applied to carry out this study. The research and sampling design, data collection methods, data processing and analysis, instrument of research and construct measurement will be discussed clearly in this chapter. For the last two parts which is data processing and analysis are to describe the approach used after the data is collected.

3.1 Research Design

Research design refer as a systematic plan to explain the ways and procedures that used for collecting and analysis the data for creating a research question in this study (Maxwell, 2012). The purpose is to access the relation between independent and dependent variables. The technique that applied to survey in this study is exploratory research. A good research design can assure the relevance and usefulness of the gathered data to carry out this study effectively.

3.1.1 Exploratory Research

In a study conducted by Burns and Bush (2016), exploratory research is referred as collecting primary or secondary data by using an informal and unstructured approach to interpret them. This design is not limited to one specific form but it may use either in quantitative or qualitative manner. In this case of study, it is used primary data to carry out this exploratory research. The data is developed through questionnaires in both online form (Google Forms) and printed form to acquire the information from respondents based on their demographic profiles and perceptions on the independent and dependent variable.

3.2 Data Collection Methods

In this part, data collection refers as the technique which include gather the primary data and it will be responded to the hypotheses development and research questions.

3.2.1 Primary Data

According to Nicholson and Bennett (2009), the primary data defined as the unique and initial data which acquired for the first time rather than acquiring the data from journal. The primary data can help this study to clarify the problem in question effectively and obtained the solution from the study (Curtis,

2008). This study used questionnaire survey to collect the relevant and beneficial information from respondents.

Moreover, mixed survey methods were applied to conduct this study which is online-administered (Google Forms) and person-administered (printed form) to assure the effectiveness of the survey. The questionnaires were distributed by using Google Forms tool for the online survey and the target respondents that approached were male and female age 18 and above in Kampar, Perak. One of the benefits of mixed survey is that respondents' input can be maximized with more credibility and reliability by using different ways to approach the respondents (De Leeuw, Hox & Dillman, 2008). In addition, person-administered is distributed survey questionnaire in paper form and we will assist respondent while their answering the questionnaire in order to complete it.

After collecting all primary data from questionnaire surveys, the data was analyzed to conduct the study by using the software named SMART PLS 3. SMART PLS 3 is becoming the states of the art Partial Least Squares Structural Equations Modelling (PLS-SEM).

To calculate the outcome of the model, this study will use statistical method called Partial Least Squares Structural Equations Modelling (PLS-SEM) as sampling technique. The version that this study conducted is SMART PLS 3. The use of SMART PLS 3 is wide because it can be a research tool in social science and marketing. SMART PLS 3 requires some selections that, if done incorrectly, it can turn to inaccurate of interpretations, findings and conclusions (Hair, Sarstedt, Ringle, & Mena, 2012). SMART PLS 3 can construct reliability and validity results with small sample sizes, even if models are complicated. Apart from this, SMART PLS 3 method can modify non-normal data in regard

with the central limit theorem to maximize the r square value and minimize errors. Hence, SMART PLS 3 is a first-choice method for academics in evaluating acceptance of technologies through quantitative models (Richter, Sinkovics, Ringle, & Schlaegel, 2016). Furthermore, it can enhance the quality of the study on consumer's intention to use e-wallets.

3.3 Sampling Design

In a study conducted by Malhotra and Peterson (2006), sampling refers to the procedure of choosing a part of sample or units from the target population to show the total population. Antal and Tille (2011) also pointed that sampling design is a process that enable this study to select statistical units randomly in order to make easier in examining the characteristics of the population elements. From the study of Zikmund (2003), the sample of a study can be acquired by using methods such as non-probability sampling and probability sampling. In this part, this study will discuss related to the sampling.

3.3.1 Target Population

Lavrakas (2008) mentioned that the target population for a survey is the whole parts of individual for which the survey data are to be collected to make an assumption. This study wanted to analyze the intention to accept the use of e-wallet in Malaysia. The target population for this study is to concentrate on

those who is using e-wallet app which is selected over 18 years old and above, male and female in Kampar, Perak Malaysia. The purpose for selecting younger group as our research sample is because they are fast in adoption of new technologies. For the mature group involve housewife with income, retiree, working professional and other consumers and most of them own at least one mobile device. Despite from the owning of mobile devices, the e-wallet consumers are people that have the capability in the internet operating.

There are two main reasons on targeted population. First, younger group have many college and university students come from different backgrounds with excessive income to spend on daily event. Throughout these students with different backgrounds, we are able to figure out the adoption of the e-wallet in Malaysia. Target respondents may come from different states and areas. Second, younger and mature groups are highly relying on their mobile devices for using on their daily routine and activities. When there have a sale of promotion on the purchase, people will go to download the e-wallet app to purchase on the promotion.

3.3.2 Sampling Frame and Sample Location

Sampling frame refers as component of target population which involve of a list of paths for discover the target population (Malhotra & Peterson, 2006). In this study, sampling frame involves internet users is younger and mature group in Kampar, Perak Malaysia. The questionnaire will be distributed by using hardcopy and softcopy. Hardcopy is distributed the questionnaire directly to the respondents who is targeted. Softcopy is conducted through online spreadsheet program named "Google form" which is type of online form. The Google form involved the data analysis and save much of the time to collect the data and

analyzing it automatically with a chart. Furthermore, online questionnaire solved the geographical barriers problem that will against compared by using paper form method. Sampling location is the area or place that being conduct the research to pool the data from the target respondents. Sample location will be conducted in restaurants who accept e-wallet as payment in Kampar which is targeted potential e-wallet consumer.

3.3.3 Sampling Method

In this study, convenience sampling is one of the non-probability sampling methods and it has been apply to select respondents from a population in this study. It is useful because researches have limited time and resources (Etikan, Musa, & Alkassim, 2016). Convenience sampling also is known as accidental sampling, opportunity sampling or haphazard sampling where respondents that have been choose meet certain practical situation, such as easy accessibility and availability at a given time. In order words, it can says that it is refer to a group of respondents that easily accessible in the study will be selected.

In additional, target sample size in this study is 300. Sampling size refer as the number of individuals samples in an observation. Sekaran and Bougie (2010) stated that the sample is the subset of the population of interest in a study. Draft questionnaire has been set by 30 respondents to conduct the Pilot test in order to demonstrate that all questions can be properly utilize, indicating that the design of the questionnaire is workable. Moreover, this study is targeting to receive 300 sets of questionnaires through paper form and online form within the period. From a study of Zikmund, Babin, Carr, and Griffin (2009), a sample size of 200 to 450 should be used if no sampling frame can be applied.

3.4 Instrument of Research

3.4.1 Questionnaire

Questionnaire refer to a technique used to gather and record the data which completed by different people (Saunders, 2011). The questionnaire that been used in this study was online-administered and person-administered. The questionnaire set up is based on the previous journal as reference in this study. Online questionnaire survey was applied in this study because convenience, it can reduce the time and costs. The person-administered survey is conducted because the purposes of pilot test. 30 sets of hardcopy questionnaire were allocated to the respondents and then the answer was collected. The pilot test result was used to analyze by Cronbach's alpha reliability test. If the Cronbach' alpha result is greater than 0.70, then indicate that it is more reliable. Hence, this study has to prepare online questionnaire in Google Forms and also paper form to distribute to respondents.

There are about forty-eight questions in the set of questionnaires, it is allocated into two section which is section A and B. Section A include demographic background. This section requires the respondents to complete their personal information. Section A consists of 8 questions. The personal information that stated in section A included age, ethnic, gender, income, marital status, have you heard about E-wallet, do you have E-wallet apps and how frequent you use E-wallet. Section B is prepared by five points of Likert Scale questioning on the intention to use E-wallet which will affect by perceived security, perceived usefulness, perceived ease of use, subjective norm and perceived trust.

Respondents need to make decision from "strongly disagree" (1) to "strongly agree" (5) for each of the question in section B. This section has 30 questions which allocate five questions for each dependent and independent variable in section B.

3.5 Construct Measurement

Questionnaires are created according to the five independent variables which are affecting the consumer's intention to use E-Wallet among Malaysian those are over 18 years old or above and own a smartphone that can use mobile devices.

3.5.1 Scale of Measurement

Different types of scales and measurements can bring different impact on the research analysis. Therefore, scale of measurement is a crucial thing in this study since it can bring impact on the research analysis's exactness. There have three levels of measurements: nominal scale, internal scale, and ordinal scale are adopting in this study. These measurements of scale could make this study to be more effective because it can turn the data that have collected form questionnaires into useful information.

3.5.1.1 Nominal Scale

Steven (1946) classifies that nominal scale is the measurement scale with unrestricted of numerals in which numbers are only used as labels to classify an object. It means that collected data from nominal scale can grouped or classified into two or more categories and can be used for identification in the questionnaires. The questions that used in questionnaire have nominal scale have been shown below:

```
Q1. Gender

    o   Male
    o   Female
```

```
Q2. Ethnic

    o   Malay
    o   Chinese
    o   Indian
    o   Others
```

```
Q4. Marital Status

    o   Single
    o   Married
```

Q6. Have you heard about E-Wallet

- o Yes
- o No

Q7. Do you you have about E-Wallet

- o Yes
- o No

Source: Developed for the study.

3.5.1.2 Ordinal Scale

Steven (1946) determined that ordinal scale is arising from the operation of rank ordering. Vellemen and Wilkinson (1993) also state the scale is used wisely and effectively is ordinal scale. This is because of the measurements of ordinal scale are representing an ordered series of relationship or rank order. Each rank has the meaning because there has a difference between each rank such as demographic information. For example, respondents' age is identified by using ordinal scale. The other questions using ordinal scale are shown as below:

Q3. Age

- o   20 and below
- o   21-35
- o   26-30
- o   31-35
- o   36-40
- o   40 and above

Q5. Income

- o   None
- o   RM1000 and below
- o   RM1001 – RM2999
- o   RM3000 – RM5999
- o   RM6000 and above

Q8. How frequent you use E-Wallet?

- o   None
- o   At least once per day
- o   At least once per week
- o   At least once per month

Q9. Type of E-Wallet owned

- o   Alipay
- o   Touch n' Go
- o   Boost
- o   GrabPay
- o   FavePay
- o   Others

<u>Source</u>: Developed for the study.

3.5.1.3 Interval Scale

Pagano (2006) stated that interval scale represents a higher level of measurement than ordinal scale. Furthermore, Zikmund, Babin, Carr and Griffin (2013) also state that study can organize data with higher feature through interval scale compared to ordinal scale. This is because interval scale has properties of ordinal and nominal scale, thus, it also captures details about vary in quantities of a concept.

In this study, interval scale including with five independent variables and a dependent variable. One of the examples that use interval scale in the questionnaires is shown below:

No	Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	E-Wallet is a useful mode of payment.	1	2	3	4	5

Source: Developed for the study.

3.5.2 Scaling Technique

From a study that conducted by Croasmun and Ostrom (2011), it states that Likert-type scale is commonly used in attitude and social science research project. Basically, Likert scale provides a range of responses to the statement and it requires respondent to respond a series of statements. Dalati (2018) states that Likert scale contains a series of statements that let respondents express either a positive attitude or in contrast towards the object of study. Normally, Five Point Likert-Scale is the most common in the research because too much of choices or lack of choices may cause the collected data not accurate and precise (Croasmun & Ostrom, 2011).

Therefore, Five Point Likert-Scale is use in the questionnaire for collecting data and further analysis in this study. It contains a series of choices given to respondents to measure the acceptance level toward a statement given. The choices given are 'Strongly Disagree-1, Disagree-2, Neutral-3, Agree-4, Strongly Agree-5', neutral means a neutral type of response. Croasmun and Ostrom (2011) highlighted that giving a neutral react option to respondents can decrease the chance of react in bias because respondents are not necessary to decide one way or the other on an issue.

3.6 Data processing

Data processing refers to a procedure of collecting data in its raw form and converted into usable information. The raw data collected in this study is from the questionnaires that completed by the target respondents. The major processes involved in data processing divided into four stages which include data checking, editing, coding and transcribing.

3.6.1 Data Checking

After questionnaires have been created by selecting and arranging the questions accordingly, it is necessary to recheck the questionnaires to make sure there is no minor mistakes are made such as grammar, language and so on. Minor mistakes may lead to misunderstanding of the respondents and the data collected will be invalid. The questions are structured with very simple and short sentences. The purpose of checking the grammar is to ensure the

questionnaires is free from error and show the professionalism of this research to the respondents. Immediate correction has to be made once if there is any mistake and error occurs prior the questionnaires are revealed to public.

3.6.2 Data Editing

Next step has to be taken after collecting back the questionnaires is editing the data. This step is essential as it helps to detect if there is any errors or omissions in the questionnaires. Data Editing aids in future evaluate the degree of accuracy, consistency, and homogeneity of the data. Therefore, the research conducted will be more statistically precise. Furthermore, it aids to detect the questionnaires which are incomplete in order to ease the data analysis.

3.6.3 Data Coding

Data coding is transforming the data into another format which the computer could understand. It includes quoting the edited data with either a code or numerical score. The questionnaires consist of Section A, B and C. In this research, every option given for the survey questions in the questionnaires is classified with number by ascending order. For instance, in Section A which is demographic profile, male is presented as "1" while female is presented as "2". In Section B, it uses the five-point Likert scale which "1" represent the strongly disagree, "2" is disagree, "3" is neutral, "4" is agree and "5" is strongly agree.

3.6.4 Data Transcribing

After the data is coded, it has to be transcribed into computer. Every computer is able to save the system and application by using its storage regardless of the types of computer. The data transcribed is saved as beneficial information for reference. The data in this study is analysed by using SMART PLS 3.

3.7 Data Analysis

3.7.1 Descriptive Analysis

Descriptive analysis is the transform of collected data from questionnaire into a simple summary that is easy to know, interpret and manipulate the data to produce descriptive information (Zikmund, Babin, Carr & Griffin, 2003). Basically, descriptive analysis is applied to portray the given sample size data which representing the population in the form of tables, summary charts, or graph that can help this study understanding the meaning of analyzed data. Section A of the questionnaire in this study is demographic profile, means that all the data collected from this section is representing to demographic information of respondents. The data form Section A in questionnaire is analysis by using descriptive analysis, which is defined as statistical data about the characteristic of the sample in this study.

3.7.2 Review of Data Analysis

The evaluation of validity is needed to be fulfilled since the significant and reliable coefficient does not assure an accurate measure on construct. Besides that, prior testing on how the independent variables influence the intention to use E-Wallet, measurement models need to include level of awareness validity and reliability. Based on the information that provided, Ringle, Wende and Will has developed a computer software known as Smart PLS in 2005 (Wong, 2013). It is a prominent software application and it is used to analyses the data after the data is collected from the survey questionnaire in this study.

3.7.3 Evaluation of outer model

Wong (2013) stated that there are two sub-models need to be set up first which are inner and outer model. Outer model explained the relationship between the latent variables and observed indicators. While for inner model, it explained the how the independent latent variable influence dependent latent variables. After the outer and inner model have been set up, Hair, Sarstedt, Hopkins and Kuppelwieser (2014) suggested to run the PLS-SEM algorithm. However, when set up the outer model, this study needs to differentiate between the reflectively or formatively measured construct.

Generally, the formative indicators have positive, negative or no correlations among the indicators. Hence, the reliability and validity are not necessary to report because there are meaningless for a latent variable made up of uncorrelated measures. For the reflective indicators, the indicators are highly correlated and exchangeable. Thus, it is vital to examine the validity and

reliability of the latent variables. Internal consistency reliability, convergent validity and discriminant validity were used as the measurement for reflective outer model (Wong, 2013).

3.7.4 Internal Consistency Reliability

To evaluate the internal consistency reliability, composite reliability and Cronbach's alpha were used to detect the reliability of indicators. Value of 0.7 or higher are preferable for Cronbach's alpha as well as the composite reliability. Generally, when the value is high, the level of reliability will be high (Wong, 2013).

3.7.5 Convergent Validity

Convergent validity is known as a method to measure the construct converges in order to interpret the variance of its items. To check the convergent validity, this study needs to examine the outer loadings of the indicator and the average variance extracted (AVE). The value of the outer loading should larger than 0.70 to qualify the convergent validity. For the AVE, the value should greater than 0.50 to confirm sufficient convergent validity (Hair, Risher, Sarstedt and Ringle, 2018).

3.7.6 Discriminant Validity

Discriminant validity is known as the extent to which the construct is empirically varies from other constructs (Hair et al., 2014). Three methods were used to access the discriminant validity. First, the method used to identify the discriminant validity is using the Fornell-Larcker criterion. Fornell and Larcker (1981) have pointed that using the square root of AVE in each latent variable to evaluate discriminant validity. In order to fulfil the discriminant validity, the value for square root of AVE ought to be exceeded other correlation values among the latent variables.

Next, the second method to determine the discriminant validity is detect from the cross loadings of the indicators. Hair, Ringle and Sarstedt (2011) mentioned that this method is usually more liberal. To qualify the discriminant validity, the loadings of each indicators on its construct should exceed the cross loadings on other constructs.

Another method to evaluate the discriminant validity is using the Heterotrait-monotrait (HTMT) ratio. Hamid, Sami and Sidek (2017) highlighted that the HTMT ratio enable to reach sensitivity rates and higher specificity. When the value of HTMT ratio is greater than 1, there is a deficiency of discriminant validity. In order to fulfill the discriminant validity, the value of HTMT ratio should be lesser than 1.

3.8 Conclusion

The methodology of research is explained clearly in this whole chapter. The exploratory research design is used to decide and qualify the data in order to make us of it on statistical analysis. Primary data had been used in this study to gather the data for the use data analysis. Survey questionnaires used as a method of data collection in this study. The target population of this research is those who are using e-wallet app which is selected over 18 years of age and above respondents in Kampar, Perak, Malaysia.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

Chapter four describes the analyzed and interpreted result generated from the questionnaire. This chapter presented investor's demographic profile and also the descriptive analysis by using the software application of version SMART PLS 3 to compute the final results.

4.1 Participation Rate

There are 310 set of questionnaires were allocated to the respondents through online form and printed form. This study was conducted the printed form questionnaires in 150 sets in restaurants who accept e-wallet as payment in Kampar as well as for data collection. For the remaining 160 sets of questionnaires were conducted through online form which using Google form. For all 310 questionnaires, only 299 questionnaires were filtered and usable.

4.2 Descriptive Analysis

Descriptive analysis refers to the technique that used to summarize data in an easier way so as to conduct a clear and simple understanding in this study. For Section A of respondent demographic profile, it worked by using the pie chart to shows the frequency and percentage among 299 respondents who involved in the survey. Following by Section B will be conducted through the software application of Smart-PLS mean and standard deviation.

4.2.1 Respondents' Demographic Profile

Section A reports the respondents' demographic background in this survey. This section requires the respondents to complete their personal information.

Figure 4.1: Gender
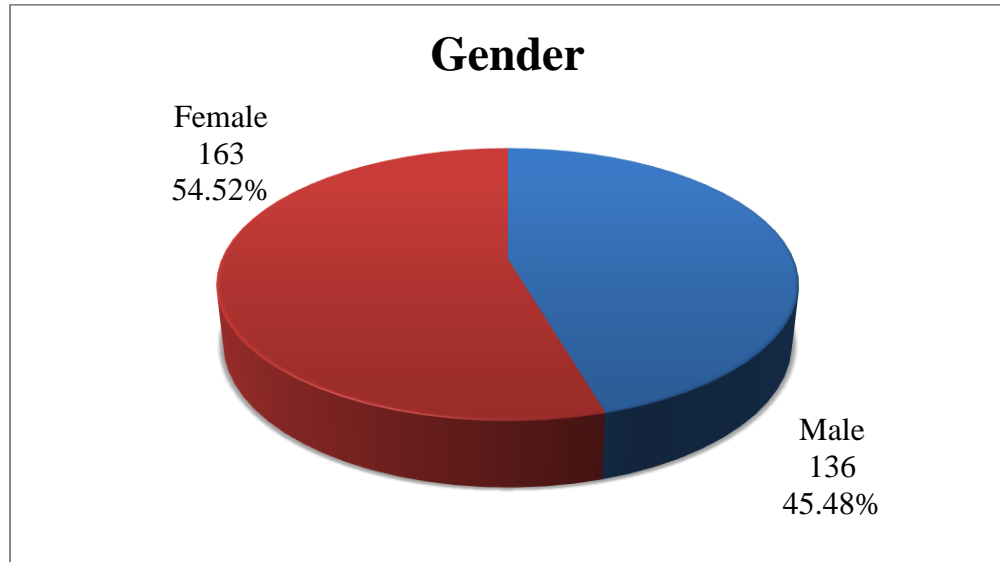
Source: Developed for the research

From figure 4.1, it presents that a total 299 of respondents was take part in survey and there are 136 respondents are male with 45.48% and the remaining 163 respondents are female with 54.52%.

Figure 4.2: Ethnic Group
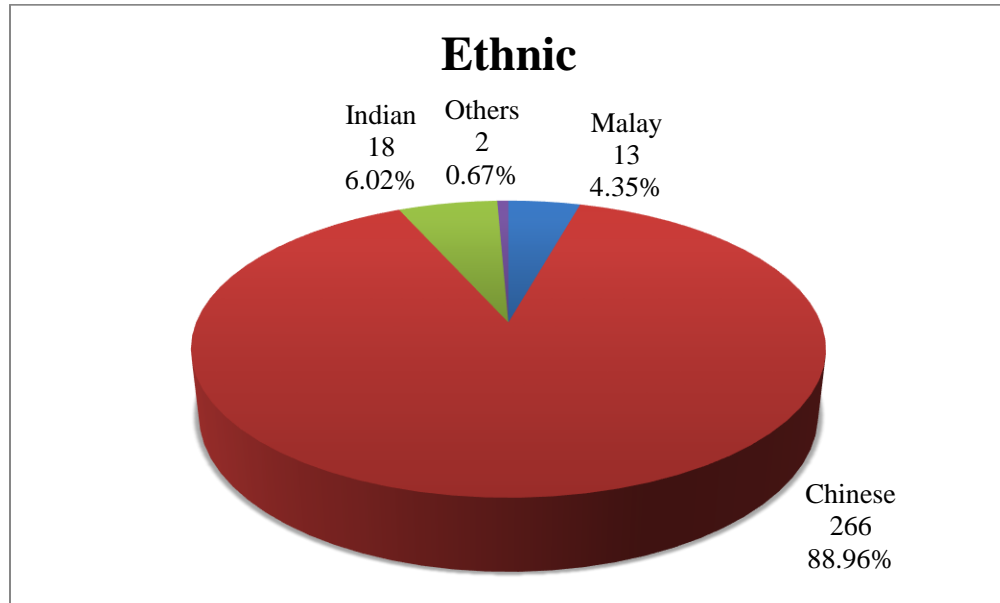
Source: Developed for the research

Figure 4.2 represent ethnic group of the respondents. More than half of target respondents are Chinese respondents which included 266 respondents, thereby they make up of 88.96%. There are 18 is Indian respondents with 6.02%, 13 of Malay respondents with 4.35% of Malay and only 2 respondents are other ethnics with 0.67%.

Figure 4.3: Age Group

Age

- 31 - 35 : 13 : 4.35%
- 36 - 40 : 1 : 0.34%
- 40 and above : 6 : 2%
- 20 and below : 46 : 15.38%
- 26 - 30 : 34 : 11.37%
- 21-25 : 199 : 66.56%
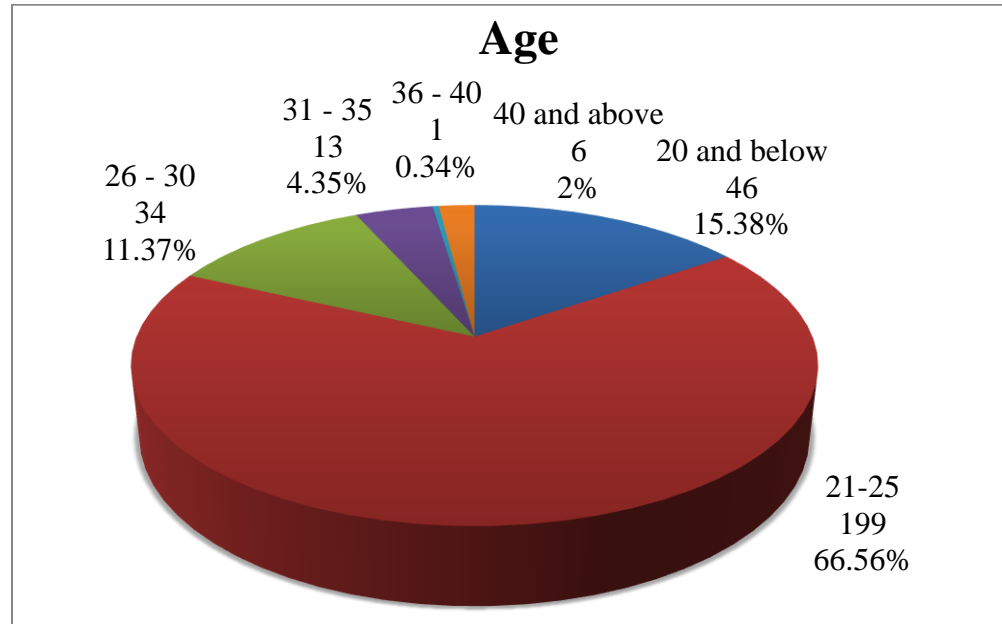
Source: Developed for the research

Figure 4.3 represents the age category of the respondents. Most popular age range in this survey is 21 to 25 years old, which are 199 respondents with 66.56%. The second popular age range is followed by the respondents who are 20 years old and below, which are 46 respondents with 15.38% and then contributed by the age group of 26 to 30 years old, which 34 respondents with 11.37%. Next, there are 13 respondents with 4.35% is between 31 to 35 years old, whereas 6 respondents with 2% lies between the age group of 40 and above years old. Lastly, 0.34% of the 1 respondent is 36 to 40 years old.

Figure 4.4: Marital Status

Marital Status

Married
39
13.04%
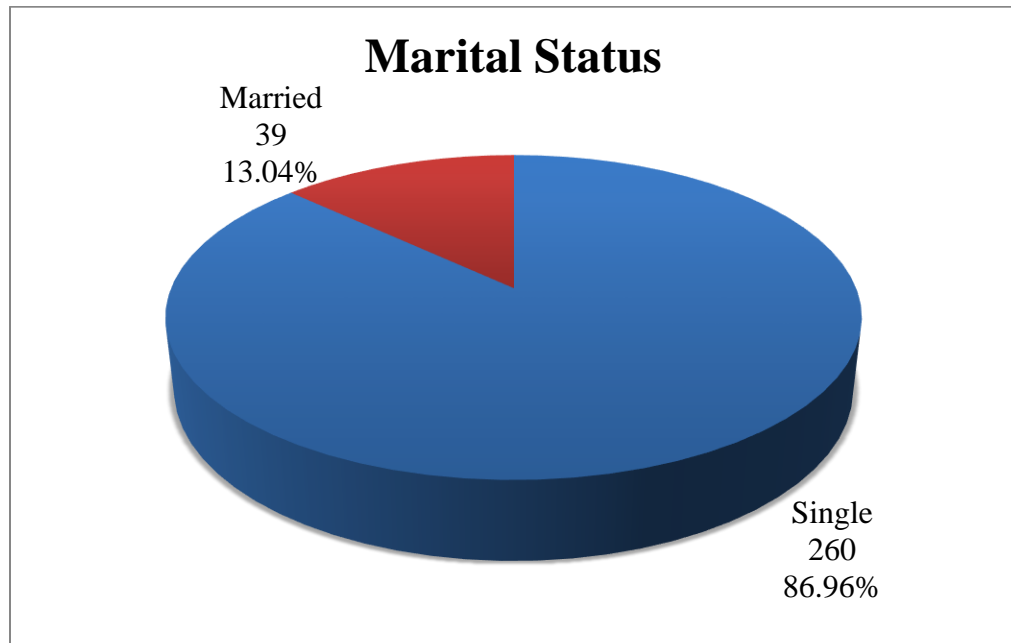
Single
260
86.96%

Source: Developed for the research

Figure 4.4 illustrates the result among 299 respondents, there are 86.96% of the respondents was single while 13.04% of the respondents was in the marital status of married which can be known as 260 respondents was single while 39 respondents was married out of 299 respondents.

Figure 4.5: Income
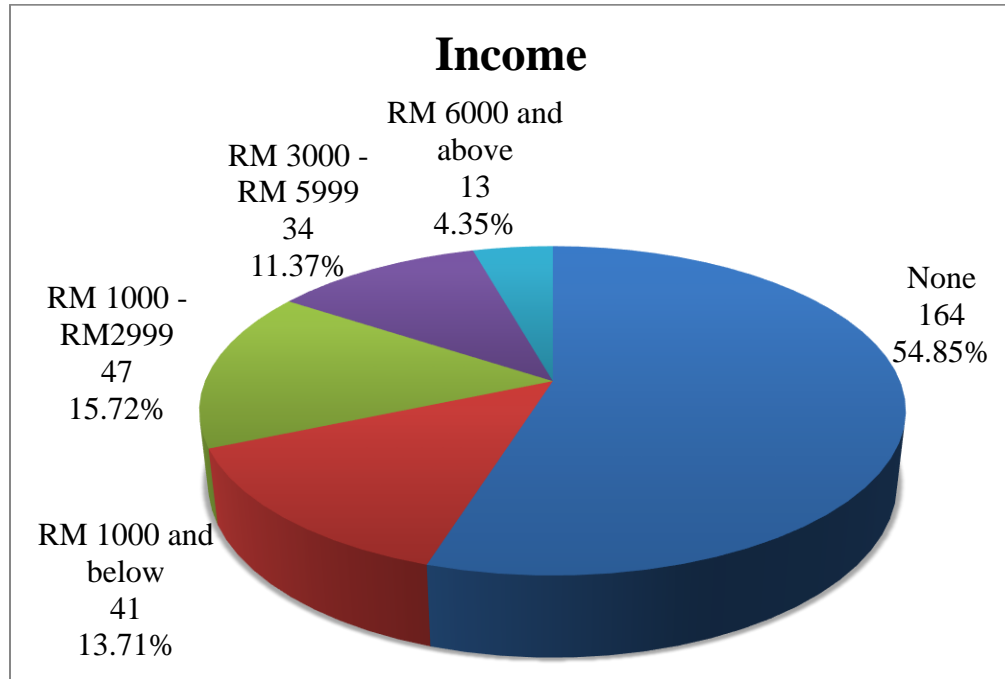
Source: Developed for the research

Figure 4.5 shows the target respondents monthly income or allowance in Kampar. 54.85% with 164 respondents earn zero income, while second highest is 15.72% with 47 respondents earn a monthly income of RM1000 to RM2999. In the meantime, the third highest income group in this study is participated by 41 respondents who gain the income of RM1000 and below per month with 13.71%, then it is contributed by the income group of RM3000 to RM5999 with the percentage of 11.37 of 34 respondents and lastly RM6000 and above with the percentage of 4.35 of 13 respondents.

Figure 4.6: Popularity of e-wallet among respondents

Popularity of e-wallet

No
8
2.67%

Yes
291
97.32%
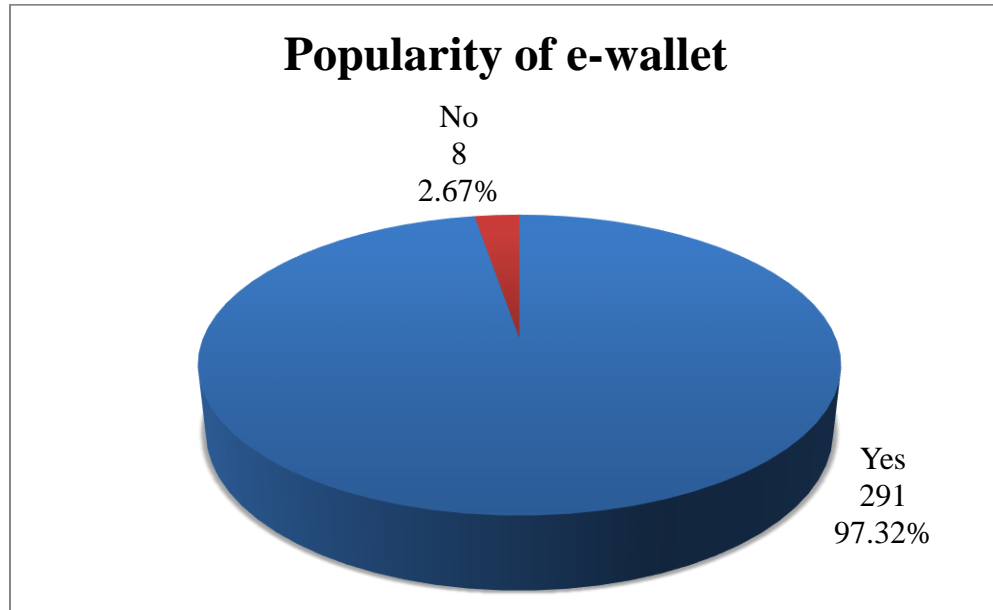
Figure 4.6 reports popularity of e-wallet among target respondents. There are 97.32% of 291 target respondents are known the e-wallet app while only 2.67% of 8 target respondents never heard about e-wallet app.

Figure 4.7: E-wallet owned
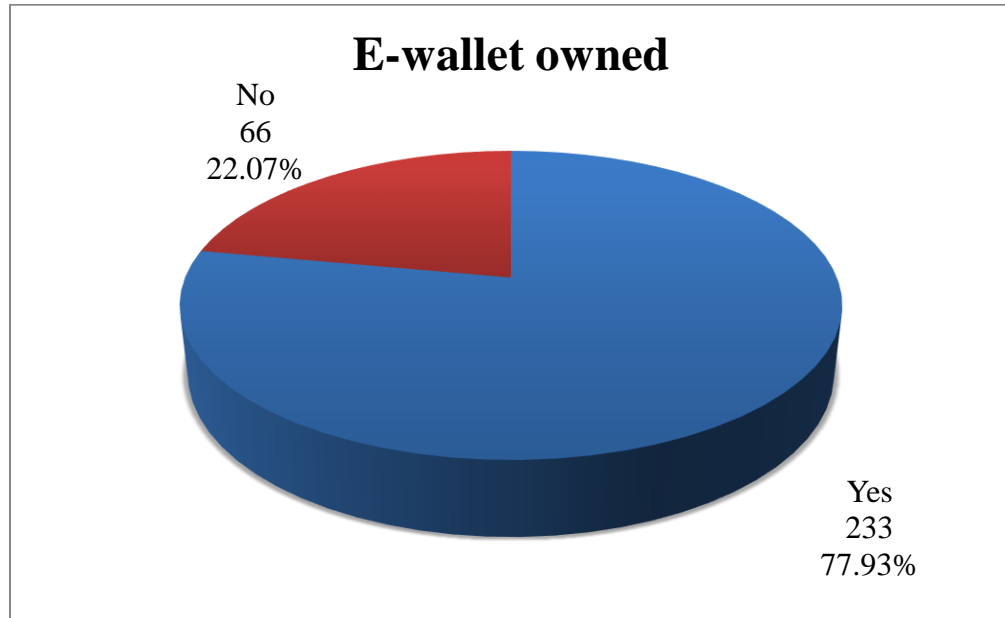
Figure 4.7 illustrate the details of e-wallet possess by the respondents in this survey. More than half of the respondents which 77.93% with 233 respondents owned the e-wallet app. Meanwhile, there are 22.07% with 66 respondents have revealed that they do not own e-wallet in their mobile phone.

Figure 4.8: Frequency of using e-wallet
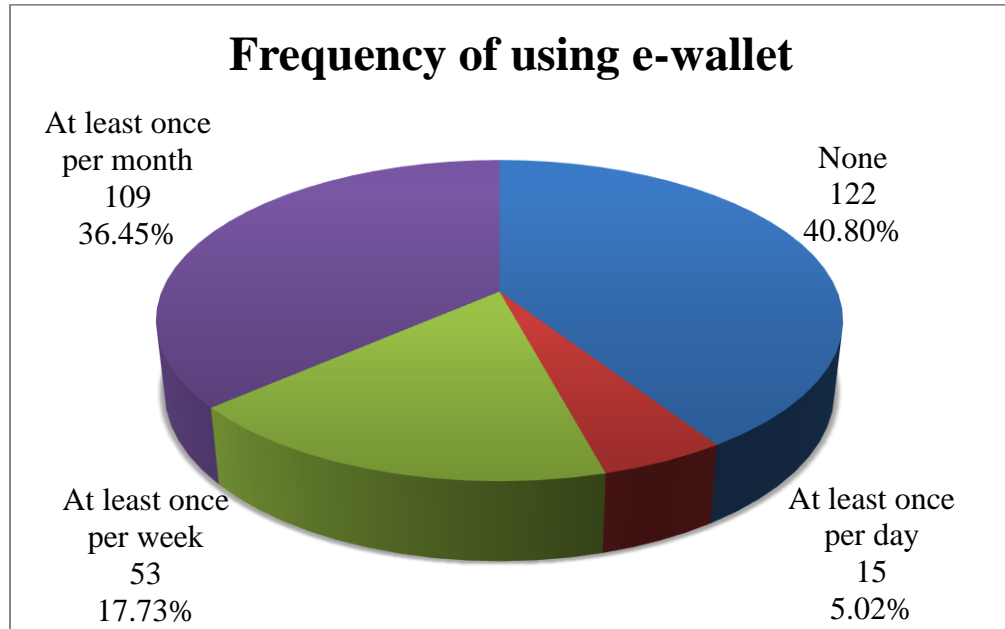
Source: Developed for the research

Figure 4.8 displays the frequency of using e-wallet among target respondents. 40.80% with 122 target respondents pointed that they do not used the e-wallet in their mobile devices. While 36.45% with 109 respondents have showed their frequency of using e-wallet is at least once per month. Following by 53 respondents are at least once per week with 17.73% of using e-wallet and lastly, there are 5.02% with 15 respondents stated that they have adopted their e-wallet at least once per day.

Figure 4.9: Types of e-wallet owned
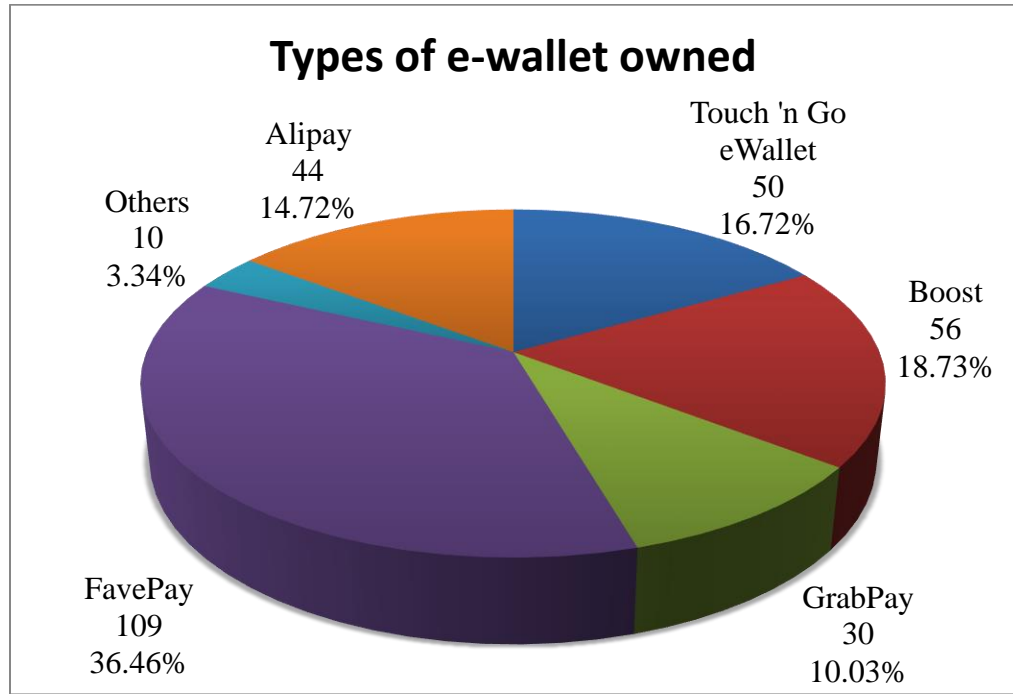
Figure 4.9 represents the types of e-wallet owned by the respondents in this survey. Most of the respondents owned FavePay which are 109 respondents with 36.46%. The second highest group is followed by the respondents who owned the Boost, which are 56 respondents with 18.73% and it is then contributed by the Touch 'n Go eWallet, which 50 respondents with 16.72%. 14.72% of the 44 respondents owned the Alipay, while 30 respondents with 10.03% lies on the GrabPay. Finally, 3.34% with 10 respondents owned other e-wallets.

4.3 Measurement and structural model

In traditional, the PLS-SEM was aim to maximize the variance of the dependent variables and mainly focuses on the prediction of primary data. In the following part of this study, further evaluation of the study finding of PLS-SEM 3 interpreted and analyzed accordingly.

4.3.1 Internal Consistency Reliability

4.3.1.1 Cronbach's Alpha, Composite Reliability, Average Variance Extracted (AVE)

On the contrary, Nils and Frederik (2010) concluded that "Cronbach's Alpha" is a way to examine the internal consistency reliability and validity in primary data research. Cronbach's Alpha also accepts this study to examine all constructs higher than the required thresholds, with a minimum value of 0.70 can be accepted.

Table 4.1: Cronbach's Alpha, Composite Reliability, Average Variance Extracted (AVE)

Constructs	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Intention to Use	0.866	0.903	0.652
Perceived Ease of Use	0.852	0.894	0.629
Perceived Security	0.816	0.867	0.567
Perceived Trust	0.923	0.940	0.722
Perceived Usefulness	0.863	0.901	0.645
Subjective Norm	0.885	0.920	0.743

From the result in table 4.1, all constructs are greater than 0.7 which mean that the value of internal constructs reliabilities was acceptable. Perceived trust has the highest value of 0.923 along with the value of 0.885 which belongs to subjective norm. Next, followed by intention to use was generated result of 0.866. Perceived ease of use, perceived usefulness and perceived security was comprised into the value of 0.863, 0.852, and 0.816.

The function of "Composite Reliability" is parallel with the "Cronbach's Alpha", nevertheless, the result of Composite Reliability is more reliable than the result of Cronbach's Alpha because it indicated the weight from different categories.

From the results reported in table 4.1, all constructs have a good value of composite reliability which range from 0.867 (perceived security) to 0.940 (perceived trust). Thus, the results confirm that the constructs in this study are highly reliable and consistent in explaining the variances constituted among each constructs.

Average of variances extracted (AVE) for each construct is remained critical to the aspect of construct reliability. Fornell and Larcker (1981) mentioned that AVE should greater than 0.5 or greater the variable should be reliable. Figure that below than 0.5 means that a measurement error was occur in the variance.

Table 4.1 also presented that none of the constructs are below 50% in the AVE value. The lowest AVE value is generated by the Perceived Security along the percentage of 56.7 and the highest AVE is showed by perceived trust with a percentage of 74.3. Hence, it can be concluded that the variables in the model are reliable.

4.3.2 Discriminant Validity

Discriminant validity is observed by the variance extracted value. Fornell-Lacker Criterion is the most familiar and effective method used to determine those constructs in the Discriminant Validity. In other words, those values of Discriminant Validity are developed by the values of Average Variance Extracted's square root in each latent variable. As it can be seen in table 4.2, the variance extracted of each construct is exceeded its squared correlation with other construct. According to Fornell and Larcker (1981) principle, it proved that these results clarify sufficient proof for discriminant validity of the measurement model.

Table 4.2: Fornell-Larcker Criterion

	ITU	PEOU	PS	PT	PU	SN
ITU	**0.808**					
PEOU	0.549	**0.793**				
PS	0.524	0.486	**0.753**			
PT	0.616	0.587	0.598	**0.850**		
PU	0.509	0.640	0.420	0.490	**0.803**	
SN	0.509	0.413	0.461	0.493	0.424	**0.862**

Notes :

a) ITU = intention to use; PEOU = perceived ease of use; PS = perceived security; PT = perceived trust; PU = perceived usefulness; SN = subjective norm

b) Inter-construct correlations: off diagonal elements

c) Square root of the AVE: diagonal elements in bold

The table 4.2 showed the value of AVE for intention to use is reported to be 0.652. Thus, when applying the square root in Fornell-Lacker Criterion in table 4.2, it becomes 0.808. The value of 0.808 is larger than other values within the same column of intention to use. Similar calculation and observation are also applied for others latent variables. For general, the result as above confirmed that the discriminant validity is well developed and this structure model can consider as fit.

Table 4.3: Factor Loadings

	ITU	PEOU	PS	PT	PU	SN
ITU 1	0.727					
ITU 2	0.871					
ITU 3	0.823					
ITU 4	0.771					
ITU 5	0.838					
PEOU 1		0.752				
PEOU 2		0.828				
PEOU 3		0.807				
PEOU 4		0.809				
PEOU 5		0.765				
PS 1			0.791			
PS 2			0.798			
PS 3			0.706			
PS 4			0.792			
PS 5			0.666			
PT 1				0.805		
PT 2				0.889		
PT 3				0.864		
PT 4				0.834		

PT 5	0.860		
PT 6	0.844		
PU 1		0.802	
PU 2		0.831	
PU 3		0.828	
PU 4		0.782	
PU 5		0.771	
SN 1			0.867
SN 2			0.875
SN 3			0.869
SN 4			0.837

Notes :

 a) ITU = intention to use; PEOU = perceived ease of use; PS = perceived security; PT = perceived trust; PU = perceived usefulness; SN = subjective norm

All items of factor and cross loadings within each of the construct was removed to evaluate the discriminant validity. Meanwhile, in compliance to the guideline of Fornell and Larcker (1981), the required minimum value of factor loading should be 0.70 for each item. All of the items except PS 5 attain to the minimum requirement, thereby their factor loadings are greater than 0.70. Since PS 5 is nearer to 0.70, hence it still can be accepted. Table 4.3 describes the cross and factor loadings of each of the item, each of them were load greater with their related latent constructs. The item does not depict strong relations with other constructs. Thereby, discriminant validity is achieved.

4.3.3 Path Coefficient

After the validity and the reliability of the model are achieved, the PLS-SEM analysis was performed into the path coefficient. Path coefficient is one of the important and special terms of PLS-SEM to examine the structural model. This study used a special produce "bootstrapping" to evaluate Standard Deviations, T-statistics and P-values of both inner and outer model.

Figure 4.10: Structural Model (Bootstrapping)
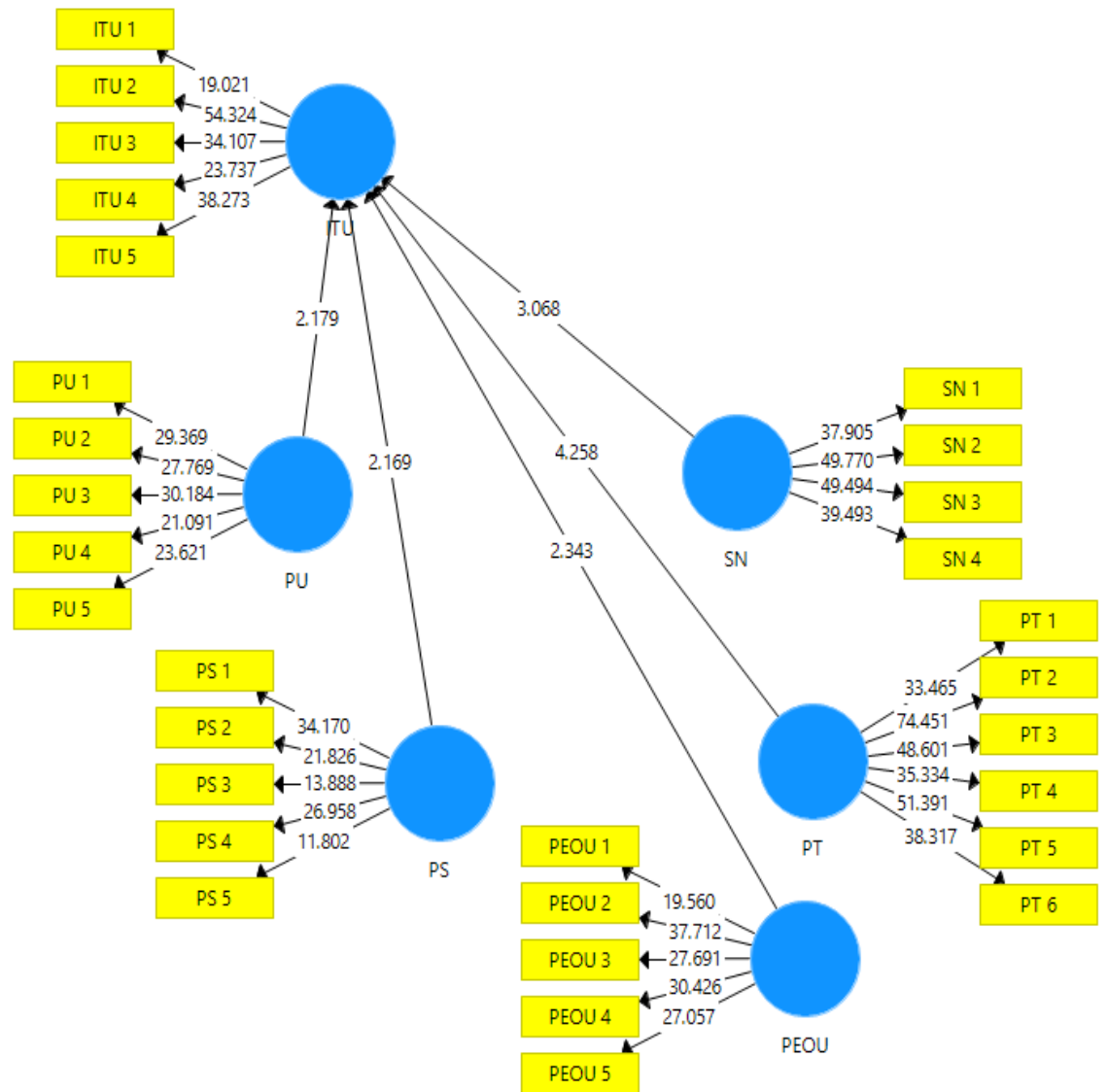
Table 4.4: Summary of Structural Model

Hypothesis	Relation-ship	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics	P Values	Result
H$_1$	PS-> ITU	0.147	0.063	2.169	0.031	Supported
H$_1$	PT-> ITU	0.280	0.068	4.258	0.000	Supported
H$_1$	PU-> ITU	0.136	0.062	2.179	0.030	Supported
H$_1$	PEOU-> ITU	0.150	0.064	2.343	0.020	Supported
H$_1$	SN-> ITU	0.185	0.060	3.068	0.002	Supported

Notes :

a) ITU = intention to use; PEOU = perceived ease of use; PS = perceived security; PT = perceived trust; PU = perceived usefulness; SN = subjective norm

PLS-SEM method was applied to measure the research hypotheses. The summary of structural model reported by table 4.4 and the significant level was set by 5% or 0.05. It implies that when p-value is exceeded the significant level of 0.05, the result is review as unsupported. In a previous study shown that $p < 0.05$ is suggestive significant level that fulfilled. The model is significant if p-value smaller than 0.05 (Malhora & Peterson, 2006). According to Uyanık and Güler (2013) mentioned that when p-value is smaller than significance level,

0.05, the independent variable is significant to dependent variable. Based on findings displayed under table 4.4, p-values of all constructs are not exceeded than the significant level. It means that all the H_1 were supported.

4.4 Analysis of Outer Loading

4.4.1 Intention to use E-Wallet

Table 4.5 Descriptive Statistics of intention to use E-Wallet

No	Statement	Original Sample	Sample Mean	Standard Deviation	T-Statistic	P-Value
1.	ITU 1	0.727	0.724	0.038	19.021	0.000 ***
2.	ITU 2	0.871	0.870	0.016	54.324	0.000 ***
3.	ITU 3	0.823	0.824	0.024	34.107	0.000 ***
4.	ITU 4	0.771	0.768	0.032	23.737	0.000 ***
5.	ITU 5	0.838	0.838	0.022	38.273	0.000 ***

Notes : When P-value less than 5% or 0.05 considered as significant***

Table 4.5 above represents the descriptive statistic of intention to use E-Wallet. The statement of ITU 2 has the highest record on the original sample (0.871), mean (0.870), and t-statistic (54.324) compared to the remaining questions but

it has the smallest value of standard deviation which is 0.016 among the five questions. In contrast, the statement of ITU 1 has the lowest original sample (0.727), sample mean (0.724) and t-statistic (19.021) but it has the largest value of standard deviation which is 0.038.

4.4.2 Perceived ease of use

Table 4.6 Descriptive Statistic of Perceived Ease of Use

No	Statement	Original Sample	Sample Mean	Standard Deviation	T-Statistic	P-Value
1.	PEOU 1	0.752	0.750	0.038	19.560	0.000 ***
2.	PEOU 2	0.828	0.828	0.022	37.712	0.000 ***
3.	PEOU 3	0.807	0.805	0.029	27.691	0.000 ***
4.	PEOU 4	0.809	0.811	0.027	30.426	0.000 ***
5.	PEOU 5	0.765	0.766	0.028	27.057	0.000 ***

Notes : When P-value less than 5% or 0.05 considered as significant***

Table 4.6 illustrates the descriptive statistic of perceived ease of use. The table above has shown that the statement of PEOU 2 obtains the highest original sample (0.828), sample mean (0.828) and t-statistic (37.712) which the statement of PEOU 1 has the lowest original sample (0.752), sample mean (0.750) as well as t-statistic (19.560). However, the statement of PEOU 2 has the smallest value of standard deviation which is 0.022. Meanwhile, the statement of PEOU 1 has the largest value of standard deviation which is 0.038.

4.4.3 Perceived Security

Table 4.7 Descriptive Statistic of Perceived Security

No	Statement	Original Sample	Sample Mean	Standard Deviation	T-Statistic	P-Value
1.	PS 1	0.791	0.792	0.023	34.170	0.000 ***
2.	PS 2	0.798	0.795	0.037	21.826	0.000 ***
3.	PS 3	0.706	0.704	0.051	13.888	0.000 ***
4.	PS 4	0.792	0.789	0.029	26.958	0.000 ***
5.	PS 5	0.666	0.662	0.056	11.802	0.000 ***

Notes : When P-value less than 5% or 0.05 considered as significant***

From the table 4.7, it states the result of the descriptive statistic of perceived security. From the result above, it has clearly stated that the statement of PS 2 has the highest value of original sample (0.798) and sample mean (0.795). Controversy, the statement of PS 5 has obtained the lowest original sample (0.666), sample mean (0.662) as well as t-statistic (11.802). On the other hand, the result also shows that the statement of PS 5 has the largest value of standard deviation with 0.056. For the t-statistic, the statement of PS 1 has the highest value of 34.170 compared to other statements. Furthermore, the standard deviation of the statement PS 1 has the lowest value of 0.023.

4.4.4 Perceived Trust

Table 4.8 Descriptive Statistic of Perceived Trust

No	Statement	Original Sample	Sample Mean	Standard Deviation	T-Statistic	P-Value
1.	PT 1	0.805	0.805	0.024	33.465	0.000 ***
2.	PT 2	0.889	0.889	0.012	74.451	0.000 ***
3.	PT 3	0.864	0.862	0.018	48.601	0.000 ***
4.	PT 4	0.834	0.835	0.024	35.334	0.000 ***
5.	PT 5	0.860	0.860	0.017	51.391	0.000 ***
6.	PT 6	0.844	0.843	0.022	38.317	0.000 ***

Notes : When P-value less than 5% or 0.05 considered as significant***

From the table 4.8, it presents the descriptive statistic of perceived trust which consists of six statements. From the results above, it projects the highest original sample, sample mean and t-statistic belongs to the statement of PT 2 with the value of 0.889, 0.889 and 74.451. Further investigation, the statement of PT 1 has the highest value of original sample (0.805), sample mean (0.805) and t-statistic (33.465). Besides that, even though the statement of PT 2 has the highest value of original sample, sample mean and t-statistic, but it has the lowest value of standard deviation with 0.012 among the 6 statements above. Interestingly, both the statement of PT 1 and PT 4 have the biggest value of standard deviation which is 0.024.

4.4.5 Perceived Usefulness

Table 4.9 Descriptive Statistic of Perceived Usefulness

No	Statement	Original Sample	Sample Mean	Standard Deviation	T-Statistic	P-Value
1.	PU 1	0.802	0.802	0.027	29.369	0.000 ***
2.	PU 2	0.831	0.828	0.030	27.769	0.000 ***
3.	PU 3	0.828	0.828	0.027	30.184	0.000 ***
4.	PU 4	0.782	0.779	0.037	21.091	0.000 ***
5.	PU 5	0.771	0.770	0.033	23.621	0.000 ***

Notes : When P-value less than 5% or 0.05 considered as significant***

Table 4.9 presents the descriptive statistic of perceived usefulness. The statement of PU 2 has the highest number of original sample which is 0.831. Apart from that, both the statement of PU 2 and PU 3 have the highest sample mean with the value of 0.828. Meanwhile, the statement of PU 5 gets the lowest value of original sample and sample mean which is 0.771 and 0.770. For the standard deviation, the statement of PU 4 has the highest value of 0.037 while both of the statements of PU 1 and PU 3 have the lowest value of standard deviation with 0.027. Furthermore, the statement of PU 3 has the highest value of t-statistic (30.184) and lowest value of t-statistic (21.091) goes to the statement of PU 4.

4.4.6 Subjective Norm

Table 4.10 Descriptive Statistic of Subjective Norm

No	Statement	Original Sample	Sample Mean	Standard Deviation	T-Statistic	P-Value
1.	SN 1	0.867	0.866	0.023	37.905	0.000 ***
2.	SN 2	0.875	0.874	0.018	49.770	0.000 ***
3.	SN 3	0.869	0.867	0.018	49.494	0.000 ***
4.	SN 4	0.837	0.836	0.021	39.493	0.000 ***

Notes : When P-value less than 5% or 0.05 considered as significant***

Table 4.10 illustrates the descriptive statistic of subjective norm. The statement of SN 2 obtains the highest value for original sample, sample mean and t-statistic which is 0.875, 0.874 and 49.770. Besides that, the statement of SN 4 has the lowest value of original sample (0.837) and sample mean (0.836). The statement of SN 1 has the lowest t-statistic with the value of 37.905. On the other hand, both the statements of SN 2 and SN 3 have the lowest value of standard deviation with the value of 0.018.

4.5 Conclusion

In conclusion, chapter four has shown the conducted descriptive analysis. The pie chart in section A shows the summary data for the respondent's demographic background, for example, gender, ethnic, age, marital status, income, popularity of using E-Wallet, E-Wallet owned and the frequency of using E-Wallet. Besides that, the data analysis has completed by applying the PLS-SEM. This chapter also has examined the reliability and validity of the variables. The path coefficient that has been also conducted investigates whether the dependent variables and independent variables are supporting each other or not. Last but not least, this chapter has also discussed about the descriptive analysis for each variable on the original sample, standard deviation, sample mean, t-statistic and p-value.

CHAPTER 5: DISCUSSION AND CONCLUSION

5.0 Introduction

Chapter five is the last chapter in this study. It is started with an introduction and it follow by the summary of statistical analysis presented by using the result of boostrapping. Next, the outcome of hypothesis for each independent variable is considered as major finding in this study and discussion in this chapter. In additional, the limitation and recommendation of this study will be provided for future studies. Last, this chapter is end up with the conclusion.

5.1 Summary of Statistical Analysis

Table 5.1: Summary of Boostrapping Result

No	Test	Hypothesis	Hypothesis Decision	Result
1.	Perceived Security and Intention To Use E-Wallet.	H_0: There is no significant relationship between perceived security and	Decision rule: Reject H_0 if p-value is smaller than 0.05. Decision making: H_1 is supported.	Significant. (**p-value=0.031**)

		intention to use E-wallet. H_1: There is a significant relationship between perceived security and intention to use E-Wallet.		
2.	Perceived Usefulness and Intention To Use E-Wallet.	H_0: There is no significant relationship between perceived usefulness and intention to use E-wallet. H_1: There is a significant relationship between perceived usefulness and intention to use E-Wallet.	Decision rule: Reject H_0 if p-value is smaller than 0.05. Decision making: H_1 is supported.	Significant. **(p-value=0.030)**
3.	Perceived Ease of Use and Intention To Use E-Wallet.	H_0: There is no significant relationship between perceived ease of use and	Decision rule: Reject H_0 if p-value is smaller than 0.05. Decision making:	Significant. **(p-value=0.020)**

		intention to use E-wallet. H$_1$: There is a significant relationship between perceived ease of use and intention to use E-Wallet.	H$_1$ is supported.	
4.	Perceived Trust and Intention To Use E-Wallet.	H$_0$: There is no significant relationship between perceived trust and intention to use E-wallet. H$_1$: There is a significant relationship between perceived trust and intention to use E-Wallet.	Decision rule: Reject H$_0$ if p-value is smaller than 0.05. Decision making: H$_1$ is supported.	Significant. **(p-value=0.000)**
5.	Subjective Norm and Intention To Use E-Wallet.	H$_0$: There is no significant relationship between subjective norm and intention to use E-wallet.	Decision rule: Reject H$_0$ if p-value is smaller than 0.05. Decision making:	Significant. **(p-value=0.002)**

		H$_1$: There is a significant relationship between subjective norm and intention to use E-Wallet.	H$_1$ is supported.	

Source: Developed for the research

5.2 Discussion of Major Finding

5.2.1 Perceived Security

Perceived security is known as the extent to which a people trust that it will be safe and secure when using a digital payment procedure (Amoroso & Magnier-Watanabe, 2012). Most of the E-Wallet users are concern about its security because higher security means payment procedure is safe and sound, and then it can lower the risk of loss. The result of this study shows that perceived security is a significant variable to the intention to use E-Wallet. It means that security of an E-Wallet will affect consumer's intention to adopt E-Wallet. The result of this study also matched with some previous studies that have done such as Patel (2016) in Ahmedabad, India, and Chellappa and Pavlou (2002). Perceived security concerns involve authentication, data integrity, confidentiality and non-repudiation (Suh & Han, 2003). Basically, consumers have a tendency to be reluctant to provide sensitive personal information and security is the concern aspect when they decide to use E-Wallet. The security is

the most concern for all consumers to use the E-Wallet. The Unified Theory of Acceptance and Use of the Technology (UTAUT) is apply to this study. This UTAUT is created by Venkatesh, Morris, Davis and Davis (2003). Under this theory, Dewan and Chen (2015) found that the perceived security is the main influence in user behavior to adopt E-Wallet.

5.2.2 Perceived Usefulness

The consumer who involved from this study believes that perceived usefulness of particular system will affect or influence their intention to use E-wallet. From this study, the result showed that perceived usefulness is a significant variable to intention to use E-wallet. The result from this study is parallel with the conclusion made by Trivedi (2016). Perceived usefulness means the extent to which a person trust that it would improve his or her tasks when they using a particular system (Davis, 1989). Robey (1979) mentioned that perceived usefulness is highly correlated with the actual use of particular system. Besides, Kleijnen, Wetzels and De Ruyter (2004) pointed that perceived usefulness in the adoption of E-wallet justify how the E-wallet can be linked in their life when make payment. Based on the diffusion theory of Rogers (1995), consumer willing to use an innovation only when it provides advantages. One of the major barriers of adoption of E-wallet is when the consumer does not have clear understanding on the benefits offered by E-wallet (Shatskikh, 2013). When the benefit of E-wallet is high perceived, the consumer will have positive attitude towards it. (Juniwati, 2014). Thus, perceived usefulness is a crucial factor to create consumer's usage intentions. This result of study also proves the Theory of Acceptance Model (TAM) that created by Davis in 1989. Perceived usefulness refers to using particular system could improve the task so it also means that respondents believe using E-Wallet would enhance their daily tasks.

5.2.3 Perceived Ease of Use

The consumers who participate in the survey think that perceived ease of use is crucial in order to build their intention to adopt E-wallet. Thus, result showed that perceived ease of use is a significant factor to the intention to use E-wallet. Davis (1989) defines that perceived ease of use is the extent to which a person trust that it would be not complicated when using a technology or system. The result from this study is same with the conclusion of Pousttchi and Wiedemann (2007) and Trivedi (2016). Davis (1989) highlighted that a mobile application with a higher level of perceived ease of use is likely to be accepted by most users. Most people are familiar using mobile phone but they might be new to use mobile applications like E-wallet (Sunny & George, 2018). Some user might feel difficult when performing transaction through E-wallet, therefore, if the system is simple and effortless, the user will more likely to accept the system (Moore & Benbasat, 1991). The user will feel satisfied when the system can be learned and used easily which in turn increases the intention to adopt the system (Childers, Carr, Peck, & Carson, 2001). In the Theory of Acceptance Model (TAM) also include perceived ease of use. From the responds that collected from respondents show that using E-Wallet is not complicated and easy to apply because E-Wallet system show all the steps for how to use E-Wallet for public. Therefore, this theory also has applied in this study.

5.2.4 Subjective Norm

From the analysis that has generated, results show that the p-value of subjective norm is 0.002 which is smaller than 0.05. In this case, it clearly proves that subjective norm is significant to the intention to use E-wallet in this study. Subjective norm has been known as the crucial factors that influence the intention to adopt E-wallet (Teng, Ling & Seng, 2018). Moreover, the study done by Yang, Gupta, Cao and Zhang (2012) highlighted that family, friend and colleagues are the main influencer for the user to use the E-wallet. The findings of this study revealed that beliefs of the people have large affect to the individual's intention to use E-wallet (Aydin and Burnaz, 2016). For this reason, it can say that influences of family, friend and colleagues towards the use of E-wallet are classified under the subjective norm. As has been noted, the relationship between subjective norm and intention to use E-wallet is positively. This subjective norm is supported by the Theory of Reasoned Action (TRA) such as the study of Aslam et al. (2017) has applied the TRA. Therefore, it is proved that the TRA has be adopted in this study. According the study of Fishibein and Aizen (1975), stated that this theory is use to test the how the attitudes affect the behavior.

5.2.5 Perceived trust

The respondents who involved in this study stated that perceived trust will influence their intention to use E-wallet. From the result of this study, it revealed that perceived trust is significant to the intention to use E-wallet. These results also obtained from a previous study done by Shaw (2014) and Dastan and Gurler (2016). Trust is a positive belief in a person or object including

reliability and confidence in a person or object (Cho et al., 2015). It means that when a person has a positive belief in E-wallet, the person will tend to use E-wallet. When payment transaction is made via E-wallet, consumer's information was revealed to several parties and consumer will concern about the outcome of transaction. E-wallet should build trust in their websites in order to build confidence of consumer to make transaction via E-wallet (Shin, 2009). Therefore, consumer will trust that the transaction made will not revealed to any inappropriate parties and belief in the honesty of parties (Chellappa & Pavlou, 2002). The Unified Theory of Acceptance and Use of Technology (UTAUT) is apply in this study in order to examine how the perceived trust can be used as determinants to generate a trustable and reliable model to affect the acceptance of the E-wallet. Hence, the UTAUT model developed to has a depth understanding about what is the criteria for the consumer to adoption the E-wallet (Venkatesh, Morris, Davis and Davis, 2013). Based on the study of Shin (2009) has mentioned that determinant of perceived trust is to explore the accepting level of the E-Wallet.

5.3 Limitations of Study

Even this study has used stringent statistical procedures and achieved the research objectives. Nevertheless, this study had encountered some limitations and it should be taken into consideration. The first limitation was the sample of the study is mostly younger generations, which their age is mainly 21 to 25 years old, which are 199 respondents (66.56%). Even though the main literatures have showed that younger innovative adults are more likely to adopt in new innovation (Tan, Chong, Ooi & Chong, 2010). Nonetheless, researchers shall not assume these groups take as representatives of consumer adoption of the whole in Kampar, Malaysia. Furthermore, researchers shall not summarize these findings to the elders or other areas because

different age group may have different behaviors towards E-wallet (Tan, Ooi, Sim & Phusavat, 2012). It should be noted the findings of this study may not be summarized over the examined sample. This could lead to bias in this study. For instance, the respondents' age grouping in this study does not represent the age distribution of the Malaysia population.

Next, the sampling location is one of the limitations. Because of time constraints and the costs, this study was done in Kampar, it is a place that have a university and college which in Perak. Most of the respondents are Chinese, students and their age are between 21 and 25. Therefore, the result of this study cannot generalize to Malaysian users. Furthermore, the journals that used as references in this study are mostly from overseas because the journals that related to this area that have done in Malaysia are little.

Another limitation in this study is that the researchers use convenience sampling as the sampling technique because of the limited time and resources. Convenience sampling is one of the non-probability sampling method. Most of the researchers prefer this sampling technique because it is fast, inexpensive, easy and the subjects are readily available. Although convenience sampling is easy to access, however, it will cause the sampling bias and high level of sampling error. The data collected by using this technique refer to the views of a specific group but not the entire population. It will cause some of the group over-represented and some will be under-represented. Since it will cause the sampling bias, it may cause the sampling inaccurate and sampling error. Therefore, the conclusions from this study cannot be generalize to all the people since the statement are not representative of the entire population.

5.4 Recommendation for Future Researchers

Future research might concern at different age groups to observe in case there are any deviations on behaviors employed towards E-wallet. Besides, sample size of the study contributes are one of the weakness as well. Researchers can conduct the survey with different age of groups with equally and not only to the majority of age groups. Before conduct the survey, the researcher may ask the respondents' age and distribute the questionnaire with limited set to each age group category. This will be effective to get the accurate result based on the equally age of group. For example, distributes 50 sets to 21 to 25 years old, 50 sets to 26 to 30 years old, 50 sets to 31 to 36 years old and so on. According to the Lee and Khaw (2018) mentioned that estimated 12 million of adult without online banking services. Rather than randomly taken consumers' responses, future study can be held to review the survey from the respondents with online banking services. This is because E-wallet considered consisted relationship with the online banking, user who using E-wallet should own their online banking services to transfer their funds to the E-wallet and make the payment transaction. Respondents who own online banking will be more knowledgeable towards E-wallet to conduct the survey. Therefore, if consumers have online banking, they are more likely towards to cashless society.

Next, the future studies are encouraged to do the study by collecting data from different respondents that come from different states. They can collect the data in Malaysia like Sabah, Kuala Lumpur, Penang and so on. Additionally, they should do survey by choosing the most suitable geographical area to gain more accurate data for their study. For example, Kuala Lumpur is the more suitable area because it has huge number of population and diverse ethic compared to Kampar.

For the future studies, the researchers are recommended to choose simple random sampling. Simple random sampling is one of the probability sampling method. Simple random sampling can help the researchers avoid an unconscious bias when they collect the data. It is because simple random sampling allows everyone to have an equal chance of being selected. This can help the researchers to create a more accurate sampling from the data collected. As the data collected is little relevance of bias, hence, the results can produce for the larger frame of population and allows for research findings to be equally generalized. Besides, simple random sampling also allows the researchers to perform the analysis with a lower error. It is because the data collected is randomized, it reflects the entire population and this allows the data to provide an accurate insight for a specific subject matter.

5.5 Conclusion

On the whole, this study focuses on the determinants of intention to use E-wallet in Malaysia. The determinants that affect the intention to use E-wallet are perceived security, perceived usefulness, perceived ease of use, subjective norm, perceived trust. As result shown above, all the determinants have the significant relationship with the intention to use E-wallet.

Moreover, this study has figure out some limitations such as the sample of the study is mostly younger generations, sampling location and use of convenience sampling method. Hence, here also recommended some solution to the future researches in order help them to solve those problem stated above. The solution to overcome sample of the study that is mostly younger generations is the researcher may ask the respondents' age and distribute the questionnaire with limited set to each age group category. It will help the researchers to get more accurate result. Next solution for the sampling location is aim more target respondents which come from different states in Malaysia. Third solution is the researchers are recommended to choose simple random sampling. It is one of the probability sampling method which can provide a more accurate data as simple random sampling allows everyone to have an equal chance of being selected.

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APPENDIX A: Certification Letter

UNIVERSITI TUNKU ABDUL RAHMAN

Wholly Owned by UTAR Education Foundation (Company No. 578227-M)

3 June 2019

To Whom It May Concern

Dear Sir/Madam,

Permission to Conduct Survey

This is to confirm that the following students are currently pursuing their *Bachelor of Business Administration (Hons) Banking and Finance* program at the Faculty of Business and Finance, Universiti Tunku Abdul Rahman (UTAR) Perak Campus.

I would be most grateful if you could assist them by allowing them to conduct their research at your institution. All information collected will be kept confidential and used only for academic purposes.

The students are as follows:

Name of Student	Student ID
Neoh May Ying	16ABB06400
Riri Andri Ani Binti Mustafa Tan	16ABB07210
Wong Phooi Wai	16ABB07211
Tean Sim Yin	16ABB07544
Tan Shir Lynn	16ABB00060

If you need further verification, please do not hesitate to contact me.

Thank you.

Yours sincerely,

THAVAMALAR A/P GANAPATHY
HEAD
(Acting) DEPARTMENT OF ECONOMICS
FACULTY OF BUSINESS AND FINANCE
UNIVERSITI TUNKU ABDUL RAHMAN

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Website: www.utar.edu.my

APPENDIX B: Questionnaire

UNIVERSITI TUNKU ABDUL RAHMAN

QUESTIONNAIRE

Dear respondent,

We are researchers from Universiti Tunku Abdul Rahman (UTAR). We are currently conducting a survey on the **consumer's intention to use E-Wallet**.

Your co-operation in answering this questionnaire is highly important to us. This will be of tremendous help for the completion of our research and in the achievement of its purpose. We truly appreciate you for taking your time and effort in completing these questions. All of the information obtained with regards to this research will be kept **strictly confidential**. This information is solely for academic research purposes.

Thank you very much your time and participation. If you have any enquiry, please do not hesitate to contact any one of our team members.

Yours sincerely,

Name	Email	Phone Number
Neoh May Ying	mayyingg@gmail.com	016-5157756
Wong Phooi Wai	phooiwai961022@outlook.com	014-6002560
Riri Andri Ani Binti Mustafa Tan	riritan_96@hotmail.com	016-7662064
Tan Shir Lynn	shirlynn0211@gmail.com	017-9595153
Tean Sim Yin	xyingsss0709@gmail.com	011-21912663

Please be informed that in accordance with Personal Data Protection Act 2010 ("PDPA") which came into force on 15 November 2013, Universiti Tunku Abdul Rahman ("UTAR") is hereby bound to make notice and require consent in relation to collection, recording, storage, usage and retention of personal information.

Acknowledgement of Notice

☐   I have been notified by you and that I hereby understood, consented and agreed
      per   UTAR notice.

☐   I disagree; my personal data will not be processed.

Section A: Demographic Profile

The following questions refer to the demographic profile of the respondents. Please
provide the appropriate information by placing a (/) in the bracket provided to represent
your answer.

1. Gender

- o   Male
- o   Female

2. Ethnic

- o   Malay
- o   Chinese
- o   Indian
- o   Others : _____

3. Age

- o   20 and below
- o   21 – 25
- o   26 – 30
- o   31 – 35
- o   36 – 40
- o   40 and above

4. Marital Status

- o   Single
- o   Married

5. Income

- o   None
- o   RM1000 and below
- o   RM1001 – RM2999
- o   RM 3000 – RM5999
- o   RM6000 and above

6. Have you heard about 'E-Wallet'?

- o Yes
- o No

7. Do you have 'E-Wallet' apps?

- o Yes
- o No

8. How frequent you use 'E-Wallet'?

- o None
- o At least once per day
- o At least once per week
- o At least once per month

9. Types of E-Wallet owned

- o Alipay

- o Touch n' Go

- o Boost

- o GrabPay

- o FavePay

- o Others

Section B : Consumer's intention to use E-Wallet

Note : Scale 1 indicates that you strongly disagree with the statement and 5 indicates you strongly agree with the statement.

Intention to use E-Wallet

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I expect my use of the 'E-Wallet' will increase in the future.	1	2	3	4	5

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
2.	I plan to use 'E-Wallet' frequently.	1	2	3	4	5
3.	I will strongly recommend others to use 'E-Wallet'.	1	2	3	4	5
4.	I intend to use 'E-Wallet' when the opportunity arises.	1	2	3	4	5
5.	I am willing to use 'E-Wallet' in the near future.	1	2	3	4	5

Perceived Security

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I am comfortable with having my 'E-Wallet' integrated into my mobile phone.	1	2	3	4	5
2.	The risk of an unauthorized third party overseeing the payment is low.	1	2	3	4	5
3.	The risk of abuse of billing information (e.g. credit card number, bank account data) is low.	1	2	3	4	5
4.	The risk of abuse of usage (e.g. payment amount) is low.	1	2	3	4	5
5.	I believe that overall riskiness of E-Wallet is low.	1	2	3	4	5

Perceived usefulness

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	'E-Wallet' is a useful mode of payment.	1	2	3	4	5
2.	Using 'E-Wallet' to make payment saves my time.	1	2	3	4	5
3.	Using 'E-Wallet' would enhance my effectiveness in making payments.	1	2	3	4	5
4.	Using 'E-Wallet' will allow me to pay more quickly.	1	2	3	4	5

5.	By 'E-Wallet' services, my experiences as a consumer would be improved.	1	2	3	4	5

Perceived ease of use

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	It is easy to use 'E-Wallet'.	1	2	3	4	5
2.	Understanding how to use 'E-Wallet' is clear and understandable.	1	2	3	4	5
3.	I rarely get confused when I use 'E-Wallet'.	1	2	3	4	5
4.	It is easy to perform the steps required to use 'E-Wallet'.	1	2	3	4	5
5.	I rarely make errors when using the 'E-Wallet''.	1	2	3	4	5

Subjective norm

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	People who are important to me would find using 'E-Wallet' to be beneficial.	1	2	3	4	5
2.	People who are important to me would consider using 'E-Wallet' to be a good idea.	1	2	3	4	5
3.	People who are important to me would recommend using 'E-Wallet'.	1	2	3	4	5
4.	It is expected that people like me use 'E-Wallet'.	1	2	3	4	5

Perceived Trust

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I believe in the information the 'E-Wallet' provides.	1	2	3	4	5
2.	I trust 'E-Wallet' to be secure.	1	2	3	4	5
3.	In my opinion, 'E-Wallet' is very reliable.	1	2	3	4	5
4.	'E-Wallet' has adequate features to protect my privacy.	1	2	3	4	5
5.	I can rely on 'E-Wallet' to execute my transactions reliably.	1	2	3	4	5
6.	Given the state of existing E-Wallet, I believe that technology related errors are quite rare.	1	2	3	4	5

THANK YOU VERY MUCH FOR YOUR KIND PARTICIPATION.