E-WALLET: DOMINATING FUTURE TRANSACTION METHOD FOR GENERATION Z IN MALAYSIA

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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 16466.

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TABLE OF CONTENTS

LIST OF TABLES

Page

LIST OF FIGURES

LIST OF ABBREVIATIONS

AD	Adopt intention of E-wallet
AVE	Average Variance Extracted
BNM	Bank Negara Malaysia
CR	Composite Reliability
DNA	Deoxyribonucleic acid
E-payment	Electronic payment
E-wallet	Electronic wallet
EE	Effort expectancy
FC	Facilitating conditions
FPX	Financial Process Exchange
HA	Habit
HM	Hedonic Motivation
HTMT	Heterotrait-Monotrait Ratio of Correlations
IDT	Innovation Diffusion Theory
M-payment	Mobile payment
MM	Motivational Model
MPCU	Model of PC Utilization

NFC	Near Field Communication
OTP	One-time password
PE	Performance expectancy
PLS-SEM	Partial Least Squares – Structural Equation Modeling
SCT	Social Cognitive Theory
SEM	Structural Equation Modelling
SI	Social influence
SmartPLS	Smart Partial Least Squares
TAM	Technology Acceptance Model
TAM-TPB	Technology Acceptance Model- Theory of Planned Behavior
TNG	Touch'n Go
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
UTAUT	Unified Theory of Acceptance Use of Technology
UTAUT2	Unified Theory of Acceptance Use of Technology 2

LIST OF APPENDICES

Page

PREFACE

In the era of advanced technology, people around the world are increasingly using smartphone, as many things have been digitalized, E-wallets also experiencing popularity in the society today. Due to the rapid development of digital payments, using E-wallet becomes the latest worldwide trend. This paper is inspirated by this phenomenon that currently happens among the youth generations today. The possibility of E-wallet dominating the transaction method in Malaysia become a common question emerged in the minds of the team members in this research. Therefore, a consensus reached among the members to conduct research in order to figure out factors that are important in influencing the intention of the newest generation to adopt E-wallet, where the generation studied are also the main potential users of E-wallet in the near future.

As a result, the members hope that this research could benefit different parties such as policy maker and other researchers. Moreover, the members could also gain further knowledge about the current situation of E-wallets usage in Malaysia as they are also part of Generation Z. Therefore, knowing the potential future for primary payment method among Generation Z is important as it helps in the promotion of cashless society in the country.

In short, it is hoped that this research report could provide different insights for the readers and interested parties, the members could also take this opportunity to keep researching and studying topics related to this report in their future studies by using this report as references.

ABSTRACT

This research is intended to examine the factors influencing the adopt intention of E-wallet among Generation Z in Malaysia. Generation Z refers the generation who born from 1997 to 2012. Factors included in this research are taken references from the Unified Theory of Acceptance Use of Technology 2 (UTAUT2) theory, which include performance expectancy, effort expectancy, social influence, facilitating conditions, habit, and hedonic motivation. The target respondents for this research are Malaysian Generation Z who born between 1997 and 2005 and have experiences in using E-wallet. A total of 396 eligible responses had been collected and used in data analysis. Partial least squares structural equation modeling (PLS-SEM) was applied as the research methodology in this research using Smart PLS version 3.3.7, along with Outer loadings analysis, reliability test, discriminant validity test, and bootstrapping. From the findings, it showed that social influence, habit and hedonic motivation are significant towards adopt intention of E-wallets for Generation Z in Malaysia. On the other hand, performance expectancy, effort expectancy, and facilitating conditions are not significant in influencing the adopt intention of Generation Z. Discussions on relationship between variables as well as the implication of this research had also performed in the paper. In additions, some limitations and recommendations about this research are included to provide more comprehensive information to the readers.

CHAPTER 1: RESEARCH OVERVIEW

1.0 Introduction

Nowadays, smartphones have become one of the daily life necessities for most of the people throughout the world. With the advancement of technology, many things have been digitalized, more features and functions are available in today's smartphone as compared to the past handsets. Therefore, using smartphones to perform and complete tasks has brought convenience and benefits to the users, such as time and cost saving. It also provides a secure environment for people to perform transactions regardless with the personal information security or the new norms that have been developed in recent years (Teng & Khong, 2021). As a result, due to the evolution of wireless connection and internet technologies, smartphones have become a common electronic device that brings the owners to a new digital era. With the increasing number of smartphone users, the demand for digital and cashless transactions in the society today increases positively also. It is forecasted that at the end of year 2025, the number of mobile wallet users worldwide will reach 4.8 billion (Rolfe, 2022). The users' attitude on digital payment methods and adoption of digital transaction applications has undergone a drastic change.

Among various types of digital payment method such as debit and credit cards, e-banking, and bank applications, mobile wallets, which is also known as electronic wallets (E-wallets) would be one of the best creations in this century, and this creation is also an indispensable part for the development of digital payment system (Karim et al., 2020). E-wallet is a form of digital payment allowing users to link their bank cards or online bank accounts to their E-wallet account in mobile applications. By topping-up and reloading money into the E-wallet accounts, it enables users to complete money transfers digitally with just few finger taps. For example, in-store and online shopping

payment, individual money transfer, bills and parking fee payment, and even small amount investment.

According to Karim et al. (2020), E-wallet payment provides a faster, more convenient, and more useful experience to the users than other banking systems. Under this premise, the E-wallet payment brings forward multipurpose techniques for users in Malaysia. E-wallets have become the latest payment trend for users due to the benefits it brings, and the new culture built among worldwide people in recent years. The main reason that E-wallets experience popularity worldwide is its easiness for users to reload money and use it repeatedly. Next, it provides users a sense of comfort and security to complete transactions (Singh, et al., 2020). Besides, E-wallet requires lower cost of financial transactions as no additional or processing fees will be charged and it also helps the users to save more time and reduce the paperwork (Yakean, 2020).

The usage of E-wallet still small or under expectation. Therefore, this research intended to examine the relationship between determinants and the intention of adopting E-wallet as the primary transaction method among Generation Z in Malaysia. The survey is carried out with the purpose to analyze the linkage between Generation Z involvement and their intention to continue using E-wallets as the main payment method in the future.

1.1 Research Background

In the era of rapid technology development where online shopping, Fintech, and digital payment transactions are highly used, it is expected that E-wallet will become more and more popular in the market (Bezovski, 2016). This phenomenon is expected to happen because today is not like the past, when digital system was not being promoted widely and still under development process, while smartphone also being considered as high technology with low frequency of daily usage product due to low number of users, and it might not be affordable by people in each class of population. According

to Muller (2021), the number of smartphone users in Malaysia was only 6.15 million in the past decade, but it was forecasted to reach 29.46 million at the end of year 2022. Therefore, the substantial growth of smartphone users shows that since digital payment system was not widely used as compared to now, cash payment would probably be the most commonly used method to complete a transaction while online transfer or baking system are more applicable to certain groups of people that possess knowledge on the operation of those systems and websites in the past.

However, after digital payment method has been widely promoted to public and the usage is starting to become higher due to various reasons (Teng & Khong, 2021), such as rise in popularity of e-commerce, changes in normal lifestyles, new culture built by younger generation, and the rapid development in network and digital payment system due to increase the demand of using it. Cash transactions are no longer the most convenient and efficient transaction method for some individuals and businesses. There are few shortcomings related to cash payment. Firstly, cash payment requires face-to-face physical payment. Secondly, cash payment is not as efficient as mobile wallet payment or any other digital payment method as it is time consuming and error-prone (Hsieh, 2021). As a result, the advantages that mobile wallets bring to users has also driven itself towards the possibilities to a more advanced and promising future (Bezovski, 2016).

According to Leon (2021), mobile wallets not only encourage interpersonal money transfer and purchase payment, but it also supports government-to-person transfer. Indeed, Malaysia government has also encouraged Malaysians to adopt mobile wallets especially during recent years. The government has taken actions to encourage Malaysians to shift from a cash-based society to a cashless society through some policies earlier. For further illustration, Financial Sector Blueprint (2011-2020) promoted by Bank Negara Malaysia (BNM), the objective would be to eliminate the cheques transactions and to speed up transactions by using e-payment. Besides, part of the Malaysia Budget 2020 stated that the government assigned RM750 million to enhance the adoption of E-wallets in Malaysia (Fong, 2020). For example, a one-off

RM30 incentive was given to eligible E-wallet users in order to stimulate and encourage E-wallet usage among Malaysian (Tenk et al., 2021). Currently, there are few popular digital wallets in Malaysia and play a dominant role in Malaysia, such as Boost, GrabPay, WeChat pay and Touch'n Go E-wallet (TNG).

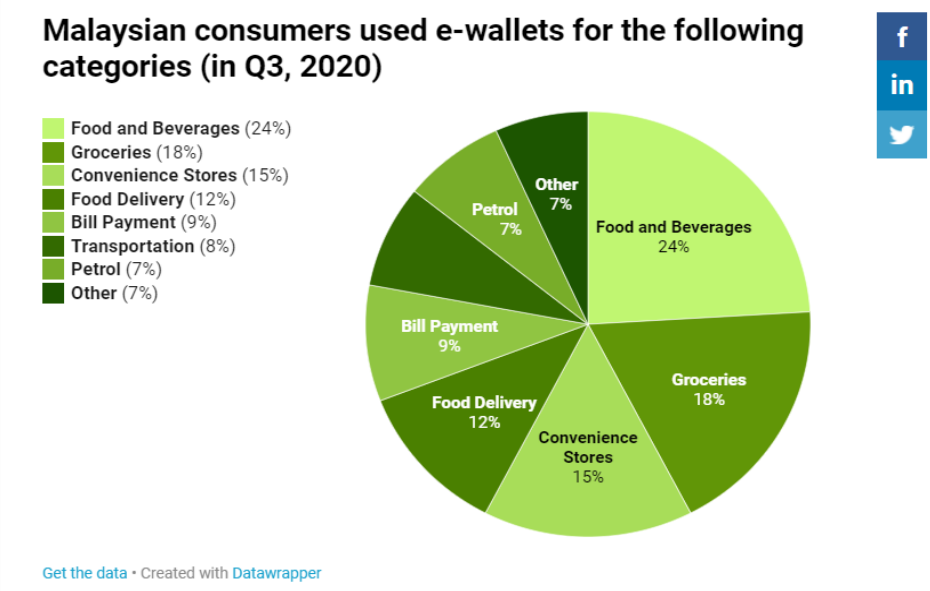
According to Karim et al. (2020), age would be a crucial factor to influence the intention for a person to adopt digital payment application, this would be the reason that causes differences in payment methods used among different age groups of consumers, (i.e., Generation X, Generation Y, and Generation Z). Generation Z would be the main group of population that being focused in this research. In general, generation Z refers to the newest generation that was born between 1997 and 2012 (Dimock, 2019). Generation Z is known as a unique group as they are the first generation of digital natives as they are born with digital chromosomes in their DNA. These target group of people have been exposed to a tremendous amount of technology during their childhood and adolescence, they are more comfortable with digital environments and engaging with new e-payment systems (Kahawandal & Peter, 2020).

Thus, the survey questionnaire for this research was distributed for the population that was born between 1997 and 2005 in Malaysia, which are Malaysians that are aged between 16 years old and 25 years old. The next requirement for the questionnaire would be the respondents must have experience using E-wallets and successfully used E-wallets to complete any transactions before. The reason behind these target groups is because these characteristics can help this research to be more accountable. These backgrounds of Generation Z motivated the members to conduct research on whether E-wallets payment will dominate future transaction method in Malaysia. In short, this research intended to investigate whether Generation Z will keep using E-wallet as their primary transaction method in the future.

1.2 Problem Statement

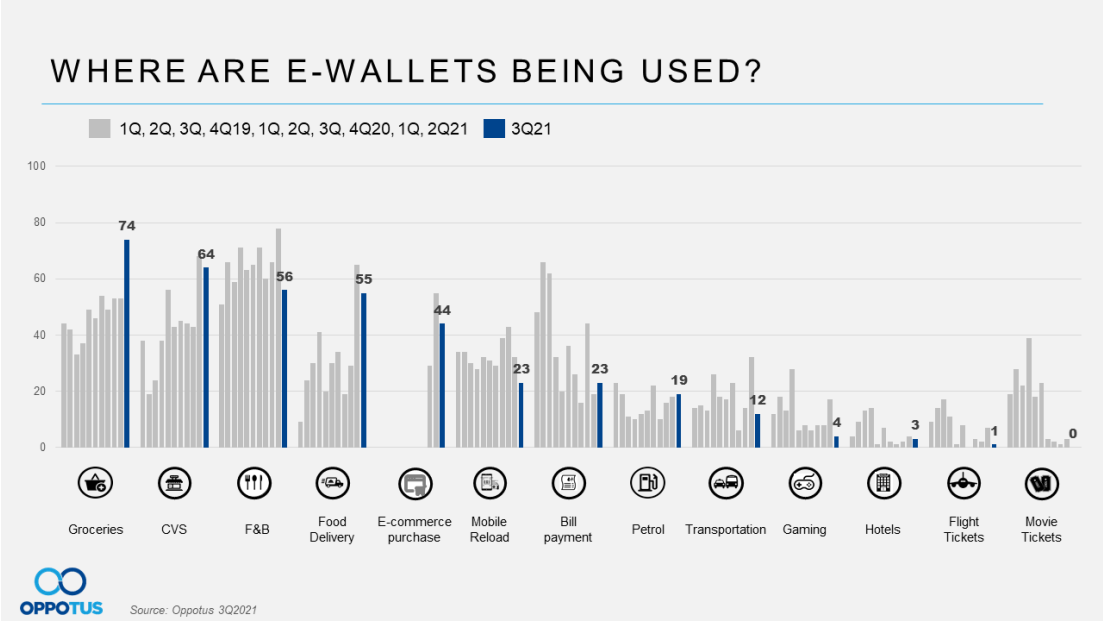
Due to the evolution of digital payment systems, smartphones and network, people tend to switch their money transfer method to mobile wallets to reach the effectiveness of using it, and at the same time to minimize the risks that might be faced when carry a lot of cash every day. Malaysia is also a country that actively moving towards the goal of cashless society. According to Balakrishnan and Shuib (2021), cashless society refers to society that completes transactions process using digital payment system and electronic devices. Under this premise, mobile wallets would be one of the crucial elements that lead the country more towards its goals. If mobile wallets could become the prior and main choice for Generation Z to make any money transfer or completing any transaction in the future, then Malaysia have a higher potential to become cashless society in the near future. However, there are two potential problems found out to be faced by Generation Z in Malaysia that become barriers for them to adopt E-wallets and this problem would be the problem statements addressed in this research.

Figure 1.1: E-wallets Usage Categories by Malaysians in 2020



Source: Trotman, J. (2021). *What are the E-wallet trends In Malaysia?*. Retrieved March 4, 2022, from https://www.nimbleappgenie.com/blogs/what-are-the-E-wallet-trends-in-malaysia/

Figure 1.2: E-wallets Usage Categories by Malaysians in 2020 and 2021



Source: Oppotus. (2021). *Malaysian E-wallet usage as we move towards recovery [2021]*. Retrieved March 4, 2022, from https://www.oppotus.com/malaysian-e-wallet-usage-towards-recovery-2021/

Firstly, the inconvenience of E-wallet has made E-wallet hard to become the primary transaction method for the Generation Z in Malaysia. In the opinions of many people, E-wallet payment is more convenience than cash payment. This has been proven by Birruntha (2021), who stated that in 2021, the Malaysian E-wallets users number had showed a rise of 80% as compared to 2020. The reason behind is the outbreak of Covid-19 that pushed consumers to a cashless payment method to avoid physical contact and spread of virus. However, there are also statements argue that E-wallets payment is inconvenience. E-wallet payment is only suitable for small payment amount which is usually below RM100. According to Trotman (2021), consumers used E-wallets the most for food and beverages, groceries, convenience stores purchase and food beverages which the paid amount is small (refer to Figure 1.1). Also, the study by Oppotus (2021) showed that the usage of E-wallet in hotels and flight tickets purchase is very low, which are 3% and 1% respectively (refer to Figure 1.2). Other than that, Moroson and DeFranco (2016) claimed that using mobile payment for hotels expenses is inconvenience due to the high amount of money. All of these situations of low usage

rate of E-wallet in large amount purchase are because that using E-wallet in big purchase will cause their E-wallet balance to be low and they have to top up the money again. Thus, it is argued that E-wallet is inconvenience as people can straight away use debit and credit card for payments as pay wave is now available in the market and people can just wave and go, and they need not to keep reloading money, only then they can pay for their purchases.

Besides inconvenience in making big amount purchase, E-wallet is also inconvenience due to its security concerns of users. Security concern is always the major concern when people desire to try out a new technology or system, and this will cause Generation Z in Malaysia to refuse using E-wallets for payments (Nizam et al., 2019). According to Tan (2019), non-users of E-wallets avoid to have a try on E-wallet, the dominating reason is security concerns, which contributed to 46% of the whole study. The non-users are concerning about the credit and debit fraud and missing transactions. Some of the common digital wallet frauds nowadays are social contest scams, fraudulent payment scams, and fraudulent customer service scams (Germania Insurance, 2020). According to Bernama (2020), there was RM600,000 lost to E-wallet scam in Kedah, Malaysia, the scammers offered a fake cash redemption between RM100 to RM300 for new E-wallet users. This is because Generation Z scared that they will lose their money while using E-wallets applications, especially most of them still have limited income sources, and some of them are getting their living expenses from their parents, student loan, or salary.

Secondly, lack of skill and knowledge among certain age group of Generation Z in Malaysia has discouraged them from using E-wallet as their primary transaction method as well. For Generation Z, some of them are still minor, which their age is below 18 years old. For minors, they can still own a joint bank savings account, which will be operated jointly under their parents or guardians' name. As said by Mohamed Rahdi (2021), there are still room for improvement about financial knowledge for minors in Malaysia, while this has caused most of the minors to not having strong decision-making power, especially in terms of financial decision. In line with this, most

of the parents of the minors will make financial decisions on their behalf, causing them to be more likely follow what their parents have decided for them. Since most of the minors' practices will be influenced by their parents' practices, if their parents or guardians do not have the habit in using E-wallet as their prior payment method, the minors will likely to not adopting E-wallet as well. Other than that, when minors are skeptical about an innovation, peer pressure may lead them to the adoption of the innovation. People will feel that it is safe to adopt an innovation when close peers persuaded them to do so (Rogers, 2003). Therefore, the adoption of E-wallet by the minors may encourage their close peers to adopt it as well. However, if people with similar age among the minors of Generation Z do not have the trend in using E-wallets, they may not influence each other in the adoption of E-wallet. In long term, the minors will have the habit to use cash payment only instead of E-wallet. Thus, the motivation to adopt E-wallet for the minors of Generation Z in Malaysia will be reduced if there are lack of skill and knowledge among the minors of Generation Z in Malaysia.

Moreover, for those Generation Z who are still below 18 years old, even they have the concept about cashless payment system, they are not eligible to access some of the internet banking facilities or payment services as the payment services are mainly developed for personal use but not child friendly (Jacobs, 2020). For example, Financial Process Exchange (FPX) Online Banking, one of the main channels to reload E-wallets' balance which allows real-time payments by direct debiting from the users' bank savings account, is only eligible for personal savings account, where the account's owner is aged 18-year-old and above (as shown in Appendix 1.1 to 1.4). Therefore, for the minors, they must need their parents or guardians' help and approval in the reloading of balance into their E-wallet account through the internet banking and this will reduce the frequency of the minors to explore E-wallet by their own. As results, Generation Z may have a habit to use cash payments as they found that it is quite troublesome to request their parents to reload E-wallet balance for them. When minors of Generation Z in Malaysia are lacking of skill and knowledge regarding the E-wallet and refuse to use E-wallet, eventually, children will end up with cash payments and the

adopt intention of E-wallet for the minors of Generation Z in Malaysia might be reduced. These issues of lack of skill and knowledge will be further discussed in this research using social influence, facilitating conditions and habit.

1.3 Research Questions

(i) Is there any significant correlation between convenience of E-wallet (i.e., performance expectancy, effort expectancy, and hedonic motivation) and adopt intention of E-wallet for Generation Z in Malaysia?

(ii) Is there any significant correlation between lack of skill and knowledge of E-wallet (i.e., social influence, facilitating conditions, and habit) and adopt intention of E-wallet for Generation Z in Malaysia?

1.4 Research Objectives

1.4.1 General Objective I

To analyze the correlation between convenience and adopt intention of E-wallet for Generation Z in Malaysia.

1.4.1.1 Specific Objectives

(i) To investigate the correlation between performance expectancy and adopt intention of E-wallet for Generation Z in Malaysia.

(ii) To discover the correlation between effort expectancy and adopt intention of E-wallet for Generation Z in Malaysia.

(iii) To determine the correlation between hedonic motivation and adopt intention of E-wallet for Generation Z in Malaysia.

1.4.2 General Objective II

To analyze the correlation between lack of skill and knowledge and adopt intention of E-wallet for Generation Z in Malaysia.

1.4.2.1 Specific Objectives

(i) To analyze the correlation between facilitating conditions and adopt intention of E-wallet for Generation Z in Malaysia.
(ii) To investigate the correlation between habit and adopt intention of E-wallet for Generation Z in Malaysia.
(iii) To determine the correlation between social influence and adopt intention of E-wallet for Generation Z in Malaysia.

1.5 Significance of Study

Cashless payment is the global payment trend in today's society, and E-wallet applications play a dominant role in achieving this trend. The benefits and advantages of E-wallet enable it to have a higher potential to accelerate the trend of cashless payment methods in future by the leadership of Generation Z. Malaysia government also aims to shift the country from a cash-based society to a cashless society in the near future. Therefore, this research is meaningful for different parties to have a deeper understanding about E-wallets adopt intention of Generation Z in order to promote and achieve a cashless society in Malaysia.

This research may assist the policy maker in Malaysia by providing information that enables the policy maker to recognize the current situation in the society and the current problems faced by Generation Z when they try to adopt E-wallet applications. Thus, the policy maker could take these problems and concerns from Generation Z into consideration by using this research as a reference, so they could address solutions for those concerns at the same time to develop better policies in the country. This action could encourage Malaysia to build a better environment and make E-wallet become more accessible within the country in order to encourage Generation Z to adopt E-wallet application as they are the major users the future, which is also the group of people that could lead the country to achieve the goal of shifting to a cashless society.

Furthermore, this research could benefit the researchers who are intended to investigate topics related to E-wallets, Generation Z, and cashless payment. This research could provide fundamental information about those related topics for the researchers, so they could acknowledge the issues that exist among Generation Z that would affect their motive to embrace E-wallet under the current situation in Malaysia. Besides, this research also provides the researchers with more knowledge on the concepts of operation and development trends for E-wallets in Malaysia. As a result, the readers would understand better regarding the Malaysia's E-wallets market, so they may use this research as a reference and apply those concepts as a base of their related research topics in order to come out with more solutions and related research papers that could promote cashless society in Malaysia.

1.6 Conclusion

The research background, problem statement, research objectives and questions as well as significance of study had been discussed in this chapter that allows the readers to obtain an overview of this research. More detailed information and review of dependent and independent variables will be discussed in the following chapter.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

This chapter will discuss in detailed the reviews done on various relevant theories related to this research. Also, details of explanatory and explained variables and hypothesis used in this research will be stated here.

2.1 Review of Relevant Theory

2.1.1 Unified Theory of Acceptance Use of Technology (UTAUT)

Being proposed by Venkatesh et al. (2003), UTAUT model is part of the Technology Acceptance Model (TAM), which aims to define the user's intention to use and adapt a new technology. According to Chao (2019), to propose this UTAUT model, Venkatesh et al. (2003) had took eight most frequently practiced behavioral intention models as their basis, which are Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB), combined TAM-TPB, Model of PC Utilization (MPCU), Motivational Model (MM), Social Cognitive Theory (SCT) and Innovation Diffusion Theory (IDT).

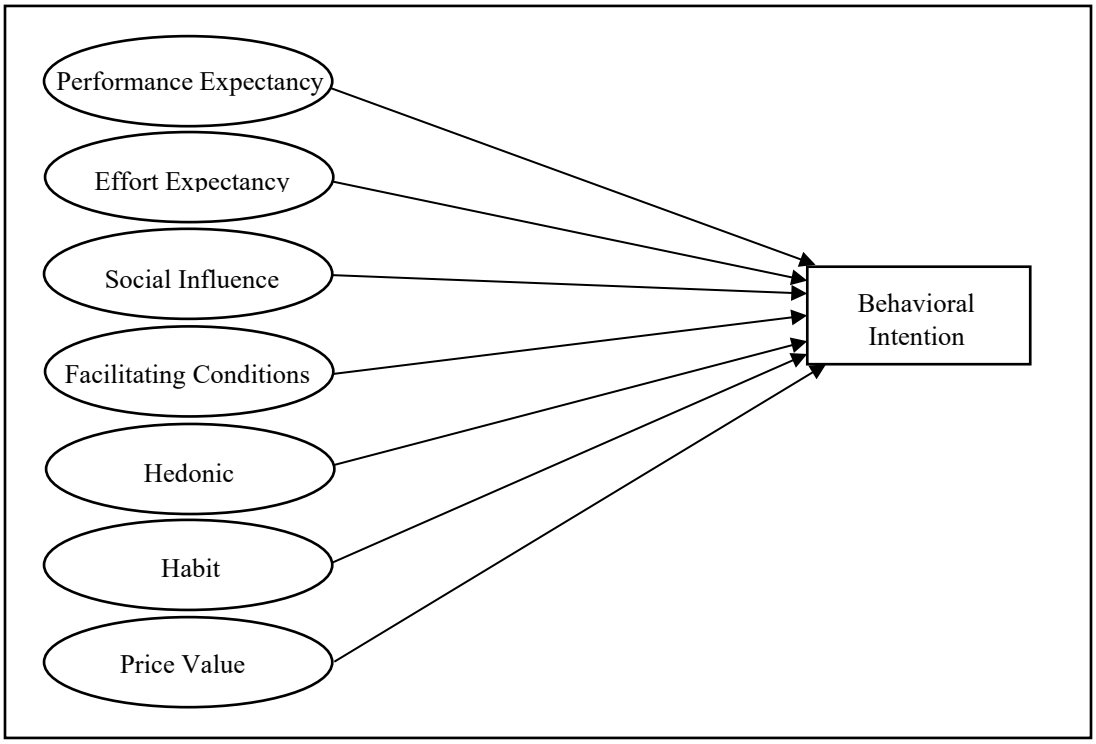
There are four constructs held under this UTAUT model, which are effort expectancy, facilitating conditions, performance expectancy and social influence. These four factors are directly affecting the behavioral use intention of a new technology (Ayaz et al., 2020). Other than that, factors like gender, age, experience and voluntariness of use act as the intermediate individual predicting the relationship between the four main elements and the behavioral intention (Venkatesh et al., 2003).

2.1.2 Unified Theory of Acceptance Use of Technology 2 (UTAUT2)

UTAUT2 is an extended version of UTAUT theory, which three more aspects had been added. These factors are habit, price value and hedonic motivation. Similar to the four main constructs in UTAUT, the relationship between these three added constructs is affected by the individual factors stated above (Chang, 2012). In brief, UTAUT2 are having seven constructs in total, and the previous research showed that the variance explained in the behavioral intention had improved after adding in the three new factors.

2.1.3 Theoretical Framework

Figure 2.1: Theoretical Framework of UTAUT2



Source: Lian, J., & Li, J. (2021). The dimensions of trust: An investigation of mobile payment services in Taiwan. *Technology in Society, 67*, 101753.

Lian and Li (2021) conducted research to investigate the determinants impacting the users' usage intention of m-payment in Taiwan. The determinants being examined are performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, habit and price value. The researchers proposed a positive correlation between all the seven factors and the usage intention of mobile payment by Taiwanese.

Among all the seven determinants, all the hypotheses designed are significant, except social influence. The low impact of social influence towards usage intention of m-payment is because of the low number of mobile payment users and the reason of them adopting mobile payment are not due to encouragement by people around them.

2.2 Review of Literature

2.2.1 Performance Expectancy (PE)

Performance expectancy refers to how using online payment system gives advantages to the users to conduct the online transactions in term of speed, security and convenience (Junadi & Sfenrianto, 2015). Besides, the study by Abrahão et al. (2016) claimed that performance expectancy has a positive impact on the intention to use e-payment. Other than that, according to Rahman et al. (2020), most of the Malaysian increase their usage of internet payment year by year. This is because Malaysian respondents believe that using technology system will boost their job performance. Moreover, the study of Abdullah et al. (2020) that investigates determinants affecting user acceptance towards cashless society in Malaysia, it showed that performance expectancy is the most influential determinant to the E-wallet acceptance. In conclusion, there are studies showed that the performance expectancy has positively affected the consumers adopt intention of E-wallets.

The positive impact of performance expectancy on the consumers adopt intention of e-wallets had also confirmed in Indonesia. Alalwan et al. (2017) studied the factors influencing adoption of mobile banking by Jordanian bank customers using UTAUT2 theory. The result for the study in Jordanian bank showed that performance expectancy positively affects the consumers adopt motive of E-wallets because mobile payment contributes more convenience for the user to access at anytime and anywhere. Furthermore, the research by Junadi and Sfrenrianto (2015) that investigated the factors affecting Indonesians' willingness to use e-payment. They found out that performance expectancy is positively related to the Indonesians' willingness to use e-payment.

2.2.2 Effort Expectancy (EE)

Junadi and Sfenrianto (2015) define effort expectancy as the easiness of using a system. From the research, the effort expectancy (EE) is positively influencing the acceptance of the electronic payment system in Indonesia. It means higher effort expectancy leads to higher adoption of the electronic payment system. Moreover, Angelina and Rahadi (2020) had applied the UTAUT theory to study the determinants that have impact on usage intention of E-wallet in Java, Indonesia. One of the factors in this research is effort expectancy (EE), and the results showed that it is effectively influencing consumer willingness to use mobile payment. Additionally, based on the research of Intarot and Beokhaimook (2018) that investigated the determinants that impact the E-wallet acceptance in Thailand, it showed that e-payment system is simple for them to use and conduct task without any practical skills. The result for this research showed that the effort expectancy is significant to the E-wallet acceptance in Thailand.

However, the research carried out by Abdullah et al. (2020) to study the determinants of user acceptance towards cashless society in Malaysia showed that effort expectancy is not powerful to impact the acceptance of E-wallet among Malaysian. Besides that, Ramírez-Correa et al. (2019) had also carried out research to investigate how the factors of UTAUT2 theory influence the acceptance of online games in Spain. From the results

generated, the effort expectancy is not significant to acceptance of mobile devices in Spain. The studies founded that the effort expectancy have no relationship to the consumers adopt intention e-payment. In summary, there were inconsistent findings on the effect of effort expectancy towards e-wallet adoption.

2.2.3 Social Influence (SI)

Venkatesh et al. (2003) defined social influence as the extent to which people important to a person believes that he or she should use a new technology or system. There are some researches show that social influence has a positive relationship with the intention to adopt of the usage of e-payment, but there are also studies claimed an indirect relationship between these two variables. From the research by Yang et al. (2012), it is stated that social influence brings some impact for the user to use e-payment applications before and after the adoption. After the adoption, social influence gives a negative influence to perceived risk in the mobile services in China. Therefore, the social influence in some aspects is indirectly affecting the usage intention of e-payment applications. Additionally, a study to investigate the factors that influence the use and acceptance of E-wallet based on UTAUT theory in Thailand had been conducted by Intarot and Beokhaimook (2018). The study found that social influence ends up having no effect on the acceptance and use of E-wallet in Thailand. These studies claimed a negative and insignificant correlation between social influence factor and consumers adopt intention of E-wallet.

In contrast, there are still many researches stating that social influence does directly influencing the adoption of new technology or new information system (Lee et al., 2009). In the research done by Teoh et al. (2020), aiming to investigate the determinants that influence the adoption of m-payment service in Malaysia, the results show that social influence positively influences the use of E-wallet. The researchers suggested the retailer to consider offering incentives to promote social influence in order to facilitate E-wallet adoption as people is very likely to share good news to their

important ones. For instance, points-based or dollar value reward plans could be used to encourage friend-to-friend references. Moreover, Slade et al. (2015) stated that through the studies on United Kingdom using UTAUT2 theory, social influence showed significant impacts to the adoption of mobile payment in Near Field Communication (NFC) technology. In a nutshell, there is no consensus from previous studies on the effect of social influence on e-payment adoption.

2.2.4 Facilitating Conditions (FC)

Facilitating conditions is the degree to which an individual believes that he or she has organizational and technical infrastructure to support the use of a system (Venkatesh et al., 2003). From the study of Widodo et al. (2019) which desired to identify the determinants that impact the digital wallet adoption in Indonesia, the result for this research stated that facilitating conditions significantly influence the digital wallet use intention. The reason explained for this significant relationship is that the provider of the application provides the users online helpdesk via online chat, email or phone to solve their difficulty when using the app. According the study of Tan et al. (2020) which purpose was to investigate the important determinants that influence of the adoption E-wallet among Malaysian undergraduates, the literature review of this research stated that the undergraduates or youngsters have highly acceptance to new technology system or services. An example given is that Malaysian government has provided more infrastructure to encourage Malaysian to use digital payment via the launch of E-Tunai Project. The result showed that the facilitating conditions impact significantly the willingness to use the digital wallet among undergraduates in Malaysia.

Other than that, research focusing on the determinants that influence the adoption of E-wallet in India had been carried out by Soodan and Rana (2020). In the early stage of UTAUT, the facilitating conditions means the more the knowledge and supports gained by users, the greater the chance that users will use and accept the new technology. Facilitating conditions is also a significant influencer to affect the adoption to

information system in previous system (Dwivedi et al., 2006). From the study by Yang et al. (2021), facilitating conditions share a significant relationship to the use of new technology in the digital era. This is because the infrastructure associated with E-wallets enables users to become more creative by using the e-learning system to make them easier, convenience and smart to upgrade new menus in app.

2.2.5 Habit (HA)

Habit refers to the extent to which a person believes the behavior to be automatic or the prior behavior to continuously impact their future behavior (Venkatesh et al., 2003). Based on the study of Sivathanu (2018), the researcher claimed that previous habit may significantly influence beliefs and future behavioral motive of an individual. The study result showed that habit is a significant determinant to influence behavioral intention of using digital payment. Furthermore, the study which aim to identify the determinants that influence the intention of using the E-wallet in Indonesia showed that habit is the most significant factor (Widodo et al., 2019). In addition, the study of Panwar and Tak (2017) that aimed to investigate the factors that influence the use of mobile app-based shopping in India, the results showed that the habit is an importance factor to influence the use of mobile app on shopping in India. Previous researches above claimed a significant and positive relationship between habit and consumers' intention to adopt E-wallet.

However, there are also researchers claimed that the habit is insignificant to the intention to use E-wallet (Laukkanen et.al., 2008). Reason for this is because the users do not have a basic learning on using the E-wallet. In short, they are not used to those advanced technology, so there is no habit built among them. Furthermore, the result of study by Soodan and Rana (2020) stated that habit shares a negative relationship with intention to use the E-wallet. This is because of the steps to use online payments gateway is large, causing the users to be extra-alert in using E-wallet such entering OTP to every transaction. The studies indicated that habit has negative and insignificant

relationship with the consumers' adopt intention of E-wallet. As a summary, there is no consistent findings on the relationship between habit and adopt intention of e-wallet.

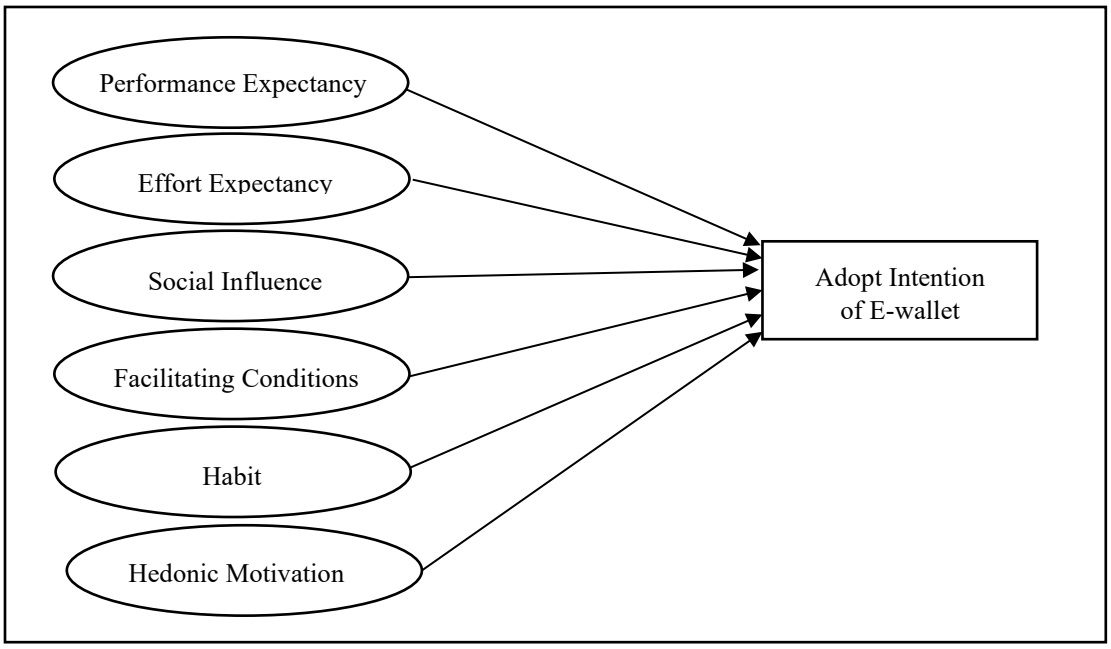
2.2.6 Hedonic Motivation (HM)

Hedonic motivation is the pleasure derived from using a technology (Venkatesh et al., 2003). Zhang et al. (2012) stated that hedonic motivation is an important factor of new technology adoption by end users. Hedonic motivation has the greatest power to encourage customers to adopt mobile banking by Generation Y (Boonsiritomachai et al., 2017). This is due to the fact that Generation Y have no problems in using mobile banking system such as practical skills and they are very enjoy using the mobile banking.

In the study of Soodan and Rana (2020) that desired to explore the determinants of adoption of E-wallet by the respondents in Punjab, India, hedonic motivation is defined as a factor focusing on the underlying utilities such as joy, happiness, and satisfaction. According to the scholars, hedonic motivations is significantly affecting the behavioral intention on the adoption of E-wallet. The same goes for the study of Panwar and Tak (2017), who concluded that hedonic motivation is valid towards the intention to adopt E-wallets due to Indonesian users' high satisfaction in engaging with the mobile shopping apps. It gives high benefits to the marketers to gain profits because the technology and infrastructure may help the consumers to create a better communication to marketer. In summary, most of the studies claimed that hedonic motivation is having a strong effect on e-wallet adoption.

2.3 Proposed Theoretical Framework

Figure 2.2: Proposed Theoretical Framework



The model by Lian and Li (2021) on UTAUT2 theory had been modified and the figure above is the proposed model for this research. Although there are total of seven determinants explained in UTAUT2 theory, however, price value factor was excluded from this research since the E-wallet is free to use. Thus, the determinants to be inspected in this research are performance expectancy, effort expectancy, social influence, facilitating conditions, habit and hedonic motivation. In short, this research investigates how these six factors proposed in UTAUT2 theory affect the adopt intention of E-wallet among Malaysian Generation Z. To be more specific, performance expectancy, effort expectancy and hedonic motivation are intended to examine if convenience of e-wallet affect the adopt intention of e-wallet for Malaysian Generation Z. Meanwhile, social influence, facilitating conditions and habit are acts as the determinants to investigate the relationship between lack of skill and knowledge and Generation Z e-wallet adopt intention.

2.4 Hypothesis Development

2.4.1 Performance Expectancy (PE)

According to Venkatesh et al. (2003), performance expectancy is how a person percepts that using certain system will help him or her to realize improvements in job performance. According to Koksal (2016), performance expectancy has a positive and strong impact on the adoption of information technology. Besides, Patil et al. (2020) found that performance expectancy relates positively to consumers' attitude. From here, PE is presumed to be impacting AD positively in this research. Therefore, the first hypothesis was created as below:

H_0: There is no significant relationship between PE and AD.
H_1: There is significant relationship between PE and AD.

2.4.2 Effort Expectancy (EE)

Effort expectancy is defined as the degree of ease in using certain system (Venkatesh et al., 2003). Several researchers have reported that effort expectancy has a positive effect on behavioural intention in different contexts (Sahu et al., 2007; Yeoh et al., 2011; Mohd-Isa et al., 2015; Panwar et al., 2017; Sivathanu, 2018). Besides, according to Alawan et al. (2017), effort expectancy positively influenced the Jordanian banking customers' intention to adopt Mobile Banking. From here, in this research, EE is presumed to be positively impacting AD. Therefore, the second hypothesis was formed as below:

H_0: There is no significant relationship between EE and AD.
H_1: There is significant relationship between EE and AD.

2.4.3 Social Influence (SI)

According to Venkatesh et al. (2003), social influence refers to the intensity to which a person's mindset will change will someone important to him or her encourage them to use certain new technology. According to Kulviwat et al. (2009), social influence is significantly influencing the adoption of high technology innovation. Besides, Savita Panwar (2017), Sivathanu (2018) and Yang (2010) stated that social influence and intention to use digital payment systems is positively correlated. From here, in this research, SI is presumed to affect AD positively. Therefore, the third hypothesis was created as below:

H_0: There is no significant relationship between SI and AD.
H_1: There is significant relationship between SI and AD.

2.4.4 Facilitating Conditions (FC)

Facilitating conditions is defined as how a person percepts that the technical and organizational infrastructure owned by them is capable to uphold the use of certain system (Venkatesh et al., 2003). According to Khechine et al. (2020), facilitating conditions vitally impacts the adoption of technology. Thus, this construct may influence the adopt intention of E-wallets as well. From here, in this research, FC is presumed to positively impacting the AD. Therefore, the forth hypothesis was made as below:

H_0: There is no significant relationship between FC and AD.
H_1: There is significant relationship between FC and AD.

2.4.5 Habit (HA)

Habit refers the extent to which a person believes certain behaviour to be automatic due to prior behaviour (Venkatesh et al., 2003). According to Ajzen et al. (2005), previous experiences may significantly impact the future behavioural intention as well as the belief of an individual. Furthermore, the researchers proved that habit will positively affects the behaviour of current use. From here, HA is presumed to affect the AD positively in this research. Therefore, the fifth hypothesis was created as below:

H_0: There is no significant relationship between HA and AD.
H_1: There is significant relationship between HA and AD.

2.4.6 Hedonic Motivation (HM)

Hedonic motivation refers to how using a technology leads to contentment (Venkatesh et al., 2003). Zhang et al. (2012) found that end users will more likely to adopt new technology if they perceive hedonic motivation. Furthermore, a study found that to boost up customers' inspiration to use mobile banking, the fun of using it is crucial (Boonsiritomachai et al., 2017). Since the UTAUT2 includes hedonic motivation as one of the important factors on the adopt intention of cashless payments, HM is presumed to affect AD positively and the sixth hypothesis is formed as below:

H_0: There is no significant relationship between HM and AD.
H_1: There is significant relationship between HM and AD.

2.5 Conclusion

Chapter 2 had discussed the review of theories and variables on past studies. Other than that, theoretical framework and hypothesis to be used in this research had been development also. In Chapter 3, the research methodology for this research will be discussed.

CHAPTER 3: METHODOLOGY

3.0 Introduction

This section will provide a glance on various methodology to be used and practiced in this research, which include design of research, method to collect data, techniques to analyze data and pilot test. All of these methodologies used are to obtain the research objective and answer the research questions designed in Chapter 1.

3.1 Research Design

In this research, quantitative data collection method was applied, where "numerical data" was collected using Likert scales, which are close-ended questions. The questionnaires were designed and shared to target respondents and used for data analysis. Questionnaires was chosen for data collection due to its usefulness, cost-effectiveness and time-effectiveness as questionnaires allow unmeasurable variables to be scaled and ease the analysis using the scaled number. For data analysis, partial least squares structural equation modeling (PLS-SEM) was applied, which is a method to compute complex relationships using path modelling and it allows latent variables to happen (Hair et al., 2019).

3.2 Data Collection Method

Primary data collection method would be used in this research for the purpose of collecting data. By collecting primary data in research, results obtained for this research would be more suitable to achieve the research objectives as compared to the secondary data which are derived from the existing sources. In this research, quantitative data

research would be used because the objectives of this research involve the study of variables, relationships among the variables, as well as hypotheses testing. Therefore, to obtain the primary quantitative data, survey was conducted by creating questionnaires.

For the process of collecting questionnaires, approval letter to conduct survey had been first obtained from the university (as shown in Appendix 3.1). After that, the members started designing the full set of questionnaires and getting check from the supervisor. Correction on any misleading words and unclear questions had been made after the discussion with the supervisor and the questionnaire was then being distributed to the target respondents. The questionnaires were designed using Google Form and were distributed by sharing the link of Google Form. One of the criteria of respondents are they must have experience in using E-wallet, the reason this research intended to emphasize this is because this can ensure that the respondents know what E-wallet is. By doing so, the respondents could understand the research well and therefore increases their interest in joining the data collection process as a respondent.

3.3 Design of Sampling

3.3.1 Target Population

This research was targeting the population of Generation Z who's aged between 16 to 25 years old. This group of people is targeted because the internet penetration among them is high at 98%, at the same time, 99% of them own a smartphone (Tjiptono et al., 2020). E-wallet can only be used when there are internet connection and smartphone. Besides, since this research studies the determinants impacting the E-wallet adoption among Generation Z in Malaysia, this research was targeting only the Malaysian who had used E-wallet for any type of transaction in the past. In short, 9,483,000 Malaysian

that aged between 16 to 25 years old that has used E-wallet are the target population in this research, according to Tjiptono et al. (2020).

3.3.2 Frame of Sampling and Location of Sampling

According to Särndal et al. (2003), frame of sampling is a list showing all the items in a population, meaning that what is age of sample, nationality of sample and familiarity of sample on E-wallet. This research was targeting Malaysian who aged between 16 to 25, which people call them Malaysian Generation Z. The targeted Malaysian includes students and working adults. Since Malaysian is the target group, the respondents may be from different states and different areas from all over Malaysia. Furthermore, sampling location is defined as the actual place where the researchers obtain the target sample (Särndal et al., 2003). For this research, the target sample would be obtained through online platform, meaning that the Google Form link of the questionnaires would be shared to the target sample.

3.3.3 Technique of Sampling

After comparing all the sampling techniques proposed by the professionals, the simple random sampling would be used for data collection. Through simple random sampling, information about a population would be collected by randomly selecting a sample from a population. This type of sampling method is suitable when the population is large and it can ensure that all individuals have the equal chance to be selected, at the same time, reduce the chance of systematic bias (i.e., certain groups are ignored and excluded).

3.3.4 Size of Sampling

Large size of sample is important because it helps the researchers to determine a more accurate mean value. In other word, large sample size would provide a better result later in running the relevant tests to get the results. According to Tjiptono et al. (2020), the population size of Generation Z in Malaysia as of year 2020 is 9,483,000. Referring to the book written by Krejcie and Morgan (1970), for size of population more than 1,000,000 with 95% confidence level and 5% margin of error, the required size of sample should be 384. Hence, the ideal size of sample is 384 for this research, and this research decided to have a sample size of 400, which is 16 more than the ideal sample size. In other word, this research aimed to collect data from 400 respondents in the survey.

3.4 Research Instrument

3.4.1 Questionnaire Design

For each set of questionnaires, there would be a total of 40 questions, including section A and section B. Section A would be mainly asking for demographic question, such as gender, age group, race, current employment status and handset. By this, descriptive analysis could be generated. For example, a mindset of which age group are more involved in E-wallet usage could be obtained based on the number of respondents among various age group. Also, collecting employment status make the researchers able to analyze that if regular income will induce the users' willingness to use E-wallet. As an example, how frequently people from different income level use E-wallet.

Section B was mainly for behavioral question with the use of 5-Point Likert Scale and the target respondents were requested to express their agreement level about various

statement. (Strongly agree=5; Agree=4; Neutral=3; Disagree=2; Strongly disagree=1). It is easy to understand and less time-consuming (Newson, 2021). Section B was separated into 7 sub-sections, which were titled as the independent variables and dependent variable, with 5 items for each construct (as shown in Appendix 3.3).

In section B, items 1 to 5 were categorized under the first sub-section, which is X_1, performance expectancy (PE). This sub-section is about the degree of agreement of respondents regarding how they perceive the use of E-wallet could help them to perform transactions better.

Item 6 to 10 were related to X_2, effort expectancy (EE). The items fall under this category are mainly correspond to the degree of agreement of respondents about how ease for them to learn, adopt and master the E-wallet for transactions. This research intended to examine if the E-wallet is ease to be used, will it increase the users' intention to adopt E-wallet, as what this research expected.

Item 11 to 15 were corresponding to social influence (SI). These items intended to measure how family, friends, colleagues and other important people will influence the respondents to use E-wallets for transactions. These items were used as most of the people have a mindset that people important to us can influence our behavior, thus this research desire to test for its validity.

Item 16 to 20 were asking about facilitating conditions (FC), examining if the facilitating conditions available in Malaysia are able to support the use of E-wallet. If most of the respondents have low agreement with the statements, it may indicate that Malaysian government is not well-prepared for the arrival of cashless society. Also, it is related to knowledge owned by respondents' in using E-wallet, if their knowledge is low, they might have low intention in using E-wallet.

Item 21 to 25 were related to X_5, habit (HA), relating to how prior behavior affects the respondents to continue using E-wallet for transactions. This is because when they are

already used to E-wallet before, they might intend to continue using it in the future as it has become their habit.

Item 26 to 30 were all about the X_6, hedonic motivation (HM), which is about the acquirement of joy and pleasure when someone use E-wallet. This research desire to measure that is that true fun and entertaining features of E-wallet will encourage the respondents to use E-wallet continuously.

Item 31 to 35 were all about the dependent variable, adopt intention of E-wallet (AD), which is the extent to which user will start using and keep using E-wallet in the future. These items are needed to link the independent variables to the possibility of respondents continue using E-wallet in the future.

3.4.2 Variable Measurements

Variables to be investigated in research were measured using various scales. The scale of the variables measured would affect the data analysis techniques and results, consequently affecting the conclusions made for the research. According to Sekaran (2020), nominal scale, ordinal scale, interval scale and ratio scale are the four main scales of measurement. Nominal scale and ordinal scale are usually suitable for running qualitative data while interval scale and ratio scale in quantitative data generation. For this questionnaire, the scale of measurements being applied are nominal, ordinal and interval.

3.4.2.1 Nominal Scale

According to Sekaran (2020), nominal scale is the scale used for variables whose difference can be qualified but not quantified. For example, name, occupation, blood type and so on. Nominal scale is not used for ranking variables, thus there is no ordering

of values implied. Nominal scale is mainly helping the researchers to group and classify the objects being measured. From the questionnaires designed for this research, demographic questions like gender, race, employment status and handset used are the nominal variables this research used. By using these questions, the respondents could be grouped easily, and used for descriptive analysis.

3.4.2.2 Ordinal Scale

Ordinal scale, very much similar to nominal scale, is applied for qualitative variables, but the variables can be ranked or ordered (Sekaran, 2020). Variables like grade, income level, education level are fall under ordinal variables. Ordinal scale allows researchers to compare items and items. In this questionnaire, the ordinal question designed was age group, which the respondents can be ordered according to their age. This question was set under the category of demographic information.

3.4.2.3 Interval Scale

Interval scale of measurement refers to a measurement for quantitative data. Interval scale measure variables along a scale, which the spacings between point and point share the same difference, and the researchers can interpret the difference (Sekaran, 2020). However, there is no true zero point would be found in interval scale, meaning that zero does not imply the mean of nothing. In this research, section B were all interval questions, where 5-Point Likert Scale was used and the respondents are requested to express their level of agreement about various statement. For instance, the 5-Likert scale was ranged as strongly agree (5), agree (4), Neutral (3), disagree (2) and strongly disagree (1).

3.4.3 Pilot Test

According to Wright (2021), it is critical to test the questionnaires first before using it for data collection, which can be done using pilot test. Pilot test is a statistical testing similar to the full data analysis, but in a small scale. It aims to identify potential problems and obstacles in the actual data analysis, i.e., to reduce the confusing questions, remove or reconstruct questions that are irrelevant or not objective, predetermine the resources needed in the actual study and so on.

There are a few steps need to be followed in running the pilot test. Firstly, create a pilot plan, i.e., we must clearly know which samples used, methodology and other related resources and goals engaged. Next, be prepared to run the pilot test. Find 30 respondents that fit the designed sample, share designed questionnaires, expect time taken for answering and install software needed and so on. Thirdly, deploy and run the pilot test, which is to distribute and collect the questionnaires and record time, key in data into designed software and run the analysis. The following step is to evaluate the pilot test. Outer loadings, Conbrach's alpha, composite reliability and average variance extracted would be run for pilot test.

Lastly, prepare for production deployment. improvements will be made on various weaknesses and strengths to make it better, more applicable, acceptable and objective. For example, correcting the grammar mistake or unethical wordings in the questionnaires when receiving unfavorable feedback from respondents. Also, through pilot test, data checking like identifying invalid or unobjective questions can be done, and we can either remove the questions or restructure the questions. Since there is no unfavorable response from respondents on existence of any unethical wordings or questions, no items or questions were removed or make correction in the questionnaire. Here came to the end of pilot test, and the research is said to be ready for the actual study (Wright, 2021).

3.5 TECHNIQUES OF DATA ANALYSIS

3.5.1 Descriptive Analysis

Descriptive analysis means a descriptive statistic summarizing the data collected which represents the population or sample of population. Through this analysis, the researchers will be able to describe the data according to specific group of people using various graph and charts (Wasserman & Faust, 1994). Also, the researchers are able to make the conclusion through this analysis (Thompson, 2009).

In this research, various tables, graphs and charts would be generated to analyze the data that are collected from the questionnaire. This descriptive analysis would be mainly used for demographic questions asked in section A, which conclusion of behavior differences among difference groups could be drawn. For example, the adopt intention of E-wallet might be difference according to group, age group, employment status and so on.

3.5.2 Partial Least Square-Structural Equation Modelling (PLS-SEM)

PLS-SEM is a data analysis technique used to estimate correlation between regressors and regressand. However, it is mostly used for large and complicated models with numerous amounts of elements, latent variables, and structural paths without imposing distributional assumptions on the data. It is a combination of multiple regression analysis and factor analysis, allowing estimation of structural relationships between observed variables and latent variables. In short, PLS-SEM is also an approach of SEM used to emphasize the prediction in the structuring models and provide explanations (Hair et al., 2019).

3.5.2.1 Outer Loadings

Outer Loadings Analysis is an indicator to obtain the factor loading for each indicator included. In the early stage, the researcher suggests to use a new established scale, which variables above 0.50 should be retained in the measurement model (Afthanorhan, 2022). The practice of removing items with value lower than 0.50 is because it brings a mean of low distribution of constructs towards the factors. From the research by Henseler et al. (2009), they estimated that every indicator variance must be interpretable by latent variables and they suggested an acceptable outer loading value of at least 0.7.

3.5.2.2 Reliability Test

Reliability means the extent that when a study is repeated, the same result will be generated. Three reliability tests would be used, which are Cronbach's alpha, composite reliability (CR) and average variance extracted (AVE).

3.5.2.2.1 Cronbach's Alpha

Cronbach's alpha is an internal consistency reliability, mainly practiced to test the reliability of Likert scale questionnaires which consist of latent variables (Tavakol & Dennick, 2011). Besides, it is a measure of reliability for models that are unweighted (Bonett & Wright, 2014). The value of measurement the alpha is between the scale 0 to 1. The value of Cronbach's alpha will explain the model relationship. The higher the value of α, the higher the internal consistency (Tavakol & Dennick, 2011). Formula for this test is $= \frac{N \cdot \bar{c}}{\bar{v} + (N-1) \cdot \bar{c}}$, and this result can be generated directly using SmartPLS software. It is recommended to have alpha coefficients of more than 0.8, as it means good internal consistency, and it indicates that the model is more reliable with higher alpha value (Sharma, 2016). Cronbach's alpha value lower than 0.7 should be avoided

as it is an indication of questionable and poor internal consistency, thus it should be rejected.

3.5.2.2.2 Composite Reliability (CR)

According to Bacon et al. (1995), composite reliability (CR) is an internal consistency reliability test, and it is much similar to Cronbach's alpha. This reliability test can be done using confirmatory factor analysis, available in SmartPLS software also. The formula of composite reliability test is $\frac{(\sum_{i=1}^{p} \lambda_i)^2}{(\sum_{i=1}^{p} \lambda_i)^2 + \sum_{i}^{p} V(\delta)}$. Models with the high value means a higher level of reliability. The acceptable level for composite reliability is between 0.60 and 0.70. It is good to have value of more than 0.70. However, value exceeding 0.95 should be avoided as it may indicators correlation between the error terms of indicators.

3.5.2.2.3 Average Variance Extracted (AVE)

Average variance extracted (AVE) is used to assess convergent validity which the average amount of variance in the dependent variables that a construct can explain (Santos & Cirillo, 2020). The formula for AVE is $AVE = \frac{(\sum_{i=1}^{k} \lambda_i)^2}{(\sum_{i=1}^{k} \lambda_i)^2 + \sum_{i=1}^{k} Var(e_i)}$. Besides, the AVE is tested to different latent constructs. A higher the average variance extracted means a higher convergent validity for the correlation between the latent variable and explained variables (Anderson & Swaminathan, 2011). From previous studies regarding this reliability test, the value of AVE above 0.5 is always in favor as it indicates that more that 50% of the variance can be explained (Gotz et al., 2010). When the value of average variance extracted indicates as satisfactory of indicators, the researcher can proceed to evaluate the measurement model.

3.5.2.3 Discriminant Validity

Besides reliability test, discriminant validity test also would be conducted in this research. Discriminant validity test is conducted with the purpose to determine whether there is overlapping problem among the latent variables. In general, this assessment has become one of the necessary conditions in a research study in order to figure out the relationship between latent variables (Henseler, Ringle & Sarstedt, 2014). There were two different methods to be used in this research to find out the discriminants validity, which are Heterotrait Monotrait ratio of correlations (HTMT) method and Fornell-Lacker criterion.

3.5.2.3.1 Heterotrait Monotrait Ratio of Correlations (HTMT)

According to Hosen et al. (2021), Heterotrait Monotrait ratio method is a discriminant validity tests that newly introduced after other common discriminant validity methods such as Fornell-Lacker method and cross loadings method, and it is applied for partial least squares structural equation modelling (PLS-SEM). HTMT could identify whether the latent variables are statistically different from each other (Benitez, Henseler, Castillo & Schuberth, 2020). Several studies have stated that HTMT ratio method have more advantages than other alternative. For further illustration, HTMT can reach up to 97% to 99% of specificity and sensitivity rates (Hamid et al., 2017).

HTMT ratio method could determine and interpret clearly about the correlation between two constructs. According to Benitez et al. (2020), there are two ways to determine discriminant validity by using HTMT ratio of correlation in general. Firstly, the value obtained from HTMT ratio method between two constructs become the basis for discriminant validity test. The value obtained should be smaller than 1, in order to show that the relationship between that particular two constructs is most likely to be different, and do not have high correlation between each other. If the value of HTMT value obtained is near to 1, it brings the meaning that the latent variables are lack of

discriminant validity, the latent variables have the problem of they themselves are unable be separated clearly between one and another, meaning that they are influencing each other.

Secondly, a threshold also should be predetermined before conducting the HTMT test. This happen because the value obtained from HTMT ratio method could be compared with the threshold (Hamid et al., 2017). The reason of this pre-determined threshold is because that if in the case of the value computed by HTMT ratio method is larger than the threshold determined, it indicates that there is discriminant validity problem, where the latent variables are lack of discriminant validity. However, there are different level of threshold suggested by different authors. In short, threshold of 0.85 and 0.90 are commonly applied and still debatable (Clark & Watson 1995; Kline, 2011; Gold et al. 2001; Teo et al. 2008, as cited in Henseler, 2014).

3.5.2.3.2 Fornell-Larcker Criterion

Fornell-Larcker criterion would be another method to determine whether the latent variables could reach to the discriminant validity, it is also a long-used method which was introduced for more than 30 years (Henseler, Ringle & Sarstedt, 2014). Fornell-Lacker criterion method claimed that if there are more variance on the indicator of a latent variable as compared to the variance that it shares with other constructs, then that particular latent variable could reach the discriminant validity. To evaluate the discriminant validity, the square root of AVE obtained must be made comparison with the connection of latent constructs. As a result, the square roots of AVE should have a higher value as compared to the other latent variables (Hamid, Sami & Mohmad, 2017). However, there are some studies mentioned that Fornell-Larcker criterion is ineffective because it depends on consistent factor loading estimates (Hosen et al., 2021).

3.5.2.4 Bootstrapping

Non-parametric system that analyse the statistical significance of various PLS-SEM results, as well as the path coefficients is known as bootstrapping. Since the assumptions of PLS-SEM allows the data to be not normally distributed, the parametric significance tests therefore cannot be practiced to test whether coefficients are significant. Thus, the non-parametric bootstrap procedure plays an important role to help the researchers to conclude that whether the estimated path coefficients in the PLS-SEM are significant or not significant (Davison & Hinkley, 1997).

In bootstrapping, subsamples with randomly drawn observations would be created from original set of data and the subsamples created are then used to estimate the PLS path model. This mechanism would be rerun until many randomly selected subsamples had been created. The bootstrap subsamples were then used to draw standard errors for the PLS-SEM results. Through the standard errors, the p-value would be able to calculate in order to access the PLS-SEM estimation results.

3.5.2.4.1 Path Coefficient

In this research, path coefficient would be employed to analyse the significance of relationship between the explanatory and explained variables. When the path coefficient is statistically significant, the dependent variable and those independent variables can be said to have causal connection.

According to Hair et al. (2017), path coefficients comprise of standardized values that ranged from "-1" to "+1". The negative sign indicates that there is a negative connection between the explanatory variables and explained variable. Moreover, positive effect of independent variables towards dependent variable would be signified by a positive sign. In addition, a value approaching 1 indicates a strong connection

between the explanatory variables and explained variable. In contrast, value close to 0 illustrates a weak relationship.

3.5.2.4.2 P-Value

In this research, significance of variables is concluded through the comparison with P-value. The significance level (α) was used as a pre-determined probability to compare with P-values of variables. The null hypothesis indicates that the variables are similar to each other and there are no differences between them. Therefore, rejection of null hypothesis would occur in the case of P-value of variables smaller than significance level. The significance level used in this research will be 5%.

3.6 Outcomes of Pilot Test

3.6.1 Outer Loadings

Table 3.1: Outcomes of Outer Loadings (Pilot Test)

	AD	PE	EE	SI	FC	HA	HM
AD1	0.828						
AD2	0.841						
AD3	0.855						
AD4	0.865						
AD5	0.856						
PE1		0.924					
PE2		0.785					
PE3		0.804					
PE4		0.854					
PE5		0.890					

EE1	0.939			
EE2	0.956			
EE3	0.823			
EE4	0.864			
EE5	0.910			
SI1		0.654		
SI2		0.730		
SI3		0.868		
SI4		0.887		
SI5		0.610		
FC1			0.906	
FC2			0.806	
FC3			0.894	
FC4			0.895	
FC5			0.841	
HA1				0.892
HA2				0.833
HA3				0.635
HA4				0.823
HA5				0.907
HM1				0.904
HM2				0.867
HM3				0.845
HM4				0.932
HM5				0.717

Source: Prepared by the authors

In pilot test of this research, outer loading was run to measure the reliability of the variables. The values that are higher than 0.70 shown in outer loadings results indicate that the reliability of the variables is internal consistent. Furthermore, the value of outer loadings that is below 0.50 should be removed from the study. The result of outer loadings showed that most of the variables fall that between the range of 0.70 to 0.95, thus it can be said that the data set is reliable. Other than that, there are only few

indicators having outer loadings value of below 0.70 which are SI1, SI5 and HA3. From some of the research, these indicators should be removed from the data set, however, there are also studies claiming that value above 0.50 is acceptable and can be remained (Afthanorhan, 2013). Therefore, the three items in remained in this research as the low in value may due to small sample size.

3.6.2 Cronbach's Alpha

Table 3.2: Outcomes of Cronbach's Alpha (Pilot Test)

Variables	Cronbach's Alpha Value
Adopt Intention of E-wallet	0.903
Performance Expectancy	0.908
Effort Expectancy	0.941
Social Influence	0.823
Facilitating Conditions	0.918
Habit	0.884
Hedonic Motivation	0.915

Source: Prepared by authors

Cronbach's alpha was also included with the aim to assess the data set's reliability. According to the research by Sharma (2016), Cronbach's alpha value in the range of 0.80 and 0.90 means "good" and "excellent" reliability and it is internal consistent. From the results, 5 out of 7 variables are having excellent reliability while 2 of them are having reliability with good internal consistency.

3.6.3 Composite Reliability (CR)

Table 3.3: Outcomes of Composite Reliability (Pilot Test)

Variables	Composite Reliability Value
Adopt Intention of E-wallet	0.928
Performance Expectancy	0.930
Effort Expectancy	0.955
Social Influence	0.869
Facilitating Conditions	0.939
Habit	0.912
Hedonic Motivation	0.932

Source: Prepared by authors

Composite reliability test had been run for pilot test also to test the internal consistency and data set reliability. It is stated that value above 0.60 is acceptable, but it is highly suggested to have value more than 0.70, which means the internal consistency has been achieved. From the results generated, the values are all above 0.80, meaning that there is high reliability of data and internal consistency of the data set. However, it should be taken extra eye on the effort expectancy variable as it is having a value higher than 0.955, and it indicates there is a high chance that the error terms of indicator are correlated (Bacon et al., 1995).

3.6.4 Average Variance Extracted (AVE)

Table 3.4: Outcomes of Average Variance Extracted (Pilot Test)

Variables	Average Variance Extracted Value
Adopt Intention of E-wallet	0.721
Performance Expectancy	0.728
Effort Expectancy	0.810
Social Influence	0.575
Facilitating Conditions	0.755
Habit	0.678
Hedonic Motivation	0.733

Source: Prepared by authors

Other than reliability test, average variance extracted test had been done in the pilot test also to examine the convergent validity of the variables. Gotz et al. (2010) suggested the constructs to have value more than 0.50 as it means that 50% of the variables are explainable. From the results generated from SmartPLS, all the AVE value are higher than 0.50, thus it could be concluded that the variables tested are having high validity and they are reliable.

3.6.5 Summary of Pilot Test Outcomes

Based on all the test conducted for the pilot test, all the results are acceptable and some are even showing good and excellent reliability and validity, it could be concluded that this research is reliable and valid. Therefore, it is fine to proceed to deeper research which involve a total of 400 responses.

3.7 Conclusion

Various method and techniques in running the data of research had been clearly discussed and explained in this chapter. The pilot test for this research had been run and the results of pilot test had been analysed. In the following chapter, the outcomes of full data sets will be analysed and discussed in detailed.

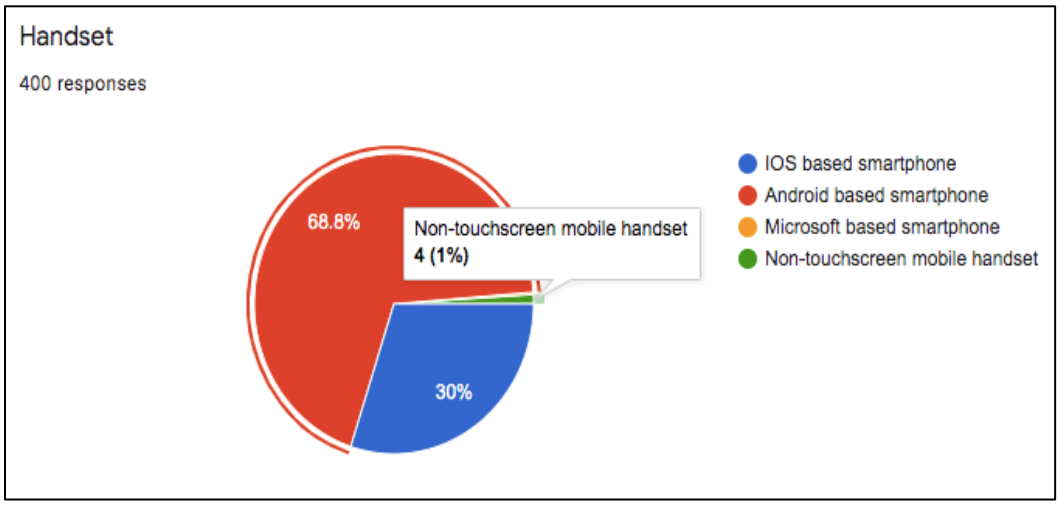
CHAPTER 4: DATA ANALYSIS

4.0 Introduction

Data analysis was performed according to the responses obtained from target sample. Descriptive analysis was conducted in order to define respondents' demographic biography. In this research, SmartPLS 3.3.7 software was used in purpose of finding out the determinants impacting the adopt intention of E-wallet among the Malaysian Generation Z. The results of PLS-SEM would be detailly justified in this section to deliver a clearer picture of this research.

4.1 Data Filtering

Figure 4.1: Filtering of data



Source: Prepared by the authors

This research had collected 400 responses from the questionnaires distributed through the online platform. The fifth question in the questionnaire is asking about the type of handset used by the respondents. Regrettably, as shown in figure 4.1 above, there are

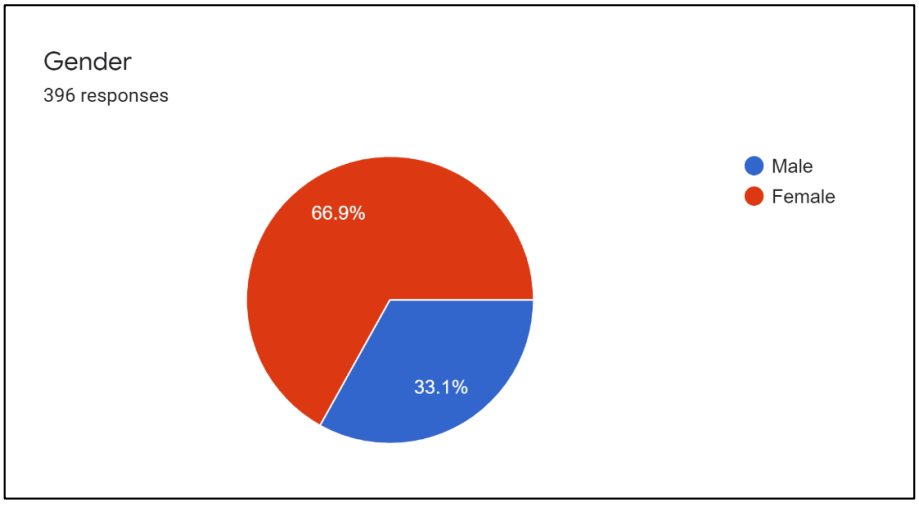
4 out of 400 respondents (1%) did not use smartphone. The responses of these 4 respondents had been detached from this research because the objective of this research is to analyse the adopt intention of E-wallet, that required smartphone to access. Therefore, 396 set of questionnaires had been used for data analysis.

4.2 Descriptive Analysis

Descriptive analysis represents the respondents' attributes and expresses their overall feedback. It was used to sort out the data pooled from the questionnaires. There were a few questions structured in this questionnaire, which includes demographic information of the respondents of questionnaire.

4.2.1 Gender

Figure 4.2: Statistics of Gender



Source: Prepared by the authors

Table 4.1: Statistics of Gender

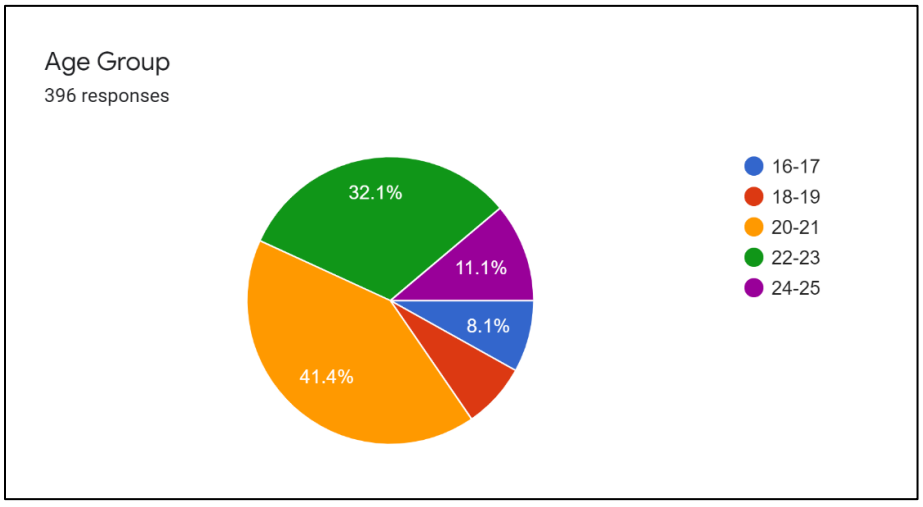
Gender	No. of Observations	Percentage (%)
Male	131	33.1
Female	265	66.9

Source: Prepared by the authors

Figure 4.2 and table 4.1 demonstrate the number and percentage of respondents in term of gender. The research targeted the population of Malaysian Generation Z aged between 16 and 25 years old and there are 396 respondents in this research. As shown in the results above, there are 265 female respondents (66.9%) and 131 male respondents (33.1%). Thus, there was more female respondents involved in this research, as compared to male respondents.

4.2.2 Age Group

Figure 4.3: Statistics of Age Group



Source: Prepared by the authors

Table 4.2: Statistics of Age Group

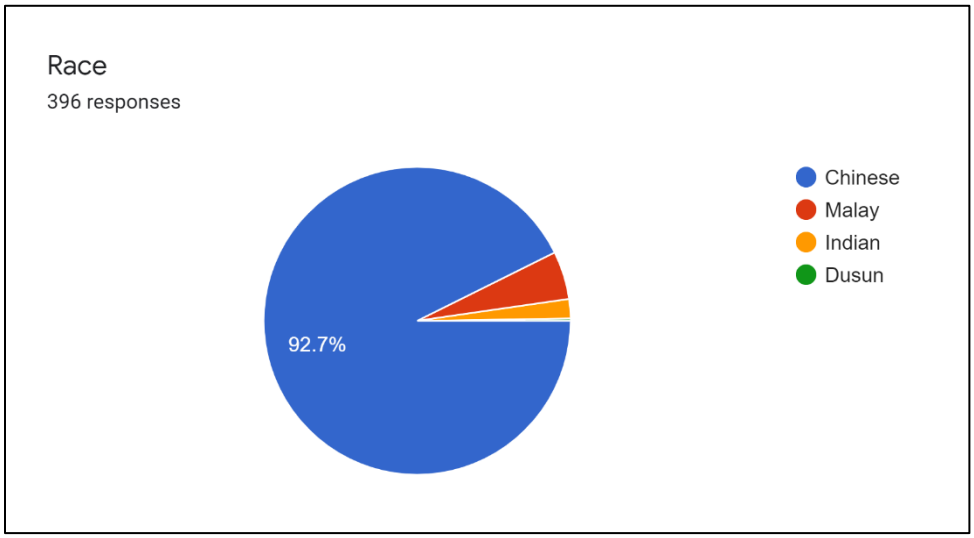
Age Group	No. of Observations	Percentage (%)
16-17	32	8.1
18-19	29	7.3
20-21	164	41.4
22-23	127	32.1
24-25	44	11.1

Source: Prepared by the authors

Figure 4.3 and table 4.2 show the percentage and number of observations received for the demographic information of age group. In this research, 20–21-year-old's age group has the highest percentage, which comprise of 164 respondents (41.4%). For 22-23-year-old's age group, it comprises a sum of 127 respondents (32.1%), representing the second highest percentage in this survey. Next, 44 of respondents (11.1%) are aged either 24 or 25 years old. For 16-17-year-old's age group, it occupies 8.1% of the respondents, which are 32 respondents. Whereas, 18-19-year-old's age group contains the lowest number of respondents, which are only 29 respondents that occupies 7.3% of the total respondents.

4.2.3 Race

Figure 4.4: Statistics of Race



Source: Prepared by the authors

Table 4.3: Statistics of Race

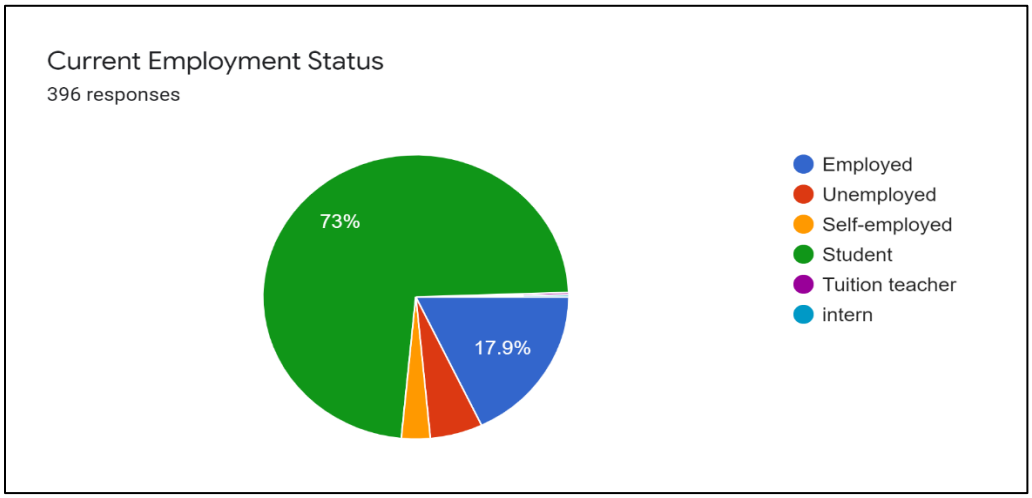
Race	No. of Observations	Percentage (%)
Chinese	367	92.7
Malay	20	5.1
Indian	8	2.0
Others (Dusun)	1	0.3

Source: Prepared by the authors

Figure 4.4 and table 4.3 indicate the number of observations and percentage of the respondents' race. According to the outcome generated, majority of them are Chinese, which contributed 92.7% from the chart, where 367 of them are Chinese out of total 396 respondents. Next, 20 respondents are Malay, which converted to 5.1% in the chart. Moreover, there are 8 respondents are Indian, which is 2% of the total respondents, and there is 1 respondent specifically stated as Dusun, which comprise of 0.3% of the result.

4.2.4 Current Employment Status

Figure 4.5: Statistics of Current Employment Status



Source: Prepared by the authors

Table 4.4: Statistics of Current Employment Status

Current Employment Status	No. of Observations	Percentage (%)
Employed	71	17.9
Unemployed	22	5.6
Self-employed	12	3.0
Students	289	73.0
Others (Intern & Tuition teacher)	2	0.6

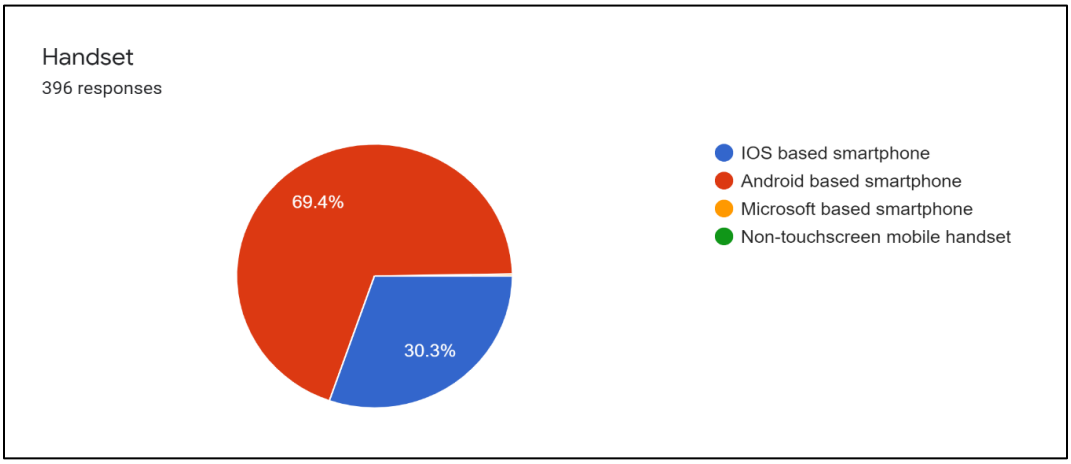
Source: Prepared by the authors

Figure 4.5 and table 4.4 illustrate the frequency and percentage of respondents' employment status. Among 396 respondents, student is the largest groups, which consists of 289 respondents (73%). Next, 71 respondents are currently employed, converted to 17.9% of 396 respondents. On the other hand, 22 respondents are unemployed, contributed 5.6% of total respondents. Besides, there are 12 respondents are self-employed which occupy 3% of the total respondents in this research. There are

also 2 respondents that specifically stated their occupation, which are intern and tuition teacher respectively, they are converted to 0.6% from 396 respondents.

4.2.5 Handset

Figure 4.6: Statistics of Handset



Source: Prepared by the authors

Table 4.5: Statistics of Handset

Handset	No. of Observations	Percentage (%)
IOS based smartphone	120	30.3
Android based smartphone	275	69.4
Microsoft based smartphone	1	0.3

Source: Prepared by the authors

Figure 4.6 and table 4.5 display the frequency and percentage of respondents' current handset. According to the outcome, Android based smartphone is the choice for most of the respondents in this research, it consists of 275 respondents, meaning that 69.4% of the total respondents are currently holding Android based smartphone, which is the

highest percentage group among 396 respondents. The second highest percentage group is IOS based smartphone, it comprises of 120 respondents (30.3%) out of the total respondents. Moreover, there is only 1 respondent uses Microsoft based smartphone, which converted to 0.3% of the total respondents.

4.3 Partial Least Square – Structural Equation Modelling (PLS-SEM)

4.3.1 Outer Loadings

Table 4.6: Results of Outer Loadings

	AD	PE	EE	SI	FC	HA	HM
AD1	0.838						
AD2	0.859						
AD3	0.844						
AD4	0.827						
AD5	0.835						
PE1		0.866					
PE2		0.885					
PE3		0.862					
PE4		0.881					
PE5		0.854					
EE1			0.877				
EE2			0.874				
EE3			0.879				
EE4			0.864				
EE5			0.890				
SI1				0.841			
SI2				0.845			

SI3	0.825			
SI4	0.879			
SI5	0.809			
FC1		0.767		
FC2		0.831		
FC3		0.867		
FC4		0.733		
FC5		0.836		
HA1			0.860	
HA2			0.882	
HA3			0.864	
HA4			0.841	
HA5			0.870	
HM1				0.915
HM2				0.904
HM3				0.887
HM4				0.887
HM5				0.833

Source: Prepared by the authors

Based on the above result shown by SamrtPLS 3.3.7, all the variables show values fall between the range of 0.70 to 0.95 represent the high satisfaction for outer loadings result. Besides that, the explained variable, adopt intention of E-wallet, shows the result that indicates high internal consistency. Moreover, the independent variables for the study also show high satisfaction for the value of outer loadings. The HM1 shows a value of 0.915, thus it is the most reliable element among all. All the items denote value higher than the benchmark of 0.70. Therefore, all the variables for outer loadings can be considered highly satisfied. From the table shown, there is no variable having value lower than 0.70, so none of the items would be eliminated from this model.

4.3.2 Reliability Test

4.3.2.1 Cronbach's Alpha

Table 4.7: Results of Cronbach's Alpha

Variables	Cronbach's Alpha Value
Adopt Intention of E-wallet	0.896
Performance Expectancy	0.920
Effort Expectancy	0.925
Social Influence	0.896
Facilitating Conditions	0.866
Habit	0.914
Hedonic Motivation	0.931

Source: Prepared by the authors

Based on the above table, Cronbach's Alpha value of hedonic motivation is the highest among all, implying that the variable of hedonic motivation is more reliable than others. Besides that, there are three variables considered as 'good' internal consistency which are adopt intention of E-wallet, social influence, and facilitating conditions as the results for these three constructs are in between 0.80 to 0.90. On the other hand, the remaining three variable show "excellent" results for Cronbach's alpha, which are 0.925, 0.920 and 0.914 for effort expectancy, performance expectancy and habit respectively. Since the results generated for Cronbach's Alpha showed that all values are fall between 0.80 to 0.95, all the variables are said to be having good internal consistency and high reliability.

4.3.2.2 Composite Reliability (CR)

Table 4.8: Results of Composite Reliability

Variables	Composite Reliability Value
Adopt Intention of E-wallet	0.923
Performance Expectancy	0.940
Effort Expectancy	0.943
Social Influence	0.923
Facilitating Conditions	0.904
Habit	0.936
Hedonic Motivation	0.948

Source: Prepared by the authors

From the outcome generated using SmartPLS 3.3.7, all the variables tested show composite reliability value exceeding 0.9, indicates high reliability for all variables. Among all seven items, hedonic motivation shows the highest composite reliability value, which is 0.948 while the lowest is facilitating conditions, which is 0.904. The composite reliability result for effort expectancy is the second highest, which is 0.943, followed by performance expectancy that is 0.940 in value. Moreover, habit shows a CR value of 0.936, which the reliability is high. The dependent variable in this research, adopt intention of E-wallet shares the same result with social influence, which the composite reliability value is 0.923. Based on the results generated for composite reliability, it could be concluded that the variables are highly reliable as all of them shows value above 0.9. Internal consistency is achieved in this research.

4.3.2.3 Average Variance Extracted (AVE)

Table 4.9: Results of Average Variance Extracted

Variables	Average Variance Extracted Value
Adopt Intention of E-wallet	0.707
Performance Expectancy	0.756
Effort Expectancy	0.769
Social Influence	0.706
Facilitating Conditions	0.653
Habit	0.745
Hedonic Motivation	0.785

Source: Prepared by the authors

According to the outcome, the variable with the highest AVE result is hedonic motivation while the lowest is facilitating conditions, similar to the composite reliability outcome. Hedonic motivation shows an AVE value of 0.785, meaning that 78.5% of the variables can be explained in the model and the convergent validity is obtained. The second highest AVE value is 0.769, shown by effort expectancy and followed by performance expectancy, which is 0.756. The AVE outcomes for habit, adopt intention of E-wallet and social influence are 0.745, 0.707 and 0.706 respectively. The lowest value is facilitating conditions, which is 0.653, indicates that 65.3% of the variance are explainable. As a short conclusion, 6 out of 7 variables shows an AVE value exceeding 0.70 and the remaining variable is show outcome of more than 0.60, this means that more than 60% of the variances are able to be explained in this model and means that convergent validity is obtained for this model.

4.3.3 Discriminant Validity

4.3.3.1 Heterotrait-Monotrait Ratio of Correlations (HTMT)

Table 4.10: Results of Heterotrait-Monotrait Ratio of Correlations (HTMT)

Variables	AD	EE	FC	HA	HM	PE	SI
AD							
EE	0.531						
FC	0.553	0.817					
HA	0.702	0.389	0.397				
HM	0.749	0.455	0.531	0.620			
PE	0.594	0.764	0.689	0.537	0.525		
SI	0.639	0.438	0.425	0.699	0.574	0.516	

Source: Prepared by the authors

Table 4.10 show the result of Heterotrait-Monotrait Ratio of Correlations. According to the outcome, all the values obtained from HTMT ratio of correlations are smaller than 1, the highest value would be the combination of EE and FC, which showed 0.817. The result conveys the meaning that the relationship between each combination of two particular constructs in this research are different, the latent variables are differentiable and do not have high correlation between each other. In additions, the alternative way to determine discriminant validity would be the values obtained from HTMT should not be higher than the pre-determined thresholds. Based on the result, there is no any combination of constructs exceed the lower threshold of 0.85. Therefore, the outcome obtained from of HTMT ratio of correlations signifies an absent of discriminant validity issue in this research.

4.3.3.2 Fornell-Larcker Criterion

Table 4.11: Results of Fornell-Larcker Criterion

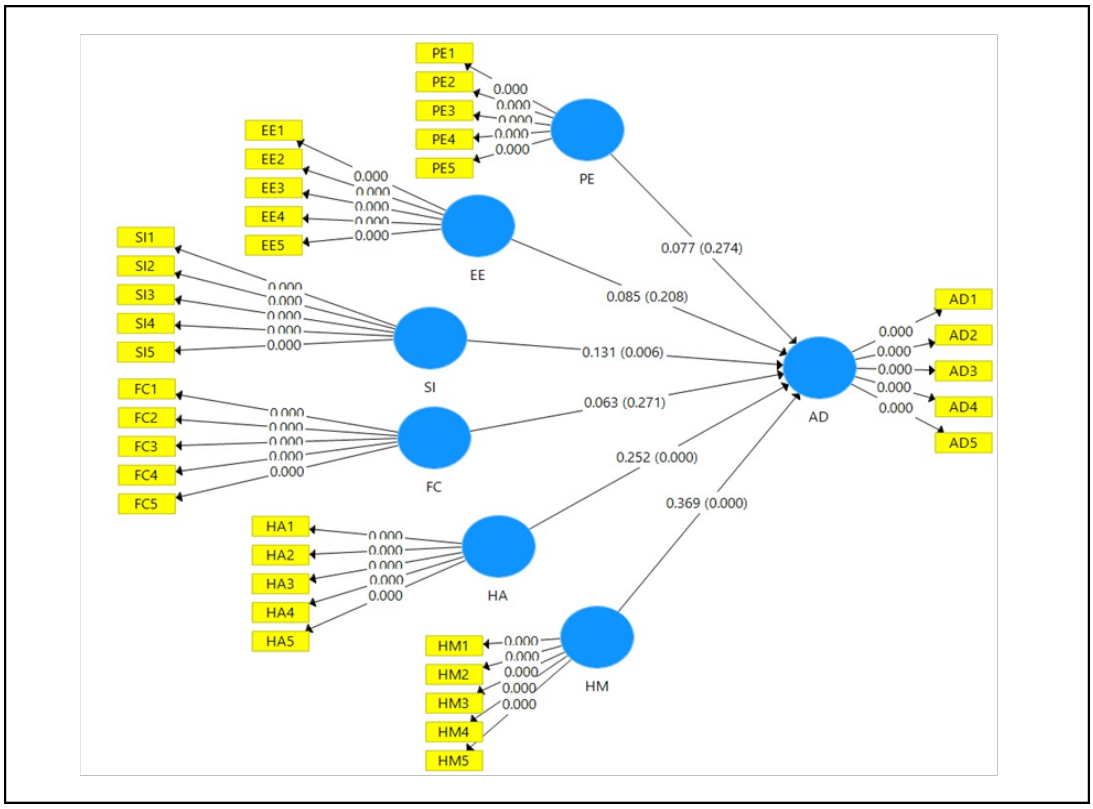
Variable	AD	EE	FC	HA	HM	PE	SI
AD	0.841						
EE	0.486	0.877					
FC	0.489	0.728	0.808				
HA	0.637	0.360	0.356	0.863			
HM	0.686	0.426	0.481	0.574	0.886		
PE	0.540	0.705	0.614	0.492	0.487	0.870	
SI	0.578	0.403	0.380	0.631	0.526	0.469	0.840

Source: Prepared by the authors

In order to have a more accurate result on discriminant validity test, Fornell-Larcker Criterion was conducted to investigate relationship between combinations of two constructs for each latent variables in this research. Based on the theory of Fornell-Larcker Criterion, the square roots of AVE must exceed other latent variables' value. Based on the outcome, the square roots of AVE for each variable combination are showed as the first value of each column, which are 0.841, 0.877, 0808, 0.863, 0.886, 0.870, and 0.840 respectively. All of these values are showed as the highest value as compared to other latent variable values in the same column. Thus, it can be concluded that the variables in this research have obtained discriminant validity.

4.3.4 Bootstrapping

Figure 4.7: Results of Bootstrapping



Source: Prepared by the authors

4.3.4.1 Path Coefficient

Table 4.12: Results of Path Coefficient

Constructs	Original Sample Value
PE → AD	0.077
EE → AD	0.085
SI → AD	0.131
FC → AD	0.063
HA → AD	0.252
HM → AD	0.369

Source: Prepared by authors

Table 4.13 shows the path coefficient for each variable. All the values are tested positive, indicating that increase in 1 unit of explanatory variables will lead to increase in explained variables. A higher path coefficient may indicate a greater effect of the variable towards the explained variables. Moreover, the outcomes show that HM has the greatest reaction towards AD, whereby a 1 unit increase in HM causes AD to rise by 0.369 units.

4.3.4.2 P-value

Table 4.13: Results of P-value

Constructs	P-value	Significant	Reject H_0
PE → AD	0.274	No	No
EE → AD	0.208	No	No
SI → AD	0.006	Yes	Yes
FC → AD	0.271	No	No
HA → AD	0.000	Yes	Yes
HM → AD	0.000	Yes	Yes

Source: Prepared by authors

P-value is used to conduct hypothesis testing in this research. The significance level in this research is assumed to be 5%. As shown in table 4.12, SI, HA and HM show the result of 0.006, 0.000 and 0.000 respectively. The P-value of these 3 variables is lower than the significance level of 0.05, indicating that there are relationships between these three explanatory variables and the explained variables. From here, it is concluded that social influence (SI), habit (HA) and hedonic motivation (HM) are influencing the adopt intention of E-wallet (AD) among Generation Z in Malaysia significantly. On the other hand, P-values of PE, EE and FC exceed the significance level of 0.05 which are 0.274, 0.208 and 0.271 respectively. From the results, a conclusion is made that the relationship of PE, EE and FC toward the AD are not significant.

4.4 Conclusion

In this chapter, all results showed were generated from SmartPLS 3.3.7 software. The data collected in the survey through questionnaires are used for the analysis of descriptive information, test of reliability, discriminant validity and bootstrapping, with the aim to test relationships and differences between the explanatory variables and the explained variables, as well as the demographic profile among Generation Z in Malaysia. In this chapter, social influence, habit and hedonic motivation are the only significant factors to influence adopt intention of E-wallet, and the reason behind will be justified in Chapter 5.

CHAPTER 5: DISCUSSION, IMPLICATIONS AND CONCLUSION

5.0 Introduction

Chapter 5 mainly focuses on the summarising and reasoning of statistics generated from Chapter 4 to test the validity of the hypothesis designed. Other than that, the limitations and recommendations associated with the statistical research results will also be made for potential future studies.

5.1 Summary of Statistical Analysis

This research had collected 400 questionnaires in total and only 396 responses were used in data analysis. The target sample of this research are Malaysian who born between year 1997 and 2005. For the pilot test of 30 samples, three reliability tests (i.e., Cronbach's Alpha, CR, and AVE) had been run and all the outcomes indicated that all the variables used in this research are highly reliable and meet internal consistency. Other than that, AVE outcomes also claimed that the model in this research has achieved the convergent validity. Hence, the outcomes of pilot test indicates that this research model is valid and reliable, therefore the 396 questionnaire responses were used.

In the investigation for the 396 data sets, both Cronbach's Alpha and CR showed that HM is the most significant reliable variables in internal consistency, followed by EE, PE, HA, SI and FC. The same goes to AVE test, where the variable with the highest convergent validity is HM factor. The second highest to the least valid variables are same as that is Cronbach's Alpha and CR. All outcomes are fall under "acceptable", "good" and "excellent" level of acceptance; thus, all the variables came out to be

satisfied so this research model is said to be reliable. Moreover, according to the outcomes obtained from HTMT and Fornell-Larcker Criterion, both tests showed that the latent variables studied in this model is not correlated and there is agreeable amount of discriminant validity in this model. So, multicollinearity problem was absent in this research model and this model is valid.

According to the bootstrapping results, p-value approach showed that only SI, HA and HM are significant factors influencing the AD of Malaysian Generation Z. In contrast, PE, EE and FC are not significantly affecting the AD. However, by using the path coefficient approach, all the independent variables are said to be positively influencing the AD for Malaysian Generation Z because all the path coefficients are shown in positive value. HM, HA and SI has more significant and greater impact on the AD as the value shown are all higher than 0.1. In contrast, the path coefficient values for PE, EE and FC are lower than 0.1. This means that even though these three factors are positively affecting the dependent variables, but the effect are very low. By combining the outcomes of p-value and path coefficients, there are only half of the constructs are significant while another half is insignificant. In short, SI, HA and HM are the significant factors that impact the AD for Malaysian Generation Z while the correlation between PE, EE and FC towards the AD for Malaysian Generation Z are not significant.

5.2 Discussion on Independents Variables

5.2.1 Performance Expectancy

The findings show that the correlation is not significant between PE and the AD among the Generation Z in Malaysia. This result shows an opposite site with the previous studies from Koksal (2016) that stated that performance expectancy impact strongly on information technology adoption. According to Venkatesh et al. (2003), performance expectancy refers to how beneficial the use of “certain system” is for an individual in

performing “certain activities”. Thus, there may be variations in this relationship's significance on distinct activities carried out by the E-wallet users when using the E-wallet or the E-wallet application that used by Generation Z in Malaysia. This assumption is uniform with the findings from Mahfuz et al. (2017) who also did not find a notable relationship between performance expectancy and the adoption of mobile banking services using the UTAUT2 model since they evaluated the relationship in general terms as well. To be more specific, when researchers study the adoption of mobile banking services instead of the adoption of specific mobile banking services, stated in the brand name, insignificant relationship will be found between performance expectancy and the adoption of mobile banking services.

5.2.2 Effort Expectancy

The findings show that the effect of EE towards AD among the Generation Z in Malaysia is not significant. This result shows an opposite site with the previous studies from Alawan et al. (2017) that confirmed that effort expectancy positively influences Jordanian banking customers’ desire in mobile banking adoption. According to The Star (2019), Malaysian Generation Z, with 99% smartphone ownership, is a digital native generation and they have not known life without the digital technologies and Internet access. In line with this, the absence of significant correlation between effort expectancy and adopt intention of E-wallet among Generation Z in Malaysia can be justified as Generation Z in Malaysia are more experienced users of smartphone and mobile applications. Since, they are more proficient to use complex systems, therefore, effort expectancy does not impact the adopt intention of E-wallet among the Generation Z in Malaysia.

5.2.3 Social Influence

The findings show that there would be a notable correlation between SI and the AD among Generation Z in Malaysia. Kulviwat et al. (2009) claimed that social influence is significantly influencing the adoption of high technology innovation. Therefore, this result shows that if people important to Generation Z persuade them to use certain new technology or system, it will significantly influence the adopt intention of Generation Z in E-wallet. The result was supported by the presumption of SI-AD relationship earlier in hypothesis development section in Chapter 2, which social influence is vital in stimulating adopt intention of E-wallet among the Generation Z. The relationship also supported by some previous studies from Panwar and Tak (2017), Sivathanu (2018) and Yang (2010), which stated that the effect of social influence towards the intention to use the digital payment systems is positive and strong.

5.2.4 Facilitating Conditions

The findings show that the correlation between FC and AD among Generation Z in Malaysia is insignificant. This result shows an opposite site with those previous studies mentioned earlier in this research. One of the previous studies stated that a comprehensive facilitating condition provided in a technology such as E-wallets, would be a crucial part to increase the intention of people in adopting E-wallet applications. This phenomenon happened because of the technical infrastructure available in the system to support and resolve problems faced by users while operating E-wallets could make E-wallets more accessible (Widodo et al., 2019). Conversely, the result in this research shows that facilitating conditions and the adopt intention of E-wallet among Generation Z in Malaysia not closely related, it was different with the presumed impact between facilitating conditions and adopt intention of Generation Z in this research. This might happen because compared to other generations, a portion of adults Generation Z have a certain level of knowledge about digital knowledge and ability to complete E-wallets payment independently as they are born as a unique group in the

digital era. Therefore, facilitating conditions do not influence the intention for Generation Z to adopt E-wallets.

5.2.5 Habit

The findings show that there would be a remarkable correlation between HA and the Generation Z's AD. According to concept of habit by Ajzen and Fishbein (2005), E-wallets could be the prior choice of people if he or she has previous experience in using it, because prior behavior could continuously impact future behavior of a person. Thus, this result shows if Generation Z has prior behavior of using E-wallet as their payment method, it will positively impact the intention of Generation Z to adopt E-wallets application. The result was supported by the presumption of relationship between habits and adopt intention of E-wallets earlier in this research, which habit plays one of the main roles in stimulating the adopt intention of E-wallet among Generation Z in Malaysia. The positive relationship is also supported by both of the previous studies from Sivathanu (2018) and Widodo et al. (2019). According to Widodo et al., (2019), habit shows the strongest impact on the motive and behavior of users to adopt digital wallets in Indonesia, while the discussion based on study conducted by Sivathanu (2018), users tend to use digital payments as future payment behavior in daily transactions as they are influenced by their previous habits.

5.2.6 Hedonic Motivation

The findings show that the reaction of HM on AD is remarkably positive, where if the Generation Z could perceive fun and they enjoy using a technology such as E-wallet, it will increase the intention for them adopting E-wallets applications and encourage them to use it. This result is tally with the presumption earlier where hedonic motivation positively affects the adopt intention. Besides, similar studies on mobile banking conducted by Boonsiritomachai et al., (2017) also found out that hedonic

motivation is the most vital aspect in encouraging users to explore and adopt a new technology. Similar studies such as Panwar and Tak (2017) and Soodan and Rana (2020) also stated that intrinsic utilities such as joy, enjoyment, or even entertainment are the important elements that could influence a person's willingness to try on and utilize E-wallets in daily life. One will be motivated to explore and use more frequently on a technology when a high level of satisfaction and enjoyment is perceived during the process of operation, which is exactly what the hedonic motivation is measured.

5.3 Implications of Study

In this research, the results generated were mainly focus on the variables which will directly affect the adopt intention E-wallet. So, parties like policy makers and researchers or scholars can get assistance from this research for future study.

5.3.1 Managerial Implication

This research plays an important role in providing parties with deeper understanding of E-wallets and Generation Z to promote and achieve a cashless society in Malaysia. Hedonic Motivation is the most powerful determinant of adopt intention of E-wallet in Generation Z. The Generation Z are more pleasure on using the E-wallet. Furthermore, the policy or rule maker can have better estimation on the environment and make E-wallet become more accessible to Generation Z to increase their intention to adopt E-wallet in future. Most people that are using E-wallet helps the country to achieve the goal of shifting to cashless society. For instance, government can promote more activities such as ways to use E-wallet to influence Malaysian's intention in adopting E-wallet. Also, policy maker can give more supports for the use of E-wallet to encourage the habit of digital transaction among Malaysians.

Apart from that, future researchers that are intended to investigate topics related to E-wallets, Generation Z, and cashless payment can take several benedictions from this research. The researchers can refer to this research for the future research. According to the result, the significant variables to affect adopt intention of E-wallet in this study are hedonic motivation, social influence, and habit. However, the variables such as effort expectancy, performance expectancy, and facilitating conditions showed insignificant impact to the adopt intention of E-wallet. From these results, future researchers may get an idea on relevant and usable factors in future studies related to this topic for various target respondents. As a result, the reader will have a deeper apprehension of Malaysia's E-wallets market. So, the future researcher will have more solutions when have references as a base in the study that can promote the cashless society in Malaysia.

5.4 Limitation of Study

Several limitations were discovered in this research. First and foremost, it is only targeting the Malaysian Generation Z population that have experiences in using E-wallet. Instead of the actual population of Generation Z in Malaysia, which are born between year 1997 to 2012, we are only targeting those who born between 1997 to 2005. By this, those who had no use E-wallet in the past and those who are too young to be studied are excluded. However, this research is aiming to observe the adopt intention of E-wallet for Malaysian Generation Z, therefore the findings of this research might not be suitable to conclude all the decision of the whole Malaysian Generation Z as about half of the population are being excluded from this research. Furthermore, intention to adopt in some degree means that someone had not use something before and they may think of using it later. Thus, excluding those who have no experience in using E-wallet limit this research from knowing the real perception of non-users and the possibility of them using E-wallet in the future.

In addition, race of respondents is also one of the limitations of this research. The responses collected for questionnaires are mostly from Chinese respondents, with a percentage of more than 90% because the researchers of this research are all Chinese and it is easier for them to get responses from Chinese. Therefore, this research may only be suitable to conclude the opinion of Chinese Generation Z, but not all Generation Z. This is because Malaysia is well-known with its multiracial characteristic. Although they are responses from Malay, Indian and Dusun, but the amount is too low, which is unable to bring big impact on the overall results. Therefore, it is hard to generalize the responses collected to fit the opinion of all Malaysian Generation Z as people's view and says on E-wallet can be distinct due to different race and background.

On the other hand, this research is accepting too much responses from students. There are more than 70% of respondents are students. Although it is publicly known that Generation Z is still young and still studying. However, the fact that working adults and students are viewing things differently must not be denied. Working adults are expose to a more real, challenging and stressful environment than students, hence their opinion on E-wallet might be very different from students, but their contribution to the overall result of this research is much lower than students as students Generation Z is dominating this research.

5.5 Recommendation for Future Studies

Some limitations are being observed throughout the research, some recommendations are provided for future studies to overcome the limitations. Firstly, to let the research be more suitable to conclude all the opinions of the whole Malaysian Generation Z, future experimenters are recommended to widen the age range of the target respondents. Future researchers can conduct similar research again in the future when the minor grow up because at that time, they will be Generation Z having power to use E-wallet. By doing so, the result of the study can be more reliable.

Secondly, different races and backgrounds would have different perceptions and opinions towards an innovative product such as the E-wallet. Therefore, future researchers need to ensure that the complete responses are collected equally from all the races of Malaysian Generation Z. Researchers are encouraged to distribute the questionnaires equally among the Malay, Chinese and Indian. Thus, the probability of collecting complete responses equally from all races can be increased. By ensuring that none of the races dominate the survey, the result can conclude the opinion of all Malaysian Generation Z from different races and backgrounds, and the reliability and validity of the research can be improved

Thirdly, the members of Generation Z are actually in different stages of their life cycle. Some are considered children, some are teenagers, and the rest are considered adults. Since people's view of something might be different depending on their current employment status and life experiences, future researchers need to collect an equal number of complete responses from the students and workers of the Malaysian Generation Z. To resolve the limitation of end result does not represent the opinion of whole Malaysian Generation Z with different employment status and life experiences, researchers are suggested to distribute the responses equally among those Generation Z who are working and those who are studying. By doing so, the research may be capable to obtain more exact and reliable results.

Last but not least, as mentioned above, since the intention to adopt to some degree means that someone had not used something before and may think of using it later, it is crucial to understand the actual perception of non-users who lack skill and knowledge in using E-wallets. Thus, future researchers are recommended to include those unskilled and unknowledgeable users as target respondents of the survey. Future researchers are suggested to ask a question in the questionnaire to confirm the adoption intention of E-wallet for the non-smartphone users and non-E-wallet users before they start to fill in the questionnaires. For example, do the non-smartphone users, or non-E-wallet users consider to use E-wallets in the future. If they consider using E-wallet in the near future, their responses need not be eliminated by the researchers. By doing so,

researchers can get an end result that represents the opinion of both users and non-users, and the result of the study can be more trustable.

5.6 Conclusion

In this research, the correlation between determinants that impact the adopt intention of E-wallet as the primary transaction method among Generation Z in Malaysia was being observed. There are six out of seven factors from the theory of Unified Theory of Acceptance Use of Technology 2 applied in this research to identify the relationship between those factors and adopt intention of Generation Z, which are performance expectancy, effort expectancy, social influence, facilitating conditions, habit, and hedonic motivation. Besides, partial least squares structural equation modeling (PLS-SEM) was applied as the method of data analysis by using Smart PLS version 3.3.7. PLS-SEM was used as the methodology in this research since latent variables existed and this method is effective in estimating complex relationships by using path modeling. Therefore, a questionnaire was distributed to Generation Z in Malaysia who aged from 16 to 25 years old by using a simple random sampling method. Consequently, data from 396 respondents were eligible to utilize as the data to conduct this research.

From the statistical analysis and major findings, there are some points to highlight in this research. Determinants such as social influence, habit and hedonic motivation are significant to the E-wallet adopt intention of Generation Z in Malaysia. On the other hand, factors such as performance expectancy, effort expectancy, and facilitating conditions are not significant in affecting adopt intention of Generation Z. With this result, it shows that the behavior of using E-wallets among Generation Z in Malaysia will highly impact the motive for them to adopt E-wallets as the main payment method in future. Meaning to say that, when Generation Z found that using E-wallets were common among them in completing a transaction, they will start to depend on using E-wallet applications among all other transaction methods. Moreover, pleasure derived

from using E-wallets and opinion from people who are precious to Generation Z also the crucial parts to influence their future behavioral intention in payment methods.

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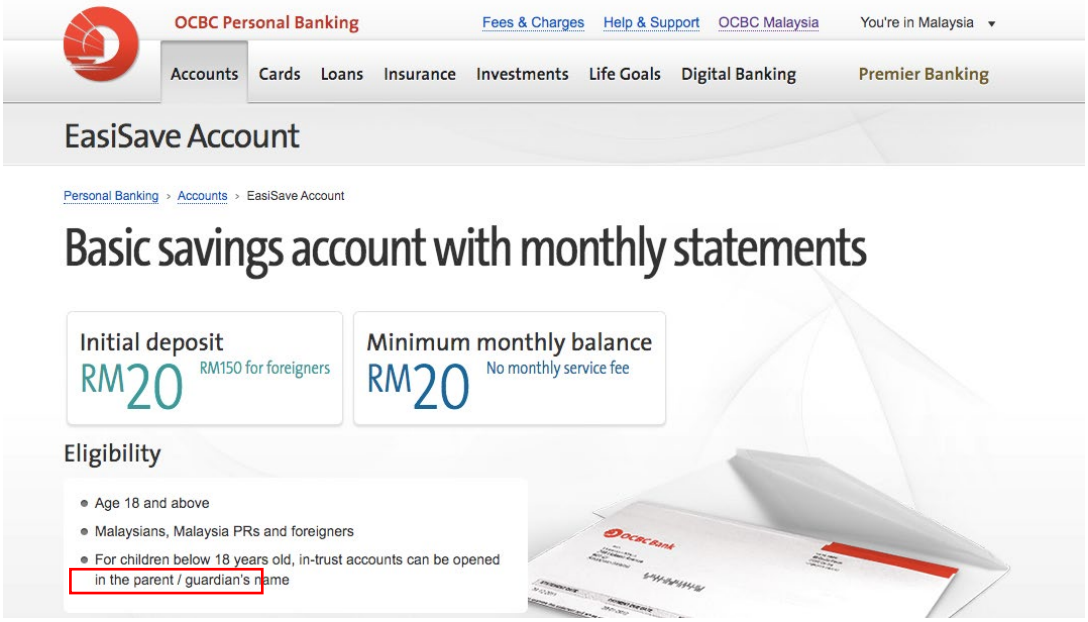
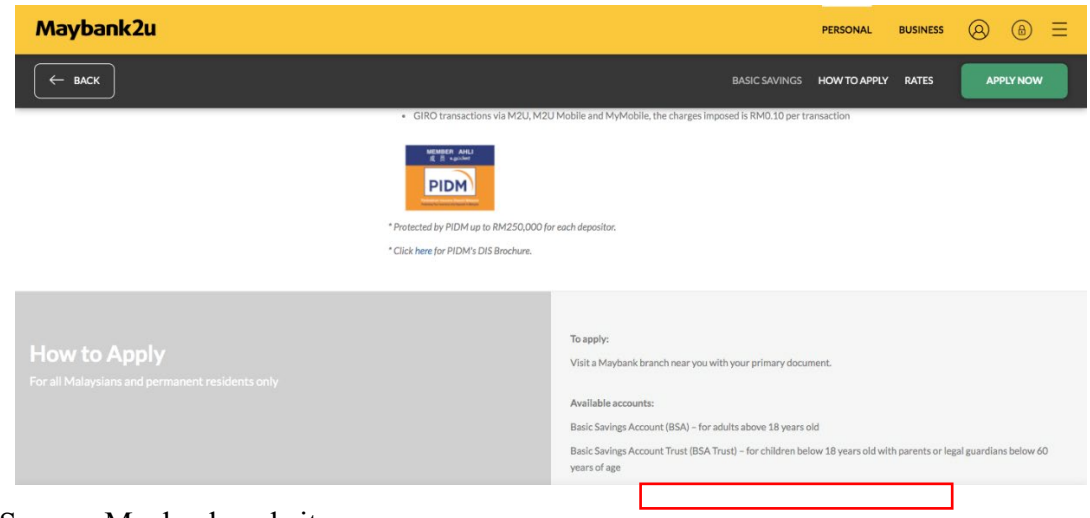
Appendices

Appendix 1.1: Basic requirements from OCBC Bank



Source: OCBC Bank website

Appendix 1.2: Basic requirements from Maybank



Source: Maybank website

Appendix 1.3: Basic requirements from Public Bank

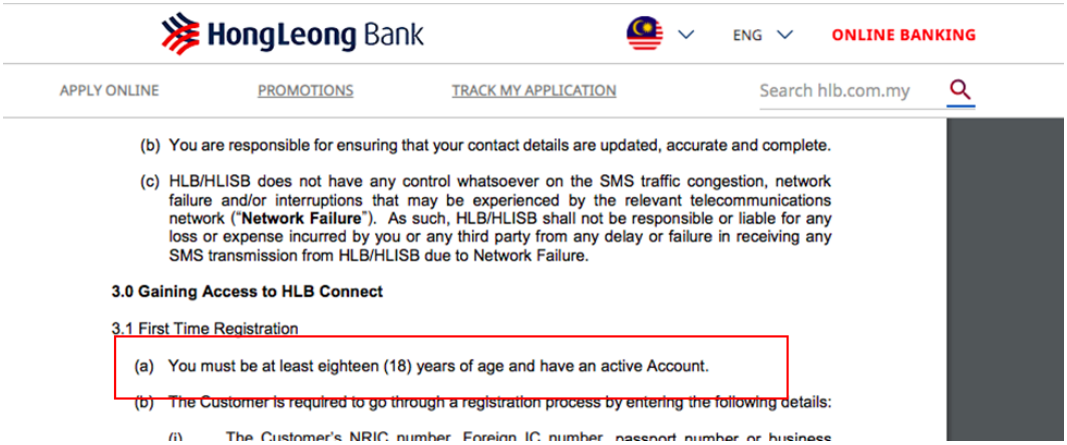
PBe Service

22.1 Individuals who apply for the PBe Service must be eighteen (18) years old and above.

22.2 I/We hereby agree and undertake to indemnify the Bank and at all times keep the Bank fully and completely indemnified from and against all claims and demands, actions and proceedings, loss and expenses including legal costs as between solicitor and client and all other liabilities of whatsoever nature or description which may be made or taken or incurred or suffered by the Bank in connection with or in any manner arising out of the said authorisation given by me/us. I/We further agree that my/our liabilities shall be a continuing liability and shall remain in full force and effect until the Bank's liabilities if any is fully discharged to the Bank's satisfaction. I/We have read and understood the Terms and Conditions of access to the Bank's PBe Service and hereby agree that the Terms and Conditions shall be binding on me/us. I/We hereby declare that there is no change to my/our latest mandate for the operation of the account(s) to the Bank.

Source: Public Bank website

Appendix 1.4: Basic requirements from Hong Leong Bank



(b) You are responsible for ensuring that your contact details are updated, accurate and complete.

(c) HLB/HLISB does not have any control whatsoever on the SMS traffic congestion, network failure and/or interruptions that may be experienced by the relevant telecommunications network ("**Network Failure**"). As such, HLB/HLISB shall not be responsible or liable for any loss or expense incurred by you or any third party from any delay or failure in receiving any SMS transmission from HLB/HLISB due to Network Failure.

3.0 Gaining Access to HLB Connect

3.1 First Time Registration

(a) You must be at least eighteen (18) years of age and have an active Account.

(b) The Customer is required to go through a registration process by entering the following details:

(i) The Customer's NRIC number, Foreign IC number, passport number or business

Source: Hong Leong Bank website

Appendix 3.1: Permission Letter to Conduct Survey

UNIVERSITI TUNKU ABDUL RAHMAN DU012(A)
Wholly owned by UTAR Education Foundation (200201010564(578227-M))
Faculty of Business and Finance
Jalan Universiti, Bandar Barat, 31900 Kampar, Perak
Phone: 05-468-8888 Fax: 05-466-7407
https://fbf.utar.edu.my/

16h August 2021

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 Finance (Honours)* 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
Chai Lee Wen	18ABB04240
Jamie Wong Hui Kun	18ABB04014
Low Xiao Pei	18ABB04370
Tan Ying Xin	18ABB02543

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

Thank you.

Yours sincerely,

Suki

Dr Kuah Yoke Chin
Head of Department
Faculty of Business and Finance
Email: kuahyc@utar.edu.my

Mr Lee Chee Loong
Supervisor
Faculty of Business and Finance
Email: lcloong@utar.edu.my

Administrative Address: Jalan Sg. Long, Bandar Sg. Long, Cheras, 43000 Kajang, Selangor D.E.
Tel: (603) 9086 0288 **Fax:** (603) 9019 8868 **Homepage: https://utar.edu.my/**

Appendix 3.2: Questionnaire in Google Form

E-wallet: Dominating Future Transaction Method for Generation Z in Malaysia

*Required

Dear respondents,

We are students of Bachelor of Finance (Hons) from Universiti Tunku Abdul Rahman (UTAR). We are currently conducting our Final Year Project with the title "E-wallet: Dominating Future Transaction Method for Generation Z in Malaysia". The questionnaires are intended to study the factors influencing the intention of adopting e-wallet as the primary transaction method for Generation Z in Malaysia. This study will analyze the linkage between Generation Z involvement and their intention to continue using e-wallet for payments in the future.

All of the information provided will be kept CONFIDENTIAL and be SAFEGUARDED in accordance with the Personal Data Protection Act 2010("PDPA"). Your response will be used solely for academic purposes and will not be identified in any data or reports. The questionnaires will take 5-10 minutes to complete. We appreciate your participation and cooperation in answering the questions.

If you have any inquiries, please feel free to contact any one of our group members:
Chai Lee Wen (010-2171329)
Jamie Wong Hui Kun (014-6912406)
Low Xiao Pei (016-4379299)
Tan Ying Xin (010-6345373)

PERSONAL DATA PROTECTION STATEMENT

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.

Notice:
1. Your personal data may be transferred and/or disclosed to third party and/or UTAR collaborative partners including but not limited to the respective and appointed outsourcing agents for purpose of fulfilling our obligations to you in respect of the purposes and all such other purposes that are related to the purposes and also in providing integrated services, maintaining and storing records. Your data may be shared when required by laws and when disclosure is necessary to comply with applicable laws.

2. Any personal information retained by UTAR shall be destroyed and/or deleted in accordance with our retention policy applicable for us in the event such information is no longer required.

3. UTAR is committed in ensuring the confidentiality, protection, security and accuracy of your personal information made available to us and it has been our ongoing strict policy to ensure that your personal information is accurate, complete, not misleading and updated. UTAR would also ensure that your personal data shall not be used for political and commercial purposes.

Consent:
1. By submitting this form you hereby authorise and consent to us processing (including disclosing) your personal data and any updates of your information, for the purposes and/or for any other purposes related to the purpose.

2. If you do not consent or subsequently withdraw your consent to the processing and disclosure of your personal data, UTAR will not be able to fulfill our obligations or to contact you or to assist you in respect of the purposes and/or for any other purposes related to the purpose.

3. You may access and update your personal data by writing to us at hkwong@1utar.my

1. Acknowledgment of Notice *

Mark only one oval.

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

Section A: Demographic Information

2. Gender *

Mark only one oval.

- ◯ Male
- ◯ Female

3. Age Group *

Mark only one oval.

- ◯ 16-17
- ◯ 18-19
- ◯ 20-21
- ◯ 22-23
- ◯ 24-25

4. Race *

Mark only one oval.

- ◯ Chinese
- ◯ Malay
- ◯ Indian
- ◯ Other: _____

5. Current Employment Status *

Mark only one oval.

- ◯ Employed
- ◯ Unemployed
- ◯ Self-employed
- ◯ Student
- ◯ Other: _____

6. Handset *

Mark only one oval.

- ◯ IOS based smartphone
- ◯ Android based smartphone
- ◯ Microsoft based smartphone
- ◯ Non-touchscreen mobile handset
- ◯ Other: _____

Section B: Behavioral Information

Based on your experience on e-wallet, please choose the most appropriate option that best indicate your agreement level about the following statements. *
[Strongly agree = 5; Agree = 4; Neutral = 3; Disagree = 2; Strongly disagree = 1]

7. B1: Performance Expectancy (PE) *

Mark only one oval per row.

	5	4	3	2	1
Using e-wallet helps me accomplish transaction more quickly.	◯	◯	◯	◯	◯
Using e-wallet increases my transaction productivity.	◯	◯	◯	◯	◯
E-wallet saves my times in making transactions.	◯	◯	◯	◯	◯
Using e-wallet improves my overall transaction performance.	◯	◯	◯	◯	◯
E-wallet is useful for me to make transactions in my daily life.	◯	◯	◯	◯	◯

8. B2: Effort Expectancy (EE) *

Mark only one oval per row.

	5	4	3	2	1
Learning how to use e-wallet for my transactions is easy for me.	◯	◯	◯	◯	◯
I find e-wallet easy to use.	◯	◯	◯	◯	◯
The usage of e-wallet is clear and understandable.	◯	◯	◯	◯	◯
I find e-wallet flexible to interact with.	◯	◯	◯	◯	◯
It is easy for me to use e-wallet.	◯	◯	◯	◯	◯

Section B: Behavioral Information (Continued)

Based on your experience on e-wallet, please choose the most appropriate option that best indicate your agreement level about the following statements. *
[Strongly agree = 5; Agree = 4; Neutral = 3; Disagree = 2; Strongly disagree = 1]

9. B3: Social Influence (SI) *

Mark only one oval per row.

	5	4	3	2	1
People who are important to me think that I should use e-wallet.	◯	◯	◯	◯	◯
People whose opinions that I value prefer that I use e-wallet.	◯	◯	◯	◯	◯
People (family, colleagues, friends) around me frequently use e-wallet for transactions.	◯	◯	◯	◯	◯
People (family, colleagues, friends) around me encourage and recommend me to use e-wallet.	◯	◯	◯	◯	◯
People (family, colleagues, friends) around me can influence my behavior in using e-wallet.	◯	◯	◯	◯	◯

10. B4: Facilitating Conditions (FC) *

Mark only one oval per row.

	5	4	3	2	1
I have the mobile network, mobile devices etc. necessary to use e-wallet.					
I know how to use e-wallet.					
My mobile operating system can support the use of e-wallet application.					
I can get help from others when I have difficulties with e-wallet.					
Instructions concerning use of e-wallet are available to me.					

Section B: Behavioral Information (Continued)

Based on your experience on e-wallet, please choose the most appropriate option that best indicate your agreement level about the following statements. *
[Strongly agree = 5; Agree = 4; Neutral = 3; Disagree = 2; Strongly disagree = 1]

11. B5: Habit (HA) *

Mark only one oval per row.

	5	4	3	2	1
The use of e-wallet has become a habit for me.					
I am addicted to using e-wallet.					
I must use e-wallet for transactions.					
Using e-wallet has become common to me.					
E-wallet is my first choice among all transaction methods.					

12. B6: Hedonic Motivation (HM) *

Mark only one oval per row.

	5	4	3	2	1
Using e-wallet is fun.	◯	◯	◯	◯	◯
Using e-wallet is enjoyable.	◯	◯	◯	◯	◯
Using e-wallet is entertaining.	◯	◯	◯	◯	◯
Using e-wallet is cool.	◯	◯	◯	◯	◯
Using e-wallet is smart.	◯	◯	◯	◯	◯

Section B: Behavioral Information (Continued)

Based on your experience on e-wallet, please choose the most appropriate option that best indicate your agreement level about the following statements. *
[Strongly agree = 5; Agree = 4; Neutral = 3; Disagree = 2; Strongly disagree = 1]

13. B7: Adopt Intention of E-wallet (AD) *

Mark only one oval per row.

	1	2	3	4	5
I intend to start using e-wallet.	◯	◯	◯	◯	◯
I intend to continue using e-wallet in the future.	◯	◯	◯	◯	◯
I plan to use e-wallet frequently.	◯	◯	◯	◯	◯
E-wallet can substitute cash payment.	◯	◯	◯	◯	◯
E-wallet can support existing payment methods.	◯	◯	◯	◯	◯

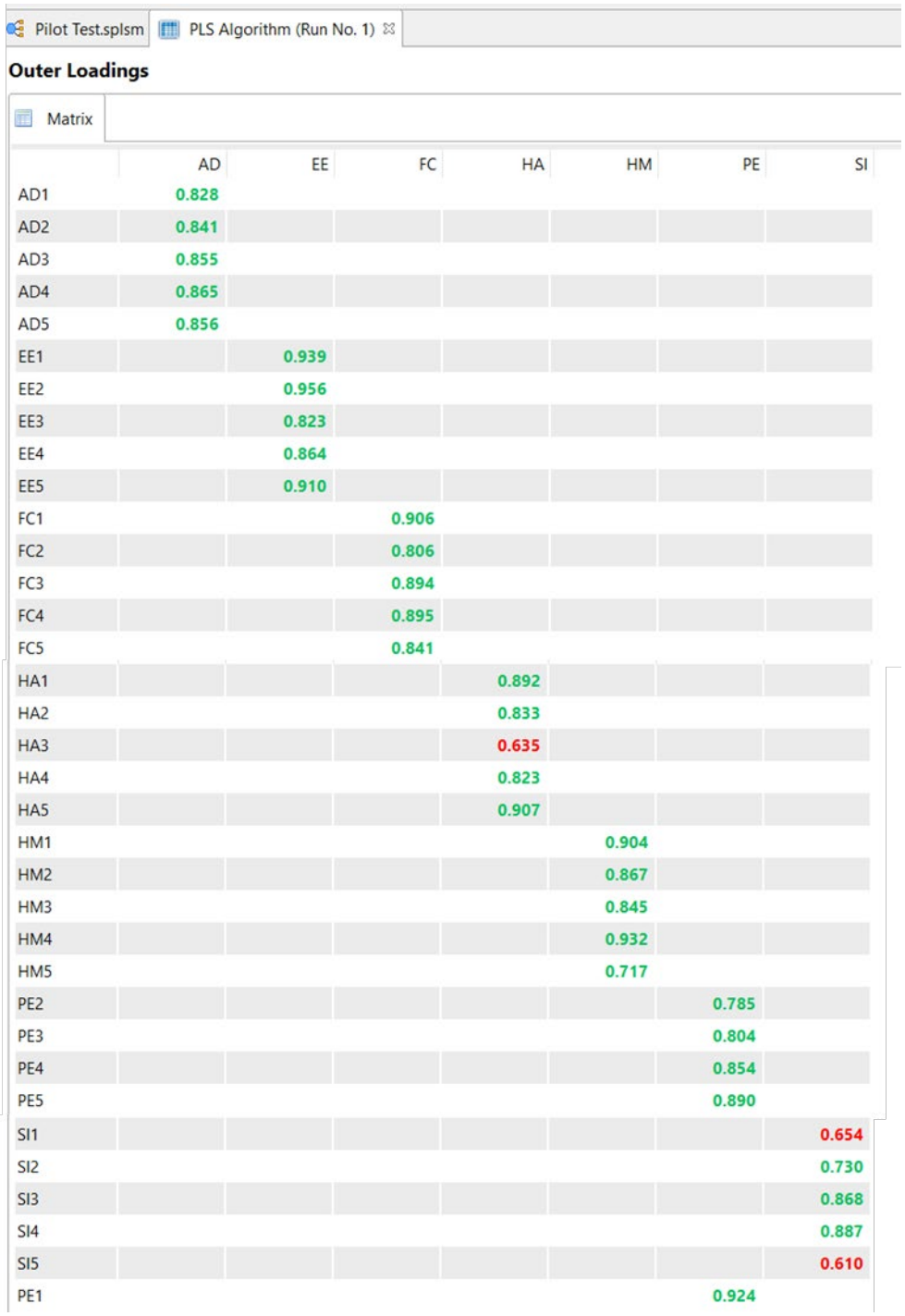
Appendix 3.3: Source of Questionnaires

Variables		Questions	Sources
Performance Expectancy	PE1	Using E-wallet helps me accomplish transaction more quickly.	Patil et al. (2020); Ramírez-Correa et al. (2019)
	PE2	Using E-wallet increases my transaction productivity.	
	PE3	E-wallet saves my times in making transactions.	Boonsiritomachai & Pitchayadejanant (2017)
	PE4	Using E-wallet improves my overall transaction performance.	Patil et al. (2020)
	PE5	E-wallet is useful for me to make transactions in my daily life.	Morosan et al. (2016); Ramírez-Correa et al. (2019)
Effort Expectancy	EE1	Learning how to use E-wallet for my transactions is easy for me.	Morosan et al. (2016); Patil et al. (2020); Ramírez-Correa et al. (2019)
	EE2	I find E-wallet easy to use.	
	EE3	The usage of E-wallet is clear and understandable.	
	EE4	I find E-wallet flexible to interact with.	
	EE5	It is easy for me to use E-wallet.	
Social Influence	SI1	People who are important to me think that I should use E-wallet.	Morosan et al. (2016); Ramírez-Correa et al. (2019)
	SI2	People whose opinions that I value prefer that I use E-wallet.	

	SI3	People (family, colleagues, friends) around me frequently use E-wallet for transactions.	Lew et al. (2020)
	SI4	People (family, colleagues, friends) around me encourage and recommend me to use E-wallet.	Ajzen (2005)
	SI5	People (family, colleagues, friends) around me can influence my behavior in using E-wallet.	Boonsiritomachai & Pitchayadejanant (2017)
Facilitating Conditions	FC1	I have the mobile network, mobile devices etc. necessary to use E-wallet.	Morosan et al. (2016); Ramírez-Correa et al. (2019)
	FC2	I know how to use E-wallet.	
	FC3	My mobile operating system can support the use of E-wallet application.	
	FC4	I can get help from others when I have difficulties with E-wallet.	
	FC5	Instructions concerning use of E-wallet are available to me.	Patil et al. (2020)
Habit	HA1	The use of E-wallet has become a habit for me.	Morosan et al. (2016); Ramírez-Correa et al. (2019)
	HA2	I am addicted to using E-wallet.	
	HA3	I must use E-wallet for transactions.	
	HA4	Using E-wallet has become common to me.	
	HA5	E-wallet is my first choice among all transaction methods.	
	HM1	Using E-wallet is fun.	

Hedonic Motivation	HM2	Using E-wallet is enjoyable.	Morosan et al. (2016); Ramírez-Correa et al. (2019)
	HM3	Using E-wallet is entertaining.	
	HM4	Using E-wallet is cool.	
	HM5	Using E-wallet is smart.	
Adopt Intention of E-wallet	AD1	I intend to start using E-wallet.	Morosan et al. (2016); Patil et al. (2020); Ramírez-Correa et al. (2019)
	AD2	I intend to continue using E-wallet in the future.	
	AD3	I plan to use E-wallet frequently.	
	AD4	E-wallet can substitute cash payment.	
	AD5	E-wallet can support existing payment methods.	

Appendix 3.4: Outer Loadings Results for Pilot Test



Pilot Test.splsm | PLS Algorithm (Run No. 1)

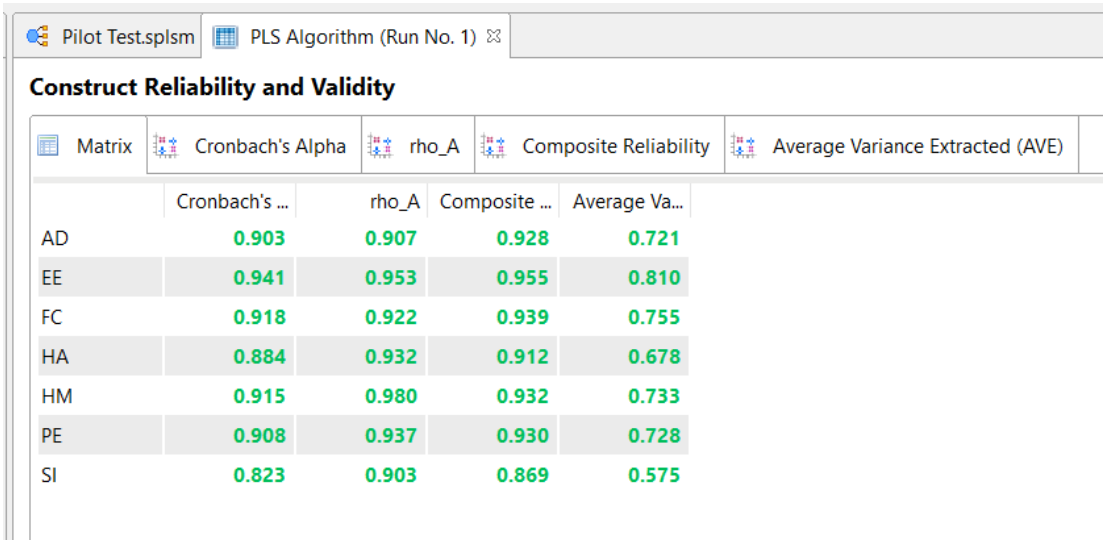
Outer Loadings

Matrix

	AD	EE	FC	HA	HM	PE	SI
AD1	0.828						
AD2	0.841						
AD3	0.855						
AD4	0.865						
AD5	0.856						
EE1		0.939					
EE2		0.956					
EE3		0.823					
EE4		0.864					
EE5		0.910					
FC1			0.906				
FC2			0.806				
FC3			0.894				
FC4			0.895				
FC5			0.841				
HA1				0.892			
HA2				0.833			
HA3				0.635			
HA4				0.823			
HA5				0.907			
HM1					0.904		
HM2					0.867		
HM3					0.845		
HM4					0.932		
HM5					0.717		
PE2						0.785	
PE3						0.804	
PE4						0.854	
PE5						0.890	
SI1							0.654
SI2							0.730
SI3							0.868
SI4							0.887
SI5							0.610
PE1						0.924	

Source: Prepared by authors

Appendix 3.5: Reliability Test Results for Pilot Test



Pilot Test.splsm | PLS Algorithm (Run No. 1)

Construct Reliability and Validity

Matrix | Cronbach's Alpha | rho_A | Composite Reliability | Average Variance Extracted (AVE)

	Cronbach's ...	rho_A	Composite ...	Average Va...
AD	0.903	0.907	0.928	0.721
EE	0.941	0.953	0.955	0.810
FC	0.918	0.922	0.939	0.755
HA	0.884	0.932	0.912	0.678
HM	0.915	0.980	0.932	0.733
PE	0.908	0.937	0.930	0.728
SI	0.823	0.903	0.869	0.575

Source: Prepared by authors

Appendix 4.1: Outer Loadings Results

*DATA.splsm | Bootstrapping (Run No. 2) | PLS Algorithm (Run No. 2)

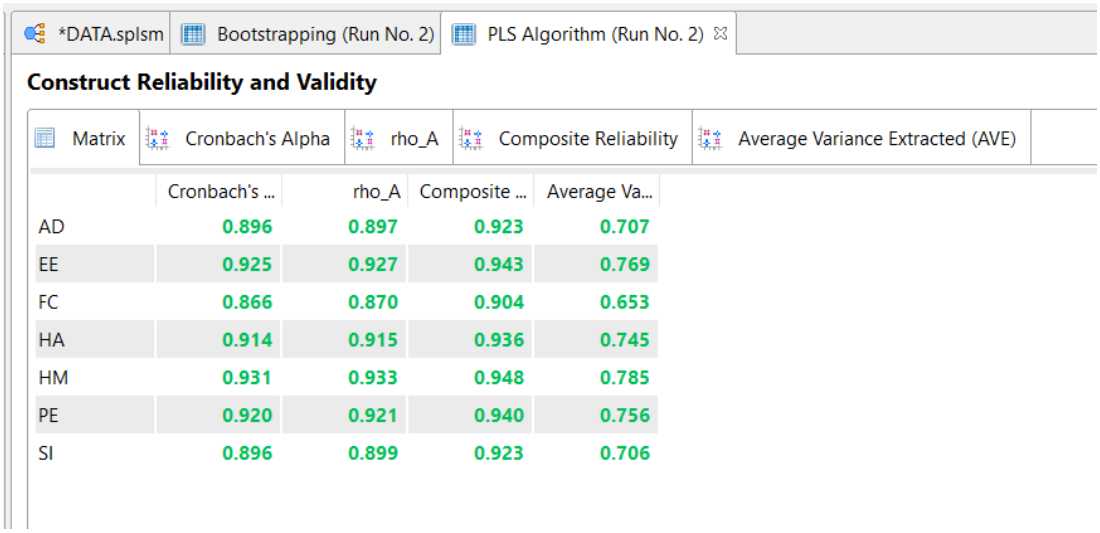
Outer Loadings

Matrix

	AD	EE	FC	HA	HM	PE	SI
AD1	0.838						
AD2	0.859						
AD3	0.844						
AD4	0.827						
AD5	0.835						
EE1		0.877					
EE2		0.874					
EE3		0.879					
EE4		0.864					
EE5		0.890					
FC1			0.767				
FC2			0.831				
FC3			0.867				
FC4			0.733				
FC5			0.836				
HA1				0.860			
HA2				0.882			
HA3				0.864			
HA4				0.841			
HA5				0.870			
HM1					0.915		
HM2					0.904		
HM3					0.887		
HM4					0.887		
HM5					0.833		
PE1						0.866	
PE2						0.885	
PE3						0.862	
PE4						0.881	
PE5						0.854	
SI1							0.841
SI2							0.845
SI3							0.825
SI4							0.879
SI5							0.809

Source: Prepared by authors

Appendix 4.2: Reliability Test Results



*DATA.splsm | Bootstrapping (Run No. 2) | PLS Algorithm (Run No. 2)

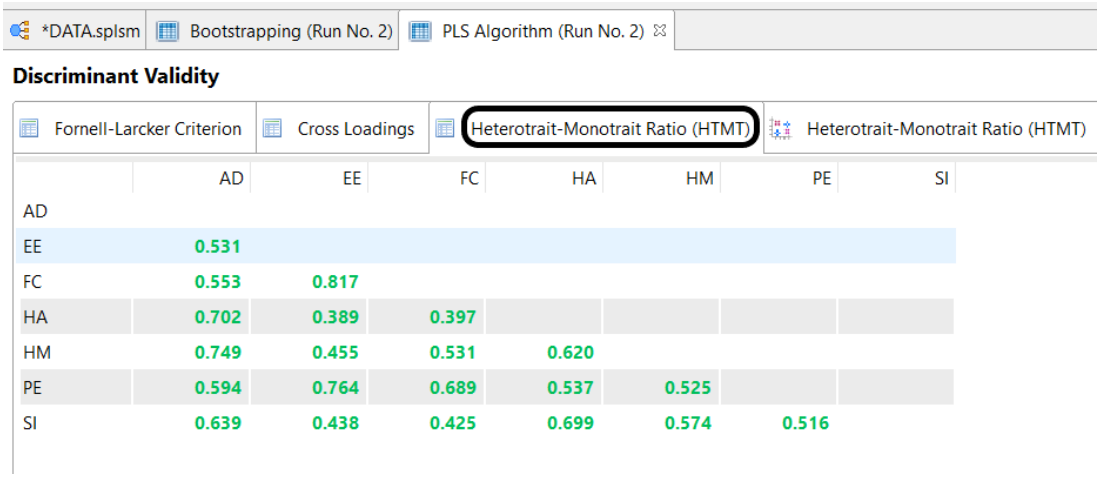
Construct Reliability and Validity

Matrix | Cronbach's Alpha | rho_A | Composite Reliability | Average Variance Extracted (AVE)

	Cronbach's ...	rho_A	Composite ...	Average Va...
AD	0.896	0.897	0.923	0.707
EE	0.925	0.927	0.943	0.769
FC	0.866	0.870	0.904	0.653
HA	0.914	0.915	0.936	0.745
HM	0.931	0.933	0.948	0.785
PE	0.920	0.921	0.940	0.756
SI	0.896	0.899	0.923	0.706

Source: Prepared by authors

Appendix 4.3: HTMT Results



*DATA.splsm | Bootstrapping (Run No. 2) | PLS Algorithm (Run No. 2)

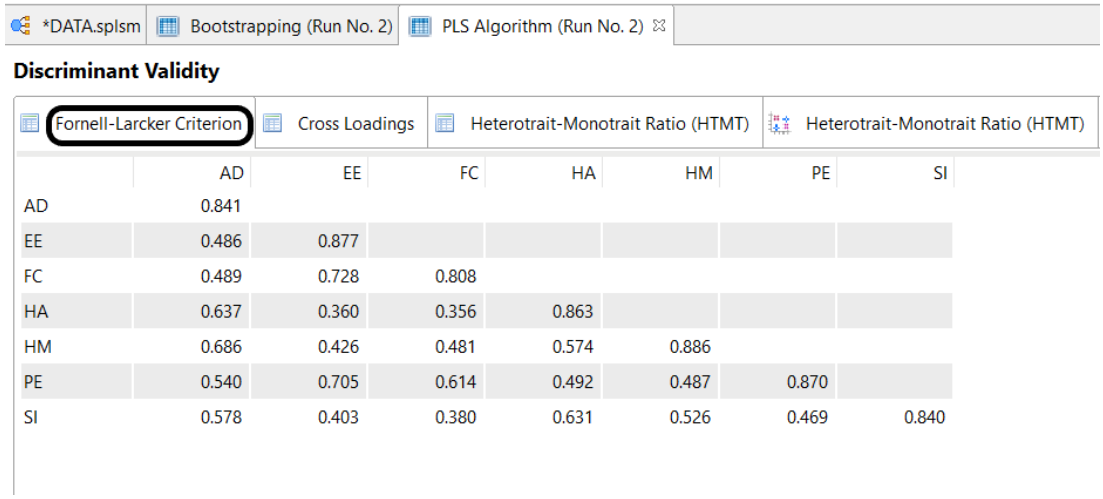
Discriminant Validity

Fornell-Larcker Criterion | Cross Loadings | Heterotrait-Monotrait Ratio (HTMT) | Heterotrait-Monotrait Ratio (HTMT)

	AD	EE	FC	HA	HM	PE	SI
AD							
EE	0.531						
FC	0.553	0.817					
HA	0.702	0.389	0.397				
HM	0.749	0.455	0.531	0.620			
PE	0.594	0.764	0.689	0.537	0.525		
SI	0.639	0.438	0.425	0.699	0.574	0.516	

Source: Prepared by authors

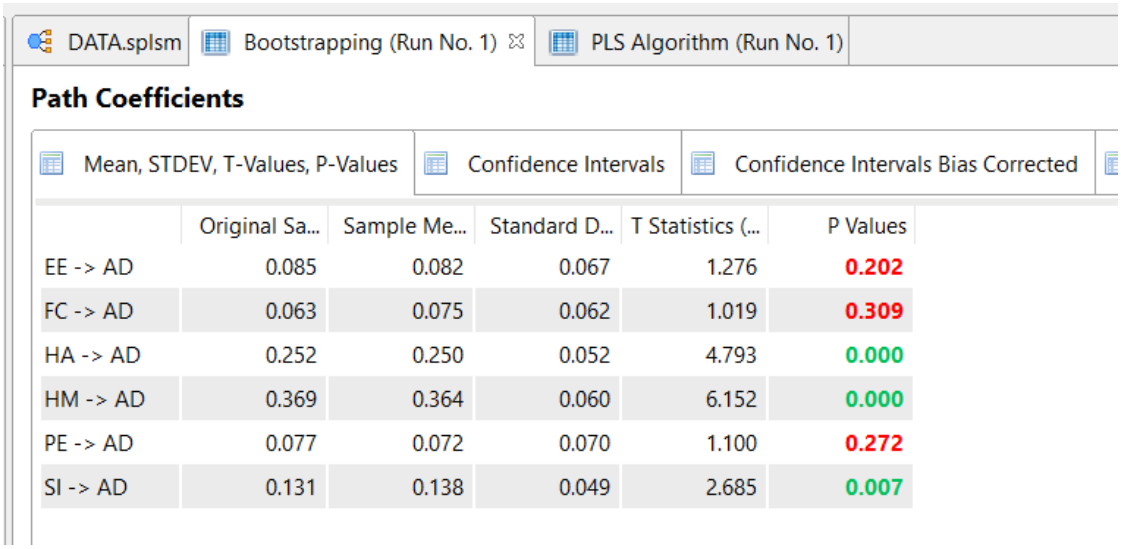
Appendix 4.4: Fornell-Larcker Criterion Results



	AD	EE	FC	HA	HM	PE	SI
AD	0.841						
EE	0.486	0.877					
FC	0.489	0.728	0.808				
HA	0.637	0.360	0.356	0.863			
HM	0.686	0.426	0.481	0.574	0.886		
PE	0.540	0.705	0.614	0.492	0.487	0.870	
SI	0.578	0.403	0.380	0.631	0.526	0.469	0.840

Source: Prepared by authors

Appendix 4.5: Bootstrapping Results



	Original Sa...	Sample Me...	Standard D...	T Statistics (...	P Values
EE -> AD	0.085	0.082	0.067	1.276	0.202
FC -> AD	0.063	0.075	0.062	1.019	0.309
HA -> AD	0.252	0.250	0.052	4.793	0.000
HM -> AD	0.369	0.364	0.060	6.152	0.000
PE -> AD	0.077	0.072	0.070	1.100	0.272
SI -> AD	0.131	0.138	0.049	2.685	0.007

Source: Prepared by authors

GROUP NO: 21FN04M

FN

(APPENDIX F)

Universiti Tunku Abdul Rahman			
Form Title : Supervisor's Comments on Originality Report Generated by Turnitin for Submission of Final Year Project Report (for Undergraduate Programmes)			
Form Number: FM-IAD-005	Rev No.: 0	Effective Date: 01/10/2013	Page No.: 1of 1

FACULTY OF BUSINESS AND FINANCE

Full Name(s) of Candidate(s)	Chai Lee Wen; Jamie Wong Hui Kun; Low Xiao Pei; Tan Ying Xin
ID Number(s)	18ABB04240; 18ABB04014; 18ABB04370; 18ABB02543
Programme / Course	Bachelor of Finance (Hons)
Title of Final Year Project	E-wallet: Dominating Future Transaction Method for Generation Z in Malaysia

Similarity	**Supervisor's Comments (Compulsory if parameters of originality exceeds the limits approved by UTAR)**
Overall similarity index: 12 % **Similarity by source** Internet Sources: 10 % Publications: 6 % Student Papers: 7 %	Nil
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Name : Lee Chee Loong

Date : 12/04/2022

E-wallet: Dominating Future Transaction Method for Generation Z in Malaysia

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It is hereby certified that Chai Lee Wen (ID No: 18ABB04240) has completed this final year project entitled "E-wallet: Dominating Future Transaction Method for Generation Z in Malaysia" under the supervision of Mr. Lee Chee Loong from the Department of Finance, Faculty of Business and Finance.

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E-wallet: Dominating Future Transaction Method for Generation Z in Malaysia

by 21FN04M JAMIE WONG HUI KUN

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CHAPTER 1: RESEARCH OVERVIEW

1.0 Introduction

Nowadays, smartphones have become one of the daily life necessities for most of the people throughout the world. With the advancement of technology, many things have been digitalized, more features and functions are available in today's smartphone as compared to the past handsets. Therefore, using smartphones to perform and complete tasks has brought convenience and benefits to the users, such as time and cost saving. It also provides a secure environment for people to perform transactions regardless with the personal information security or the new norms that have been developed in recent years (Teng & Khong, 2021). As a result, due to the evolution of wireless connection and internet technologies, smartphones have become a common electronic device that brings the owners to a new digital era. With the increasing number of smartphone users, the demand for digital and cashless transactions in the society today increases positively also. It is forecasted that at the end of year 2025, the number of mobile wallet users worldwide will reach 4.8 billion (Rolfe, 2022). The users' attitude on digital payment methods and adoption of digital transaction applications has undergone a drastic change.

Among various types of digital payment method such as debit and credit cards, e-banking, and bank applications, mobile wallets, which is also known as electronic wallets (E-wallets) would be one of the best creations in this century, and this creation is also an indispensable part for the development of digital payment system (Karim et al., 2020). E-wallet is a form of digital payment allowing users to link their bank cards or online bank accounts to their E-wallet account in mobile applications. By topping-up and reloading money into the E-wallet accounts, it enables users to complete money transfers digitally with just few finger taps. For example, in-store and online shopping

payment, individual money transfer, bills and parking fee payment, and even small amount investment.

According to Karim et al. (2020), E-wallet payment provides a faster, more convenient, and more useful experience to the users than other banking systems. Under this premise, the E-wallet payment brings forward multipurpose techniques for users in Malaysia. E-wallets have become the latest payment trend for users due to the benefits it brings, and the new culture built among worldwide people in recent years. The main reason that E-wallets experience popularity worldwide is its easiness for users to reload money and use it repeatedly. Next, it provides users a sense of comfort and security to complete transactions (Singh, et al., 2020). Besides, E-wallet requires lower cost of financial transactions as no additional or processing fees will be charged and it also helps the users to save more time and reduce the paperwork (Yakean, 2020).

The usage of E-wallet still small or under expectation. Therefore, this research intended to examine the relationship between determinants and the intention of adopting E-wallet as the primary transaction method among Generation Z in Malaysia. The survey is carried out with the purpose to analyze the linkage between Generation Z involvement and their intention to continue using E-wallets as the main payment method in the future.

1.1 Research Background

In the era of rapid technology development where online shopping, Fintech, and digital payment transactions are highly used, it is expected that E-wallet will become more and more popular in the market (Bezovski, 2016). This phenomenon is expected to happen because today is not like the past, when digital system was not being promoted widely and still under development process, while smartphone also being considered as high technology with low frequency of daily usage product due to low number of users, and it might not be affordable by people in each class of population. According

to Muller (2021), the number of smartphone users in Malaysia was only 6.15 million in the past decade, but it was forecasted to reach 29.46 million at the end of year 2022. Therefore, the substantial growth of smartphone users shows that since digital payment system was not widely used as compared to now, cash payment would probably be the most commonly used method to complete a transaction while online transfer or baking system are more applicable to certain groups of people that possess knowledge on the operation of those systems and websites in the past.

However, after digital payment method has been widely promoted to public and the usage is starting to become higher due to various reasons (Teng & Khong, 2021), such as rise in popularity of e-commerce, changes in normal lifestyles, new culture built by younger generation, and the rapid development in network and digital payment system due to increase the demand of using it. Cash transactions are no longer the most convenient and efficient transaction method for some individuals and businesses. There are few shortcomings related to cash payment. Firstly, cash payment requires face-to-face physical payment. Secondly, cash payment is not as efficient as mobile wallet payment or any other digital payment method as it is time consuming and error-prone (Hsieh, 2021). As a result, the advantages that mobile wallets bring to users has also driven itself towards the possibilities to a more advanced and promising future (Bezovski, 2016).

According to Leon (2021), mobile wallets not only encourage interpersonal money transfer and purchase payment, but it also supports government-to-person transfer. Indeed, Malaysia government has also encouraged Malaysians to adopt mobile wallets especially during recent years. The government has taken actions to encourage Malaysians to shift from a cash-based society to a cashless society through some policies earlier. For further illustration, Financial Sector Blueprint (2011-2020) promoted by Bank Negara Malaysia (BNM), the objective would be to eliminate the cheques transactions and to speed up transactions by using e-payment. Besides, part of the Malaysia Budget 2020 stated that the government assigned RM750 million to enhance the adoption of E-wallets in Malaysia (Fong, 2020). For example, a one-off

RM30 incentive was given to eligible E-wallet users in order to stimulate and encourage E-wallet usage among Malaysian (Tenk et al., 2021). Currently, there are few popular digital wallets in Malaysia and play a dominant role in Malaysia, such as Boost, GrabPay, WeChat pay and Touch'n Go E-wallet (TNG).

According to Karim et al. (2020), age would be a crucial factor to influence the intention for a person to adopt digital payment application, this would be the reason that causes differences in payment methods used among different age groups of consumers, (i.e., Generation X, Generation Y, and Generation Z). Generation Z would be the main group of population that being focused in this research. In general, generation Z refers to the newest generation that was born between 1997 and 2012 (Dimock, 2019). Generation Z is known as a unique group as they are the first generation of digital natives as they are born with digital chromosomes in their DNA. These target group of people have been exposed to a tremendous amount of technology during their childhood and adolescence, they are more comfortable with digital environments and engaging with new e-payment systems (Kahawandal & Peter, 2020).

Thus, the survey questionnaire for this research was distributed for the population that was born between 1997 and 2005 in Malaysia, which are Malaysians that are aged between 16 years old and 25 years old. The next requirement for the questionnaire would be the respondents must have experience using E-wallets and successfully used E-wallets to complete any transactions before. The reason behind these target groups is because these characteristics can help this research to be more accountable. These backgrounds of Generation Z motivated the members to conduct research on whether E-wallets payment will dominate future transaction method in Malaysia. In short, this research intended to investigate whether Generation Z will keep using E-wallet as their primary transaction method in the future.

1.2 Problem Statement

Due to the evolution of digital payment systems, smartphones and network, people tend to switch their money transfer method to mobile wallets to reach the effectiveness of using it, and at the same time to minimize the risks that might be faced when carry a lot of cash every day. Malaysia is also a country that actively moving towards the goal of cashless society. According to Balakrishnan and Shuib (2021), cashless society refers to society that completes transactions process using digital payment system and electronic devices. Under this premise, mobile wallets would be one of the crucial elements that lead the country more towards its goals. If mobile wallets could become the prior and main choice for Generation Z to make any money transfer or completing any transaction in the future, then Malaysia have a higher potential to become cashless society in the near future. However, there are two potential problems found out to be faced by Generation Z in Malaysia that become barriers for them to adopt E-wallets and this problem would be the problem statements addressed in this research.

Figure 1.1: E-wallets Usage Categories by Malaysians in 2020

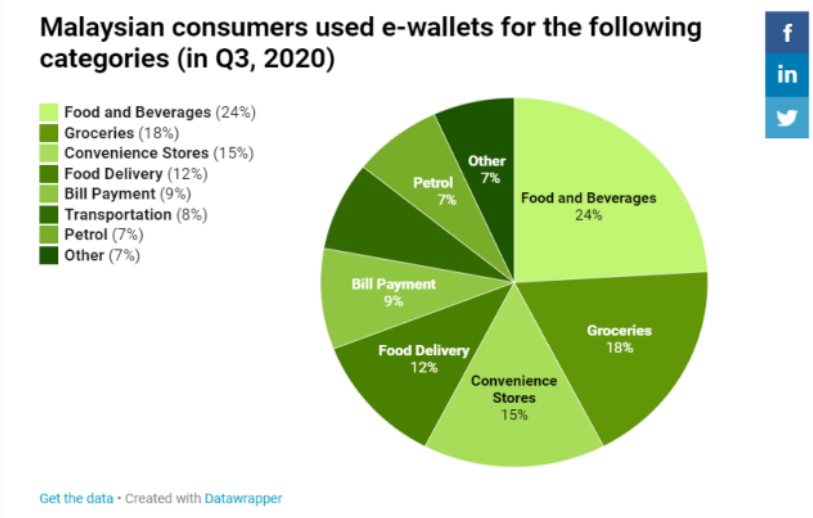
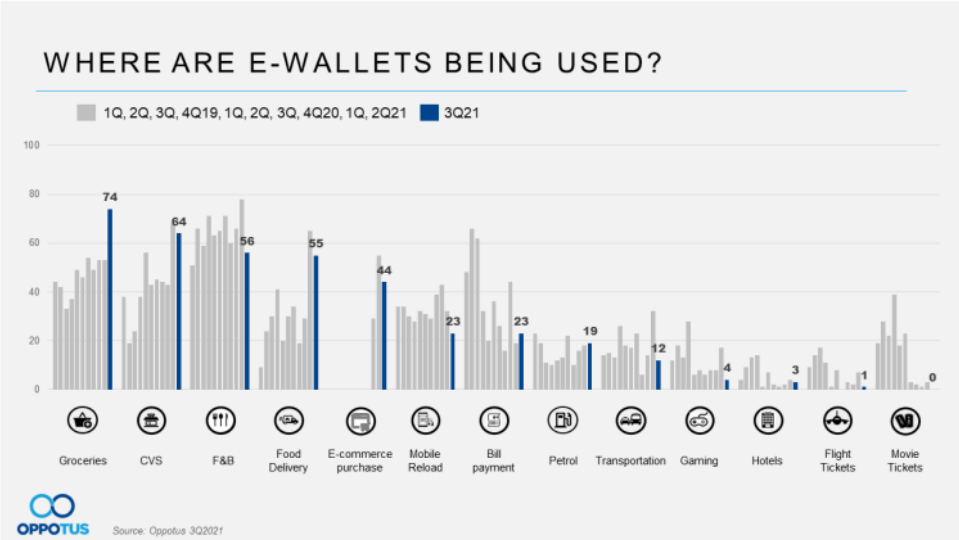


Figure 1.2: E-wallets Usage Categories by Malaysians in 2020 and 2021



Firstly, the inconvenience of E-wallet has made E-wallet hard to become the primary transaction method for the Generation Z in Malaysia. In the opinions of many people, E-wallet payment is more convenience than cash payment. This has been proven by Birruntha (2021), who stated that in 2021, the Malaysian E-wallets users number had showed a rise of 80% as compared to 2020. The reason behind is the outbreak of Covid-19 that pushed consumers to a cashless payment method to avoid physical contact and spread of virus. However, there are also statements argue that E-wallets payment is inconvenience. E-wallet payment is only suitable for small payment amount which is usually below RM100. According to Trotman (2021), consumers used E-wallets the most for food and beverages, groceries, convenience stores purchase and food beverages which the paid amount is small (refer to Figure 1.1). Also, the study by Oppotus (2021) showed that the usage of E-wallet in hotels and flight tickets purchase is very low, which are 3% and 1% respectively (refer to Figure 1.2). Other than that, Moroson and DeFranco (2016) claimed that using mobile payment for hotels expenses is inconvenience due to the high amount of money. All of these situations of low usage rate of E-wallet in large amount purchase are because that using E-wallet in big purchase will cause their E-wallet balance to be low and they have to top up the money again. Thus, it is argued that E-wallet is inconvenience as people can straight away use

debit and credit card for payments as pay wave is now available in the market and people can just wave and go, and they need not to keep reloading money, only then they can pay for their purchases.

Besides inconvenience in making big amount purchase, E-wallet is also inconvenience due to its security concerns of users. Security concern is always the major concern when people desire to try out a new technology or system, and this will cause Generation Z in Malaysia to refuse using E-wallets for payments (Nizam et al., 2019). According to Tan (2019), non-users of E-wallets avoid to have a try on E-wallet, the dominating reason is security concerns, which contributed to 46% of the whole study. The non-users are concerning about the credit and debit fraud and missing transactions. Some of the common digital wallet frauds nowadays are social contest scams, fraudulent payment scams, and fraudulent customer service scams (Germania Insurance, 2020). According to Bernama (2020), there was RM600,000 lost to E-wallet scam in Kedah, Malaysia, the scammers offered a fake cash redemption between RM100 to RM300 for new E-wallet users. This is because Generation Z scared that they will lose their money while using E-wallets applications, especially most of them still have limited income sources, and some of them are getting their living expenses from their parents, student loan, or salary.

Secondly, lack of skill and knowledge among certain age group of Generation Z in Malaysia has discouraged them from using E-wallet as their primary transaction method as well. For Generation Z, some of them are still minor, which their age is below 18 years old. For minors, they can still own a joint bank savings account, which will be operated jointly under their parents or guardians' name. As said by Mohamed Rahdi (2021), there are still room for improvement about financial knowledge for minors in Malaysia, while this has caused most of the minors to not having strong decision-making power, especially in terms of financial decision. In line with this, most of the parents of the minors will make financial decisions on their behalf, causing them to be more likely follow what their parents have decided for them. Since most of the minors' practices will be influenced by their parents' practices, if their parents or

guardians do not have the habit in using E-wallet as their prior payment method, the minors will likely to not adopting E-wallet as well. Other than that, when minors are skeptical about an innovation, peer pressure may lead them to the adoption of the innovation. People will feel that it is safe to adopt an innovation when close peers persuaded them to do so (Rogers, 2003). Therefore, the adoption of E-wallet by the minors may encourage their close peers to adopt it as well. However, if people with similar age among the minors of Generation Z do not have the trend in using E-wallets, they may not influence each other in the adoption of E-wallet. In long term, the minors will have the habit to use cash payment only instead of E-wallet. Thus, the motivation to adopt E-wallet for the minors of Generation Z in Malaysia will be reduced if there are lack of skill and knowledge among the minors of Generation Z in Malaysia.

Moreover, for those Generation Z who are still below 18 years old, even they have the concept about cashless payment system, they are not eligible to access some of the internet banking facilities or payment services as the payment services are mainly developed for personal use but not child friendly (Jacobs, 2020). For example, Financial Process Exchange (FPX) Online Banking, one of the main channels to reload E-wallets' balance which allows real-time payments by direct debiting from the users' bank savings account, is only eligible for personal savings account, where the account's owner is aged 18-year-old and above (as shown in Appendix 1.1 to 1.4). Therefore, for the minors, they must need their parents or guardians' help and approval in the reloading of balance into their E-wallet account through the internet banking and this will reduce the frequency of the minors to explore E-wallet by their own. As results, Generation Z may have a habit to use cash payments as they found that it is quite troublesome to request their parents to reload E-wallet balance for them. When minors of Generation Z in Malaysia are lacking of skill and knowledge regarding the E-wallet and refuse to use E-wallet, eventually, children will end up with cash payments and the adopt intention of E-wallet for the minors of Generation Z in Malaysia might be reduced. These issues of lack of skill and knowledge will be further discussed in this research using social influence, facilitating conditions and habit.

1.3 Research Questions

(i) Is there any significant correlation between convenience of E-wallet (i.e., performance expectancy, effort expectancy, and hedonic motivation) and adopt intention of E-wallet for Generation Z in Malaysia?

(ii) Is there any significant correlation between lack of skill and knowledge of E-wallet (i.e., social influence, facilitating conditions, and habit) and adopt intention of E-wallet for Generation Z in Malaysia?

1.4 Research Objectives

1.4.1 General Objective I

To analyze the correlation between convenience and adopt intention of E-wallet for Generation Z in Malaysia.

1.4.1.1 Specific Objectives

(i) To investigate the correlation between performance expectancy and adopt intention of E-wallet for Generation Z in Malaysia.

(ii) To discover the correlation between effort expectancy and adopt intention of E-wallet for Generation Z in Malaysia.

(iii) To determine the correlation between hedonic motivation and adopt intention of E-wallet for Generation Z in Malaysia.

1.4.2 General Objective II

To analyze the correlation between lack of skill and knowledge and adopt intention of E-wallet for Generation Z in Malaysia.

1.4.2.1 Specific Objectives

(i) To analyze the correlation between facilitating conditions and adopt intention of E-wallet for Generation Z in Malaysia.

(ii) To investigate the correlation between habit and adopt intention of E-wallet for Generation Z in Malaysia.

(iii) To determine the correlation between social influence and adopt intention of E-wallet for Generation Z in Malaysia.

1.5 Significance of Study

Cashless payment is the global payment trend in today's society, and E-wallet applications play a dominant role in achieving this trend. The benefits and advantages of E-wallet enable it to have a higher potential to accelerate the trend of cashless payment methods in future by the leadership of Generation Z. Malaysia government also aims to shift the country from a cash-based society to a cashless society in the near future. Therefore, this research is meaningful for different parties to have a deeper understanding about E-wallets adopt intention of Generation Z in order to promote and achieve a cashless society in Malaysia.

This research may assist the policy maker in Malaysia by providing information that enables the policy maker to recognize the current situation in the society and the current problems faced by Generation Z when they try to adopt E-wallet applications. Thus, the policy maker could take these problems and concerns from Generation Z into

consideration by using this research as a reference, so they could address solutions for those concerns at the same time to develop better policies in the country. This action could encourage Malaysia to build a better environment and make E-wallet become more accessible within the country in order to encourage Generation Z to adopt E-wallet application as they are the major users the future, which is also the group of people that could lead the country to achieve the goal of shifting to a cashless society.

Furthermore, this research could benefit the researchers who are intended to investigate topics related to E-wallets, Generation Z, and cashless payment. This research could provide fundamental information about those related topics for the researchers, so they could acknowledge the issues that exist among Generation Z that would affect their motive to embrace E-wallet under the current situation in Malaysia. Besides, this research also provides the researchers with more knowledge on the concepts of operation and development trends for E-wallets in Malaysia. As a result, the readers would understand better regarding the Malaysia's E-wallets market, so they may use this research as a reference and apply those concepts as a base of their related research topics in order to come out with more solutions and related research papers that could promote cashless society in Malaysia.

1.6 Conclusion

The research background, problem statement, research objectives and questions as well as significance of study had been discussed in this chapter that allows the readers to obtain an overview of this research. More detailed information and review of dependent and independent variables will be discussed in the following chapter.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

This chapter will discuss in detailed the reviews done on various relevant theories related to this research. Also, details of explanatory and explained variables and hypothesis used in this research will be stated here.

2.1 Review of Relevant Theory

2.1.1 Unified Theory of Acceptance Use of Technology (UTAUT)

Being proposed by Venkatesh et al. (2003), UTAUT model is part of the Technology Acceptance Model (TAM), which aims to define the user's intention to use and adapt a new technology. According to Chao (2019), to propose this UTAUT model, Venkatesh et al. (2003) had took eight most frequently practiced behavioral intention models as their basis, which are Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB), combined TAM-TPB, Model of PC Utilization (MPCU), Motivational Model (MM), Social Cognitive Theory (SCT) and Innovation Diffusion Theory (IDT).

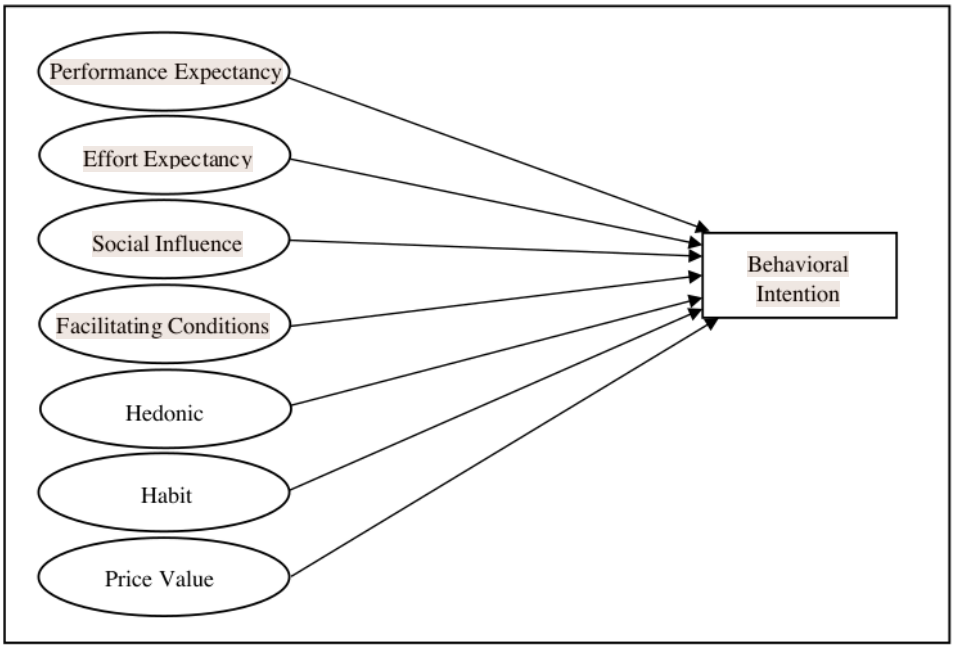
There are four constructs held under this UTAUT model, which are effort expectancy, facilitating conditions, performance expectancy and social influence. These four factors are directly affecting the behavioral use intention of a new technology (Ayaz et al., 2020). Other than that, factors like gender, age, experience and voluntariness of use act as the intermediate individual predicting the relationship between the four main elements and the behavioral intention (Venkatesh et al., 2003).

2.1.2 Unified Theory of Acceptance Use of Technology 2 (UTAUT2)

UTAUT2 is an extended version of UTAUT theory, which three more aspects had been added. These factors are habit, price value and hedonic motivation. Similar to the four main constructs in UTAUT, the relationship between these three added constructs is affected by the individual factors stated above (Chang, 2012). In brief, UTAUT2 are having seven constructs in total, and the previous research showed that the variance explained in the behavioral intention had improved after adding in the three new factors.

2.1.3 Theoretical Framework

Figure 2.1: Theoretical Framework of UTAUT2



Lian and Li (2021) conducted research to investigate the determinants impacting the users' usage intention of m-payment in Taiwan. The determinants being examined are performance expectancy, effort expectancy, social influence, facilitating conditions,

hedonic motivation, habit and price value. The researchers proposed a positive correlation between all the seven factors and the usage intention of mobile payment by Taiwanese.

Among all the seven determinants, all the hypotheses designed are significant, except social influence. The low impact of social influence towards usage intention of m-payment is because of the low number of mobile payment users and the reason of them adopting mobile payment are not due to encouragement by people around them.

2.2 Review of Literature

2.2.1 Performance Expectancy (PE)

Performance expectancy refers to how using online payment system gives advantages to the users to conduct the online transactions in term of speed, security and convenience (Junadi & Sfenrianto, 2015). Besides, the study by Abrahão et al. (2016) claimed that performance expectancy has a positive impact on the intention to use e-payment. Other than that, according to Rahman et al. (2020), most of the Malaysian increase their usage of internet payment year by year. This is because Malaysian respondents believe that using technology system will boost their job performance. Moreover, the study of Abdullah et al. (2020) that investigates determinants affecting user acceptance towards cashless society in Malaysia, it showed that performance expectancy is the most influential determinant to the E-wallet acceptance. In conclusion, there are studies showed that the performance expectancy has positively affected the consumers adopt intention of E-wallets.

The positive impact of performance expectancy on the consumers adopt intention of e-wallets had also confirmed in Indonesia. Alalwan et al. (2017) studied the factors influencing adoption of mobile banking by Jordanian bank customers using UTAUT2

theory. The result for the study in Jordanian bank showed that performance expectancy positively affects the consumers adopt motive of E-wallets because mobile payment contributes more convenience for the user to access at anytime and anywhere. Furthermore, the research by Junadi and Sfrenrianto (2015) that investigated the factors affecting Indonesians' willingness to use e-payment. They found out that performance expectancy is positively related to the Indonesians' willingness to use e-payment.

2.2.2 Effort Expectancy (EE)

Junadi and Sfenrianto (2015) define effort expectancy as the easiness of using a system. From the research, the effort expectancy (EE) is positively influencing the acceptance of the electronic payment system in Indonesia. It means higher effort expectancy leads to higher adoption of the electronic payment system. Moreover, Angelina and Rahadi (2020) had applied the UTAUT theory to study the determinants that have impact on usage intention of E-wallet in Java, Indonesia. One of the factors in this research is effort expectancy (EE), and the results showed that it is effectively influencing consumer willingness to use mobile payment. Additionally, based on the research of Intarot and Beokhaimook (2018) that investigated the determinants that impact the E-wallet acceptance in Thailand, it showed that e-payment system is simple for them to use and conduct task without any practical skills. The result for this research showed that the effort expectancy is significant to the E-wallet acceptance in Thailand.

However, the research carried out by Abdullah et al. (2020) to study the determinants of user acceptance towards cashless society in Malaysia showed that effort expectancy is not powerful to impact the acceptance of E-wallet among Malaysian. Besides that, Ramírez-Correa et al. (2019) had also carried out research to investigate how the factors of UTAUT2 theory influence the acceptance of online games in Spain. From the results generated, the effort expectancy is not significant to acceptance of mobile devices in Spain. The studies founded that the effort expectancy have no relationship to the

consumers adopt intention e-payment. In summary, there were inconsistent findings on the effect of effort expectancy towards e-wallet adoption.

2.2.3 Social Influence (SI)

Venkatesh et al. (2003) defined social influence as the extent to which people important to a person believes that he or she should use a new technology or system. There are some researches show that social influence has a positive relationship with the intention to adopt of the usage of e-payment, but there are also studies claimed an indirect relationship between these two variables. From the research by Yang et al. (2012), it is stated that social influence brings some impact for the user to use e-payment applications before and after the adoption. After the adoption, social influence gives a negative influence to perceived risk in the mobile services in China. Therefore, the social influence in some aspects is indirectly affecting the usage intention of e-payment applications. Additionally, a study to investigate the factors that influence the use and acceptance of E-wallet based on UTAUT theory in Thailand had been conducted by Intarot and Beokhaimook (2018). The study found that social influence ends up having no effect on the acceptance and use of E-wallet in Thailand. These studies claimed a negative and insignificant correlation between social influence factor and consumers adopt intention of E-wallet.

In contrast, there are still many researches stating that social influence does directly influencing the adoption of new technology or new information system (Lee et al., 2009). In the research done by Teoh et al. (2020), aiming to investigate the determinants that influence the adoption of m-payment service in Malaysia, the results show that social influence positively influences the use of E-wallet. The researchers suggested the retailer to consider offering incentives to promote social influence in order to facilitate E-wallet adoption as people is very likely to share good news to their important ones. For instance, points-based or dollar value reward plans could be used to encourage friend-to-friend references. Moreover, Slade et al. (2015) stated that

through the studies on United Kingdom using UTAUT2 theory, social influence showed significant impacts to the adoption of mobile payment in Near Field Communication (NFC) technology. In a nutshell, there is no consensus from previous studies on the effect of social influence on e-payment adoption.

2.2.4 Facilitating Conditions (FC)

Facilitating conditions is the degree to which an individual believes that he or she has organizational and technical infrastructure to support the use of a system (Venkatesh et al., 2003). From the study of Widodo et al. (2019) which desired to identify the determinants that impact the digital wallet adoption in Indonesia, the result for this research stated that facilitating conditions significantly influence the digital wallet use intention. The reason explained for this significant relationship is that the provider of the application provides the users online helpdesk via online chat, email or phone to solve their difficulty when using the app. According the study of Tan et al. (2020) which purpose was to investigate the important determinants that influence of the adoption E-wallet among Malaysian undergraduates, the literature review of this research stated that the undergraduates or youngsters have highly acceptance to new technology system or services. An example given is that Malaysian government has provided more infrastructure to encourage Malaysian to use digital payment via the launch of E-Tunai Project. The result showed that the facilitating conditions impact significantly the willingness to use the digital wallet among undergraduates in Malaysia.

Other than that, research focusing on the determinants that influence the adoption of E-wallet in India had been carried out by Soodan and Rana (2020). In the early stage of UTAUT, the facilitating conditions means the more the knowledge and supports gained by users, the greater the chance that users will use and accept the new technology. Facilitating conditions is also a significant influencer to affect the adoption to information system in previous system (Dwivedi et al., 2006). From the study by Yang et al. (2021), facilitating conditions share a significant relationship to the use of new

technology in the digital era. This is because the infrastructure associated with E-wallets enables users to become more creative by using the e-learning system to make them easier, convenience and smart to upgrade new menus in app.

2.2.5 Habit (HA)

Habit refers to the extent to which a person believes the behavior to be automatic or the prior behavior to continuously impact their future behavior (Venkatesh et al., 2003). Based on the study of Sivathanu (2018), the researcher claimed that previous habit may significantly influence beliefs and future behavioral motive of an individual. The study result showed that habit is a significant determinant to influence behavioral intention of using digital payment. Furthermore, the study which aim to identify the determinants that influence the intention of using the E-wallet in Indonesia showed that habit is the most significant factor (Widodo et al., 2019). In addition, the study of Panwar and Tak (2017) that aimed to investigate the factors that influence the use of mobile app-based shopping in India, the results showed that the habit is an importance factor to influence the use of mobile app on shopping in India. Previous researches above claimed a significant and positive relationship between habit and consumers' intention to adopt E-wallet.

However, there are also researchers claimed that the habit is insignificant to the intention to use E-wallet (Laukkanen et.al., 2008). Reason for this is because the users do not have a basic learning on using the E-wallet. In short, they are not used to those advanced technology, so there is no habit built among them. Furthermore, the result of study by Soodan and Rana (2020) stated that habit shares a negative relationship with intention to use the E-wallet. This is because of the steps to use online payments gateway is large, causing the users to be extra-alert in using E-wallet such entering OTP to every transaction. The studies indicated that habit has negative and insignificant relationship with the consumers' adopt intention of E-wallet. As a summary, there is no consistent findings on the relationship between habit and adopt intention of e-wallet.

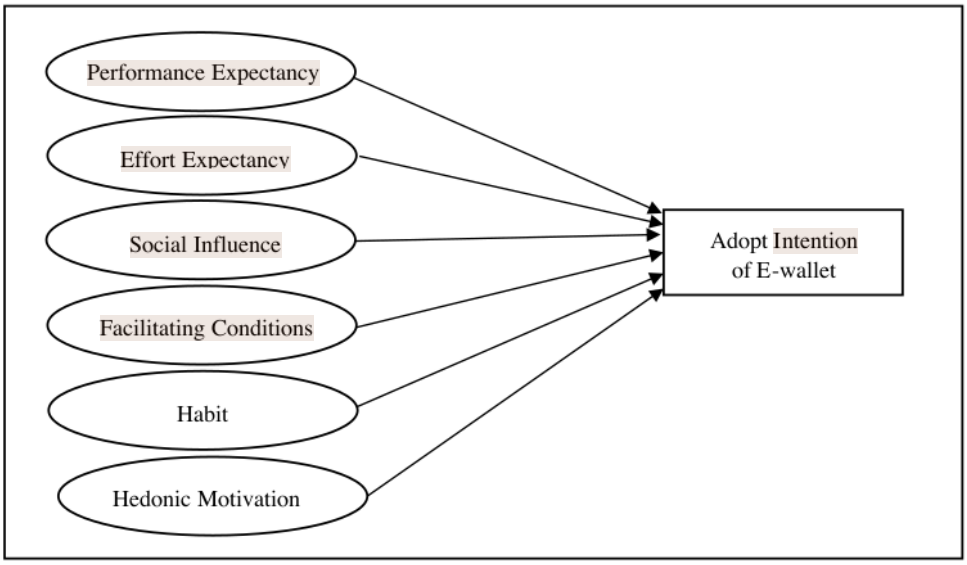
2.2.6 Hedonic Motivation (HM)

Hedonic motivation is the pleasure derived from using a technology (Venkatesh et al., 2003). Zhang et al. (2012) stated that hedonic motivation is an important factor of new technology adoption by end users. Hedonic motivation has the greatest power to encourage customers to adopt mobile banking by Generation Y (Boonsiritomachai et al., 2017). This is due to the fact that Generation Y have no problems in using mobile banking system such as practical skills and they are very enjoy using the mobile banking.

In the study of Soodan and Rana (2020) that desired to explore the determinants of adoption of E-wallet by the respondents in Punjab, India, hedonic motivation is defined as a factor focusing on the underlying utilities such as joy, happiness, and satisfaction. According to the scholars, hedonic motivations is significantly affecting the behavioral intention on the adoption of E-wallet. The same goes for the study of Panwar and Tak (2017), who concluded that hedonic motivation is valid towards the intention to adopt E-wallets due to Indonesian users' high satisfaction in engaging with the mobile shopping apps. It gives high benefits to the marketers to gain profits because the technology and infrastructure may help the consumers to create a better communication to marketer. In summary, most of the studies claimed that hedonic motivation is having a strong effect on e-wallet adoption.

2.3 Proposed Theoretical Framework

Figure 2.2: Proposed Theoretical Framework



The model by Lian and Li (2021) on UTAUT2 theory had been modified and the figure above is the proposed model for this research. Although there are total of seven determinants explained in UTAUT2 theory, however, price value factor was excluded from this research since the E-wallet is free to use. Thus, the determinants to be inspected in this research are performance expectancy, effort expectancy, social influence, facilitating conditions, habit and hedonic motivation. In short, this research investigates how these six factors proposed in UTAUT2 theory affect the adopt intention of E-wallet among Malaysian Generation Z. To be more specific, performance expectancy, effort expectancy and hedonic motivation are intended to examine if convenience of e-wallet affect the adopt intention of e-wallet for Malaysian Generation Z. Meanwhile, social influence, facilitating conditions and habit are acts as the determinants to investigate the relationship between lack of skill and knowledge and Generation Z e-wallet adopt intention.

2.4 Hypothesis Development

2.4.1 Performance Expectancy (PE)

According to Venkatesh et al. (2003), performance expectancy is how a person percepts that using certain system will help him or her to realize improvements in job performance. According to Koksal (2016), performance expectancy has a positive and strong impact on the adoption of information technology. Besides, Patil et al. (2020) found that performance expectancy relates positively to consumers' attitude. From here, PE is presumed to be impacting AD positively in this research. Therefore, the first hypothesis was created as below:

H_0: There is no significant relationship between PE and AD.
H_1: There is significant relationship between PE and AD.

2.4.2 Effort Expectancy (EE)

Effort expectancy is defined as the degree of ease in using certain system (Venkatesh et al., 2003). Several researchers have reported that effort expectancy has a positive effect on behavioural intention in different contexts (Sahu et al., 2007; Yeoh et al., 2011; Mohd-Isa et al., 2015; Panwar et al., 2017; Sivathanu, 2018). Besides, according to Alawan et al. (2017), effort expectancy positively influenced the Jordanian banking customers' intention to adopt Mobile Banking. From here, in this research, EE is presumed to be positively impacting AD. Therefore, the second hypothesis was formed as below:

H_0: There is no significant relationship between EE and AD.
H_1: There is significant relationship between EE and AD.

2.4.3 Social Influence (SI)

According to Venkatesh et al. (2003), social influence refers to the intensity to which a person's mindset will change will someone important to him or her encourage them to use certain new technology. According to Kulviwat et al. (2009), social influence is significantly influencing the adoption of high technology innovation. Besides, Savita Panwar (2017), Sivathanu (2018) and Yang (2010) stated that social influence and intention to use digital payment systems is positively correlated. From here, in this research, SI is presumed to affect AD positively. Therefore, the third hypothesis was created as below:

H_0: There is no significant relationship between SI and AD.
H_1: There is significant relationship between SI and AD.

2.4.4 Facilitating Conditions (FC)

Facilitating conditions is defined as how a person percepts that the technical and organizational infrastructure owned by them is capable to uphold the use of certain system (Venkatesh et al., 2003). According to Khechine et al. (2020), facilitating conditions vitally impacts the adoption of technology. Thus, this construct may influence the adopt intention of E-wallets as well. From here, in this research, FC is presumed to positively impacting the AD. Therefore, the forth hypothesis was made as below:

H_0: There is no significant relationship between FC and AD.
H_1: There is significant relationship between FC and AD.

2.4.5 Habit (HA)

Habit refers the extent to which a person believes certain behaviour to be automatic due to prior behaviour (Venkatesh et al., 2003). According to Ajzen et al. (2005), previous experiences may significantly impact the future behavioural intention as well as the belief of an individual. Furthermore, the researchers proved that habit will positively affects the behaviour of current use. From here, HA is presumed to affect the AD positively in this research. Therefore, the fifth hypothesis was created as below:

H_0: There is no significant relationship between HA and AD.
H_1: There is significant relationship between HA and AD.

2.4.6 Hedonic Motivation (HM)

Hedonic motivation refers to how using a technology leads to contentment (Venkatesh et al., 2003). Zhang et al. (2012) found that end users will more likely to adopt new technology if they perceive hedonic motivation. Furthermore, a study found that to boost up customers' inspiration to use mobile banking, the fun of using it is crucial (Boonsiritomachai et al., 2017). Since the UTAUT2 includes hedonic motivation as one of the important factors on the adopt intention of cashless payments, HM is presumed to affect AD positively and the sixth hypothesis is formed as below:

H_0: There is no significant relationship between HM and AD.
H_1: There is significant relationship between HM and AD.

2.5 Conclusion

Chapter 2 had discussed the review of theories and variables on past studies. Other than that, theoretical framework and hypothesis to be used in this research had been development also. In Chapter 3, the research methodology for this research will be discussed.

CHAPTER 3: METHODOLOGY

3.0 Introduction

This section will provide a glance on various methodology to be used and practiced in this research, which include design of research, method to collect data, techniques to analyze data and pilot test. All of these methodologies used are to obtain the research objective and answer the research questions designed in Chapter 1.

3.1 Research Design

In this research, quantitative data collection method was applied, where "numerical data" was collected using Likert scales, which are close-ended questions. The questionnaires were designed and shared to target respondents and used for data analysis. Questionnaires was chosen for data collection due to its usefulness, cost-effectiveness and time-effectiveness as questionnaires allow unmeasurable variables to be scaled and ease the analysis using the scaled number. For data analysis, partial least squares structural equation modeling (PLS-SEM) was applied, which is a method to compute complex relationships using path modelling and it allows latent variables to happen (Hair et al., 2019).

3.2 Data Collection Method

Primary data collection method would be used in this research for the purpose of collecting data. By collecting primary data in research, results obtained for this research would be more suitable to achieve the research objectives as compared to the secondary data which are derived from the existing sources. In this research, quantitative data

research would be used because the objectives of this research involve the study of variables, relationships among the variables, as well as hypotheses testing. Therefore, to obtain the primary quantitative data, survey was conducted by creating questionnaires.

For the process of collecting questionnaires, approval letter to conduct survey had been first obtained from the university (as shown in Appendix 3.1). After that, the members started designing the full set of questionnaires and getting check from the supervisor. Correction on any misleading words and unclear questions had been made after the discussion with the supervisor and the questionnaire was then being distributed to the target respondents. The questionnaires were designed using Google Form and were distributed by sharing the link of Google Form. One of the criteria of respondents are they must have experience in using E-wallet, the reason this research intended to emphasize this is because this can ensure that the respondents know what E-wallet is. By doing so, the respondents could understand the research well and therefore increases their interest in joining the data collection process as a respondent.

3.3 Design of Sampling

3.3.1 Target Population

This research was targeting the population of Generation Z who's aged between 16 to 25 years old. This group of people is targeted because the internet penetration among them is high at 98%, at the same time, 99% of them own a smartphone (Tjiptono et al., 2020). E-wallet can only be used when there are internet connection and smartphone. Besides, since this research studies the determinants impacting the E-wallet adoption among Generation Z in Malaysia, this research was targeting only the Malaysian who had used E-wallet for any type of transaction in the past. In short, 9,483,000 Malaysian

that aged between 16 to 25 years old that has used E-wallet are the target population in this research, according to Tjiptono et al. (2020).

3.3.2 Frame of Sampling and Location of Sampling

According to Särndal et al. (2003), frame of sampling is a list showing all the items in a population, meaning that what is age of sample, nationality of sample and familiarity of sample on E-wallet. This research was targeting Malaysian who aged between 16 to 25, which people call them Malaysian Generation Z. The targeted Malaysian includes students and working adults. Since Malaysian is the target group, the respondents may be from different states and different areas from all over Malaysia. Furthermore, sampling location is defined as the actual place where the researchers obtain the target sample (Särndal et al., 2003). For this research, the target sample would be obtained through online platform, meaning that the Google Form link of the questionnaires would be shared to the target sample.

3.3.3 Technique of Sampling

After comparing all the sampling techniques proposed by the professionals, the simple random sampling would be used for data collection. Through simple random sampling, information about a population would be collected by randomly selecting a sample from a population. This type of sampling method is suitable when the population is large and it can ensure that all individuals have the equal chance to be selected, at the same time, reduce the chance of systematic bias (i.e., certain groups are ignored and excluded).

3.3.4 Size of Sampling

Large size of sample is important because it helps the researchers to determine a more accurate mean value. In other word, large sample size would provide a better result later in running the relevant tests to get the results. According to Tjiptono et al. (2020), the population size of Generation Z in Malaysia as of year 2020 is 9,483,000. Referring to the book written by Krejcie and Morgan (1970), for size of population more than 1,000,000 with 95% confidence level and 5% margin of error, the required size of sample should be 384. Hence, the ideal size of sample is 384 for this research, and this research decided to have a sample size of 400, which is 16 more than the ideal sample size. In other word, this research aimed to collect data from 400 respondents in the survey.

3.4 Research Instrument

3.4.1 Questionnaire Design

For each set of questionnaires, there would be a total of 40 questions, including section A and section B. Section A would be mainly asking for demographic question, such as gender, age group, race, current employment status and handset. By this, descriptive analysis could be generated. For example, a mindset of which age group are more involved in E-wallet usage could be obtained based on the number of respondents among various age group. Also, collecting employment status make the researchers able to analyze that if regular income will induce the users' willingness to use E-wallet. As an example, how frequently people from different income level use E-wallet.

Section B was mainly for behavioral question with the use of 5-Point Likert Scale and the target respondents were requested to express their agreement level about various

statement. (Strongly agree=5; Agree=4; Neutral=3; Disagree=2; Strongly disagree=1). It is easy to understand and less time-consuming (Newson, 2021). Section B was separated into 7 sub-sections, which were titled as the independent variables and dependent variable, with 5 items for each construct (as shown in Appendix 3.2).

In section B, items 1 to 5 were categorized under the first sub-section, which is X_1, performance expectancy (PE). This sub-section is about the degree of agreement of respondents regarding how they perceive the use of E-wallet could help them to perform transactions better.

Item 6 to 10 were related to X_2, effort expectancy (EE). The items fall under this category are mainly correspond to the degree of agreement of respondents about how ease for them to learn, adopt and master the E-wallet for transactions. This research intended to examine if the E-wallet is ease to be used, will it increase the users' intention to adopt E-wallet, as what this research expected.

Item 11 to 15 were corresponding to social influence (SI). These items intended to measure how family, friends, colleagues and other important people will influence the respondents to use E-wallets for transactions. These items were used as most of the people have a mindset that people important to us can influence our behavior, thus this research desire to test for its validity.

Item 16 to 20 were asking about facilitating conditions (FC), examining if the facilitating conditions available in Malaysia are able to support the use of E-wallet. If most of the respondents have low agreement with the statements, it may indicate that Malaysian government is not well-prepared for the arrival of cashless society. Also, it is related to knowledge owned by respondents' in using E-wallet, if their knowledge is low, they might have low intention in using E-wallet.

Item 21 to 25 were related to X_5, habit (HA), relating to how prior behavior affects the respondents to continue using E-wallet for transactions. This is because when they are

already used to E-wallet before, they might intend to continue using it in the future as it has become their habit.

Item 26 to 30 were all about the X_6, hedonic motivation (HM), which is about the acquirement of joy and pleasure when someone use E-wallet. This research desire to measure that is that true fun and entertaining features of E-wallet will encourage the respondents to use E-wallet continuously.

Item 31 to 35 were all about the dependent variable, adopt intention of E-wallet (AD), which is the extent to which user will start using and keep using E-wallet in the future. These items are needed to link the independent variables to the possibility of respondents continue using E-wallet in the future.

3.4.2 Variable Measurements

Variables to be investigated in research were measured using various scales. The scale of the variables measured would affect the data analysis techniques and results, consequently affecting the conclusions made for the research. According to Sekaran (2020), nominal scale, ordinal scale, interval scale and ratio scale are the four main scales of measurement. Nominal scale and ordinal scale are usually suitable for running qualitative data while interval scale and ratio scale in quantitative data generation. For this questionnaire, the scale of measurements being applied are nominal, ordinal and interval.

3.4.2.1 Nominal Scale

According to Sekaran (2020), nominal scale is the scale used for variables whose difference can be qualified but not quantified. For example, name, occupation, blood type and so on. Nominal scale is not used for ranking variables, thus there is no ordering

of values implied. Nominal scale is mainly helping the researchers to group and classify the objects being measured. From the questionnaires designed for this research, demographic questions like gender, race, employment status and handset used are the nominal variables this research used. By using these questions, the respondents could be grouped easily, and used for descriptive analysis.

3.4.2.2 Ordinal Scale

Ordinal scale, very much similar to nominal scale, is applied for qualitative variables, but the variables can be ranked or ordered (Sekaran, 2020). Variables like grade, income level, education level are fall under ordinal variables. Ordinal scale allows researchers to compare items and items. In this questionnaire, the ordinal question designed was age group, which the respondents can be ordered according to their age. This question was set under the category of demographic information.

3.4.2.3 Interval Scale

Interval scale of measurement refers to a measurement for quantitative data. Interval scale measure variables along a scale, which the spacings between point and point share the same difference, and the researchers can interpret the difference (Sekaran, 2020). However, there is no true zero point would be found in interval scale, meaning that zero does not imply the mean of nothing. In this research, section B were all interval questions, where 5-Point Likert Scale was used and the respondents are requested to express their level of agreement about various statement. For instance, the 5-Likert scale was ranged as strongly agree (5), agree (4), Neutral (3), disagree (2) and strongly disagree (1).

3.4.3 Pilot Test

According to Wright (2021), it is critical to test the questionnaires first before using it for data collection, which can be done using pilot test. Pilot test is a statistical testing similar to the full data analysis, but in a small scale. It aims to identify potential problems and obstacles in the actual data analysis, i.e., to reduce the confusing questions, remove or reconstruct questions that are irrelevant or not objective, predetermine the resources needed in the actual study and so on.

There are a few steps need to be followed in running the pilot test. Firstly, create a pilot plan, i.e., we must clearly know which samples used, methodology and other related resources and goals engaged. Next, be prepared to run the pilot test. Find 30 respondents that fit the designed sample, share designed questionnaires, expect time taken for answering and install software needed and so on. Thirdly, deploy and run the pilot test, which is to distribute and collect the questionnaires and record time, key in data into designed software and run the analysis. The following step is to evaluate the pilot test. Outer loadings, Conbrach's alpha, composite reliability and average variance extracted would be run for pilot test.

Lastly, prepare for production deployment. improvements will be made on various weaknesses and strengths to make it better, more applicable, acceptable and objective. For example, correcting the grammar mistake or unethical wordings in the questionnaires when receiving unfavorable feedback from respondents. Also, through pilot test, data checking like identifying invalid or unobjective questions can be done, and we can either remove the questions or restructure the questions. Since there is no unfavorable response from respondents on existence of any unethical wordings or questions, no items or questions were removed or make correction in the questionnaire. Here came to the end of pilot test, and the research is said to be ready for the actual study (Wright, 2021).

3.5 TECHNIQUES OF DATA ANALYSIS

3.5.1 Descriptive Analysis

Descriptive analysis means a descriptive statistic summarizing the data collected which represents the population or sample of population. Through this analysis, the researchers will be able to describe the data according to specific group of people using various graph and charts (Wasserman & Faust, 1994). Also, the researchers are able to make the conclusion through this analysis (Thompson, 2009).

In this research, various tables, graphs and charts would be generated to analyze the data that are collected from the questionnaire. This descriptive analysis would be mainly used for demographic questions asked in section A, which conclusion of behavior differences among difference groups could be drawn. For example, the adopt intention of E-wallet might be difference according to group, age group, employment status and so on.

3.5.2 Partial Least Square-Structural Equation Modelling (PLS-SEM)

PLS-SEM is a data analysis technique used to estimate correlation between regressors and regressand. However, it is mostly used for large and complicated models with numerous amounts of elements, latent variables, and structural paths without imposing distributional assumptions on the data. It is a combination of multiple regression analysis and factor analysis, allowing estimation of structural relationships between observed variables and latent variables. In short, PLS-SEM is also an approach of SEM used to emphasize the prediction in the structuring models and provide explanations (Hair et al., 2019).

3.5.2.1 Outer Loadings

Outer Loadings Analysis is an indicator to obtain the factor loading for each indicator included. In the early stage, the researcher suggests to use a new established scale, which variables above 0.50 should be retained in the measurement model (Afthanorhan, 2022). The practice of removing items with value lower than 0.50 is because it brings a mean of low distribution of constructs towards the factors. From the research by Henseler et al. (2009), they estimated that every indicator variance must be interpretable by latent variables and they suggested an acceptable outer loading value of at least 0.7.

3.5.2.2 Reliability Test

Reliability means the extent that when a study is repeated, the same result will be generated. Three reliability tests would be used, which are Cronbach's alpha, composite reliability (CR) and average variance extracted (AVE).

3.5.2.2.1 Cronbach's Alpha

Cronbach's alpha is an internal consistency reliability, mainly practiced to test the reliability of Likert scale questionnaires which consist of latent variables (Tavakol & Dennick, 2011). Besides, it is a measure of reliability for models that are unweighted (Bonett & Wright, 2014). The value of measurement the alpha is between the scale 0 to 1. The value of Cronbach's alpha will explain the model relationship. The higher the value of α, the higher the internal consistency (Tavakol & Dennick, 2011). Formula for this test is $= \frac{N \cdot \bar{c}}{\bar{v}+(N-1)\cdot\bar{c}}$, and this result can be generated directly using SmartPLS software. It is recommended to have alpha coefficients of more than 0.8, as it means good internal consistency, and it indicates that the model is more reliable with higher alpha value (Sharma, 2016). Cronbach's alpha value lower than 0.7 should be avoided

as it is an indication of questionable and poor internal consistency, thus it should be rejected.

3.5.2.2.2 Composite Reliability (CR)

According to Bacon et al. (1995), composite reliability (CR) is an internal consistency reliability test, and it is much similar to Cronbach's alpha. This reliability test can be done using confirmatory factor analysis, available in SmartPLS software also. The formula of composite reliability test is $\frac{(\sum_{i=1}^{p}\lambda_i)^2}{(\sum_{i=1}^{p}\lambda_i)^2+\sum_{i}^{p}V(\delta)}$. Models with the high value means a higher level of reliability. The acceptable level for composite reliability is between 0.60 and 0.70. It is good to have value of more than 0.70. However, value exceeding 0.95 should be avoided as it may indicators correlation between the error terms of indicators.

3.5.2.2.3 Average Variance Extracted (AVE)

Average variance extracted (AVE) is used to assess convergent validity which the average amount of variance in the dependent variables that a construct can explain (Santos & Cirillo, 2020). The formula for AVE is $AVE = \frac{(\sum_{i=1}^{k}\lambda_i)^2}{(\sum_{i=1}^{k}\lambda_i)^2+\sum_{i=1}^{k}Var(e_i)}$. Besides, the AVE is tested to different latent constructs. A higher the average variance extracted means a higher convergent validity for the correlation between the latent variable and explained variables (Anderson & Swaminathan, 2011). From previous studies regarding this reliability test, the value of AVE above 0.5 is always in favor as it indicates that more that 50% of the variance can be explained (Gotz et al., 2010). When the value of average variance extracted indicates as satisfactory of indicators, the researcher can proceed to evaluate the measurement model.

3.5.2.3 Discriminant Validity

Besides reliability test, discriminant validity test also would be conducted in this research. Discriminant validity test is conducted with the purpose to determine whether there is overlapping problem among the latent variables. In general, this assessment has become one of the necessary conditions in a research study in order to figure out the relationship between latent variables (Henseler, Ringle & Sarstedt, 2014). There were two different methods to be used in this research to find out the discriminants validity, which are Heterotrait Monotrait ratio of correlations (HTMT) method and Fornell-Lacker criterion.

3.5.2.3.1 Heterotrait Monotrait Ratio of Correlations (HTMT)

According to Hosen et al. (2021), Heterotrait Monotrait ratio method is a discriminant validity tests that newly introduced after other common discriminant validity methods such as Fornell-Lacker method and cross loadings method, and it is applied for partial least squares structural equation modelling (PLS-SEM). HTMT could identify whether the latent variables are statistically different from each other (Benitez, Henseler, Castillo & Schuberth, 2020). Several studies have stated that HTMT ratio method have more advantages than other alternative. For further illustration, HTMT can reach up to 97% to 99% of specificity and sensitivity rates (Hamid et al., 2017).

HTMT ratio method could determine and interpret clearly about the correlation between two constructs. According to Benitez et al. (2020), there are two ways to determine discriminant validity by using HTMT ratio of correlation in general. Firstly, the value obtained from HTMT ratio method between two constructs become the basis for discriminant validity test. The value obtained should be smaller than 1, in order to show that the relationship between that particular two constructs is most likely to be different, and do not have high correlation between each other. If the value of HTMT value obtained is near to 1, it brings the meaning that the latent variables are lack of

discriminant validity, the latent variables have the problem of they themselves are unable be separated clearly between one and another, meaning that they are influencing each other.

Secondly, a threshold also should be predetermined before conducting the HTMT test. This happen because the value obtained from HTMT ratio method could be compared with the threshold (Hamid et al., 2017). The reason of this pre-determined threshold is because that if in the case of the value computed by HTMT ratio method is larger than the threshold determined, it indicates that there is discriminant validity problem, where the latent variables are lack of discriminant validity. However, there are different level of threshold suggested by different authors. In short, threshold of 0.85 and 0.90 are commonly applied and still debatable (Clark & Watson 1995; Kline, 2011; Gold et al. 2001; Teo et al. 2008, as cited in Henseler, 2014).

3.5.2.3.2 Fornell-Larcker Criterion

Fornell-Larcker criterion would be another method to determine whether the latent variables could reach to the discriminant validity, it is also a long-used method which was introduced for more than 30 years (Henseler, Ringle & Sarstedt, 2014). Fornell-Lacker criterion method claimed that if there are more variance on the indicator of a latent variable as compared to the variance that it shares with other constructs, then that particular latent variable could reach the discriminant validity. To evaluate the discriminant validity, the square root of AVE obtained must be made comparison with the connection of latent constructs. As a result, the square roots of AVE should have a higher value as compared to the other latent variables (Hamid, Sami & Mohmad, 2017). However, there are some studies mentioned that Fornell-Larcker criterion is ineffective because it depends on consistent factor loading estimates (Hosen et al., 2021).

3.5.2.4 Bootstrapping

Non-parametric system that analyse the statistical significance of various PLS-SEM results, as well as the path coefficients is known as bootstrapping. Since the assumptions of PLS-SEM allows the data to be not normally distributed, the parametric significance tests therefore cannot be practiced to test whether coefficients are significant. Thus, the non-parametric bootstrap procedure plays an important role to help the researchers to conclude that whether the estimated path coefficients in the PLS-SEM are significant or not significant (Davison & Hinkley, 1997).

In bootstrapping, subsamples with randomly drawn observations would be created from original set of data and the subsamples created are then used to estimate the PLS path model. This mechanism would be rerun until many randomly selected subsamples had been created. The bootstrap subsamples were then used to draw standard errors for the PLS-SEM results. Through the standard errors, the p-value would be able to calculate in order to access the PLS-SEM estimation results.

3.5.2.4.1 Path Coefficient

In this research, path coefficient would be employed to analyse the significance of relationship between the explanatory and explained variables. When the path coefficient is statistically significant, the dependent variable and those independent variables can be said to have causal connection.

According to Hair et al. (2017), path coefficients comprise of standardized values that ranged from "-1" to "+1". The negative sign indicates that there is a negative connection between the explanatory variables and explained variable. Moreover, positive effect of independent variables towards dependent variable would be signified by a positive sign. In addition, a value approaching 1 indicates a strong connection

between the explanatory variables and explained variable. In contrast, value close to 0 illustrates a weak relationship.

3.5.2.4.2 P-Value

In this research, significance of variables is concluded through the comparison with P-value. The significance level (α) was used as a pre-determined probability to compare with P-values of variables. The null hypothesis indicates that the variables are similar to each other and there are no differences between them. Therefore, rejection of null hypothesis would occur in the case of P-value of variables smaller than significance level. The significance level used in this research will be 5%.

3.6 Outcomes of Pilot Test

3.6.1 Outer Loadings

Table 3.1: Outcomes of Outer Loadings (Pilot Test)

	AD	PE	EE	SI	FC	HA	HM
AD1	0.828						
AD2	0.841						
AD3	0.855						
AD4	0.865						
AD5	0.856						
PE1		0.924					
PE2		0.785					
PE3		0.804					
PE4		0.854					
PE5		0.890					

EE1	0.939			
EE2	0.956			
EE3	0.823			
EE4	0.864			
EE5	0.910			
SI1		0.654		
SI2		0.730		
SI3		0.868		
SI4		0.887		
SI5		0.610		
FC1			0.906	
FC2			0.806	
FC3			0.894	
FC4			0.895	
FC5			0.841	
HA1				0.892
HA2				0.833
HA3				0.635
HA4				0.823
HA5				0.907
HM1				0.904
HM2				0.867
HM3				0.845
HM4				0.932
HM5				0.717

Source: Prepared by the authors

In pilot test of this research, outer loading was run to measure the reliability of the variables. The values that are higher than 0.70 shown in outer loadings results indicate that the reliability of the variables is internal consistent. Furthermore, the value of outer loadings that is below 0.50 should be removed from the study. The result of outer loadings showed that most of the variables fall that between the range of 0.70 to 0.95, thus it can be said that the data set is reliable. Other than that, there are only few

indicators having outer loadings value of below 0.70 which are SI1, SI5 and HA3. From some of the research, these indicators should be removed from the data set, however, there are also studies claiming that value above 0.50 is acceptable and can be remained (Afthanorhan, 2013). Therefore, the three items in remained in this research as the low in value may due to small sample size.

3.6.2 Cronbach's Alpha

Table 3.2: Outcomes of Cronbach's Alpha (Pilot Test)

Variables	Cronbach's Alpha Value
Adopt Intention of E-wallet	0.903
Performance Expectancy	0.908
Effort Expectancy	0.941
Social Influence	0.823
Facilitating Conditions	0.918
Habit	0.884
Hedonic Motivation	0.915

Source: Prepared by authors

Cronbach's alpha was also included with the aim to assess the data set's reliability. According to the research by Sharma (2016), Cronbach's alpha value in the range of 0.80 and 0.90 means "good" and "excellent" reliability and it is internal consistent. From the results, 5 out of 7 variables are having excellent reliability while 2 of them are having reliability with good internal consistency.

3.6.3 Composite Reliability (CR)

Table 3.3: Outcomes of Composite Reliability (Pilot Test)

Variables	Composite Reliability Value
Adopt Intention of E-wallet	0.928
Performance Expectancy	0.930
Effort Expectancy	0.955
Social Influence	0.869
Facilitating Conditions	0.939
Habit	0.912
Hedonic Motivation	0.932

Source: Prepared by authors

Composite reliability test had been run for pilot test also to test the internal consistency and data set reliability. It is stated that value above 0.60 is acceptable, but it is highly suggested to have value more than 0.70, which means the internal consistency has been achieved. From the results generated, the values are all above 0.80, meaning that there is high reliability of data and internal consistency of the data set. However, it should be taken extra eye on the effort expectancy variable as it is having a value higher than 0.955, and it indicates there is a high chance that the error terms of indicator are correlated (Bacon et al., 1995).

3.6.4 Average Variance Extracted (AVE)

Table 3.4: Outcomes of Average Variance Extracted (Pilot Test)

Variables	Average Variance Extracted Value
Adopt Intention of E-wallet	0.721
Performance Expectancy	0.728
Effort Expectancy	0.810
Social Influence	0.575
Facilitating Conditions	0.755
Habit	0.678
Hedonic Motivation	0.733

Source: Prepared by authors

Other than reliability test, average variance extracted test had been done in the pilot test also to examine the convergent validity of the variables. Gotz et al. (2010) suggested the constructs to have value more than 0.50 as it means that 50% of the variables are explainable. From the results generated from SmartPLS, all the AVE value are higher than 0.50, thus it could be concluded that the variables tested are having high validity and they are reliable.

3.6.5 Summary of Pilot Test Outcomes

Based on all the test conducted for the pilot test, all the results are acceptable and some are even showing good and excellent reliability and validity, it could be concluded that this research is reliable and valid. Therefore, it is fine to proceed to deeper research which involve a total of 400 responses.

3.7 Conclusion

Various method and techniques in running the data of research had been clearly discussed and explained in this chapter. The pilot test for this research had been run and the results of pilot test had been analysed. In the following chapter, the outcomes of full data sets will be analysed and discussed in detailed.

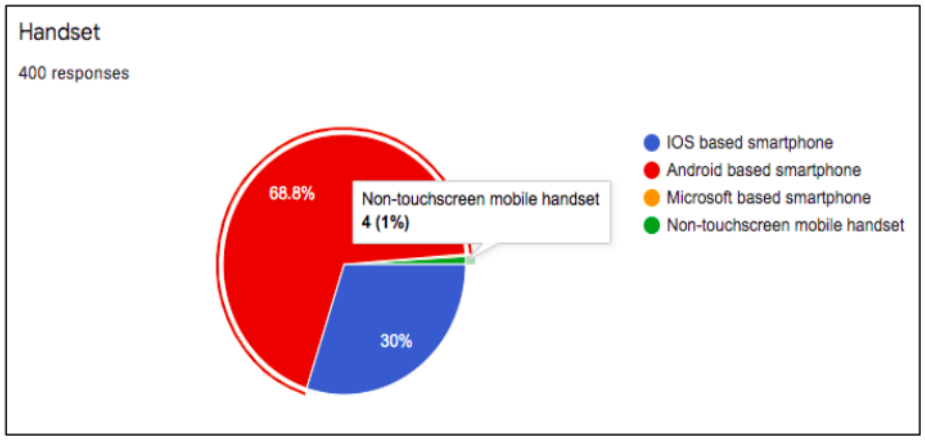
CHAPTER 4: DATA ANALYSIS

4.0 Introduction

Data analysis was performed according to the responses obtained from target sample. Descriptive analysis was conducted in order to define respondents' demographic biography. In this research, SmartPLS 3.3.7 software was used in purpose of finding out the determinants impacting the adopt intention of E-wallet among the Malaysian Generation Z. The results of PLS-SEM would be detailly justified in this section to deliver a clearer picture of this research.

4.1 Data Filtering

Figure 4.1: Filtering of data



Source: Prepared by the authors

This research had collected 400 responses from the questionnaires distributed through the online platform. The fifth question in the questionnaire is asking about the type of handset used by the respondents. Regrettably, as shown in figure 4.1 above, there are

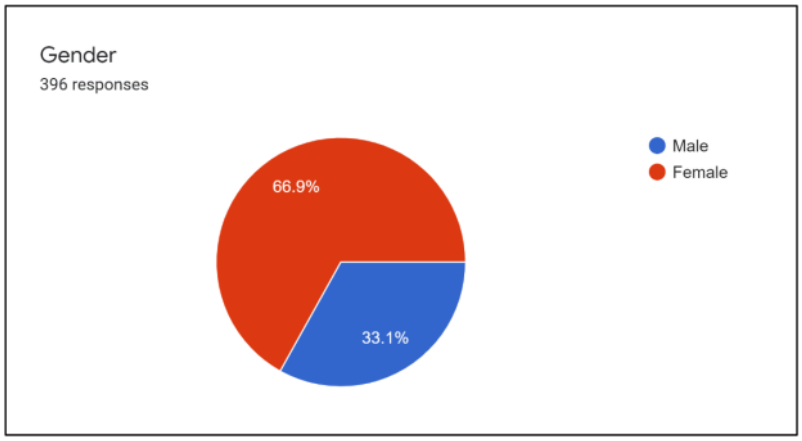
4 out of 400 respondents (1%) did not use smartphone. The responses of these 4 respondents had been detached from this research because the objective of this research is to analyse the adopt intention of E-wallet, that required smartphone to access. Therefore, 396 set of questionnaires had been used for data analysis.

4.2 Descriptive Analysis

Descriptive analysis represents the respondents' attributes and expresses their overall feedback. It was used to sort out the data pooled from the questionnaires. There were a few questions structured in this questionnaire, which includes demographic information of the respondents of questionnaire.

4.2.1 Gender

Figure 4.2: Statistics of Gender



Source: Prepared by the authors

Table 4.1: Statistics of Gender

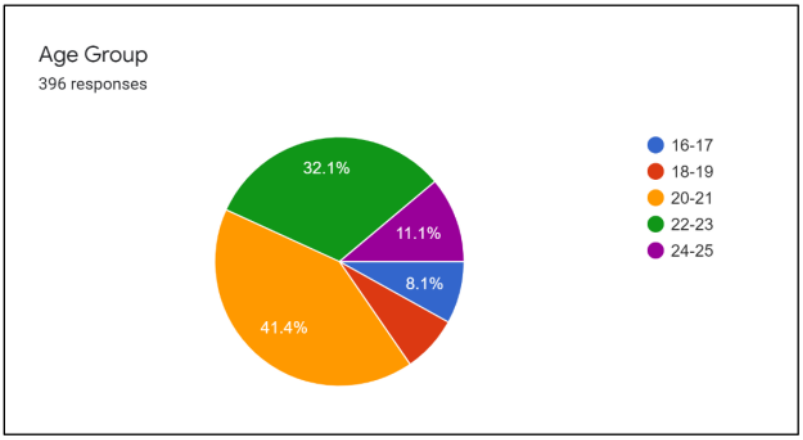
Gender	No. of Observations	Percentage (%)
Male	131	33.1
Female	265	66.9

Source: Prepared by the authors

Figure 4.2 and table 4.1 demonstrate the number and percentage of respondents in term of gender. The research targeted the population of Malaysian Generation Z aged between 16 and 25 years old and there are 396 respondents in this research. As shown in the results above, there are 265 female respondents (66.9%) and 131 male respondents (33.1%). Thus, there was more female respondents involved in this research, as compared to male respondents.

4.2.2 Age Group

Figure 4.3: Statistics of Age Group



Source: Prepared by the authors

Table 4.2: Statistics of Age Group

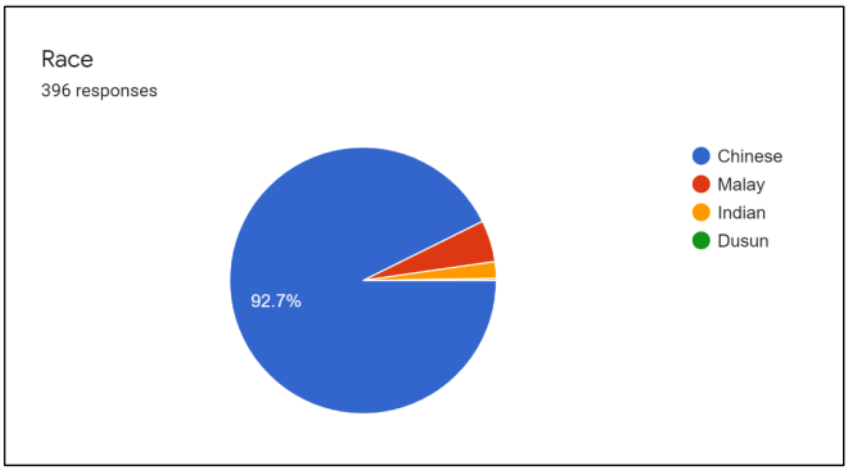
Age Group	No. of Observations	Percentage (%)
16-17	32	8.1
18-19	29	7.3
20-21	164	41.4
22-23	127	32.1
24-25	44	11.1

Source: Prepared by the authors

Figure 4.3 and table 4.2 show the percentage and number of observations received for the demographic information of age group. In this research, 20–21-year-old's age group has the highest percentage, which comprise of 164 respondents (41.4%). For 22-23-year-old's age group, it comprises a sum of 127 respondents (32.1%), representing the second highest percentage in this survey. Next, 44 of respondents (11.1%) are aged either 24 or 25 years old. For 16-17-year-old's age group, it occupies 8.1% of the respondents, which are 32 respondents. Whereas, 18-19-year-old's age group contains the lowest number of respondents, which are only 29 respondents that occupies 7.3% of the total respondents.

4.2.3 Race

Figure 4.4: Statistics of Race



Source: Prepared by the authors

Table 4.3: Statistics of Race

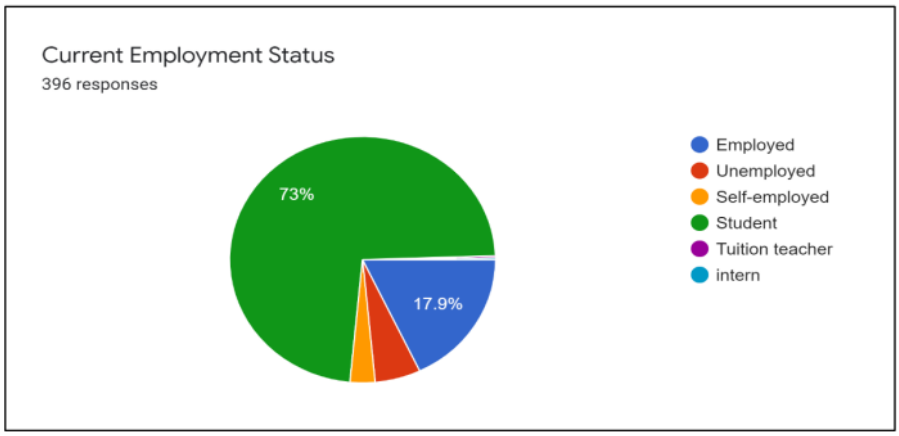
Race	No. of Observations	Percentage (%)
Chinese	367	92.7
Malay	20	5.1
Indian	8	2.0
Others (Dusun)	1	0.3

Source: Prepared by the authors

Figure 4.4 and table 4.3 indicate the number of observations and percentage of the respondents' race. According to the outcome generated, majority of them are Chinese, which contributed 92.7% from the chart, where 367 of them are Chinese out of total 396 respondents. Next, 20 respondents are Malay, which converted to 5.1% in the chart. Moreover, there are 8 respondents are Indian, which is 2% of the total respondents, and there is 1 respondent specifically stated as Dusun, which comprise of 0.3% of the result.

4.2.4 Current Employment Status

Figure 4.5: Statistics of Current Employment Status



Source: Prepared by the authors

Table 4.4: Statistics of Current Employment Status

Current Employment Status	No. of Observations	Percentage (%)
Employed	71	17.9
Unemployed	22	5.6
Self-employed	12	3.0
Students	289	73.0
Others (Intern & Tuition teacher)	2	0.6

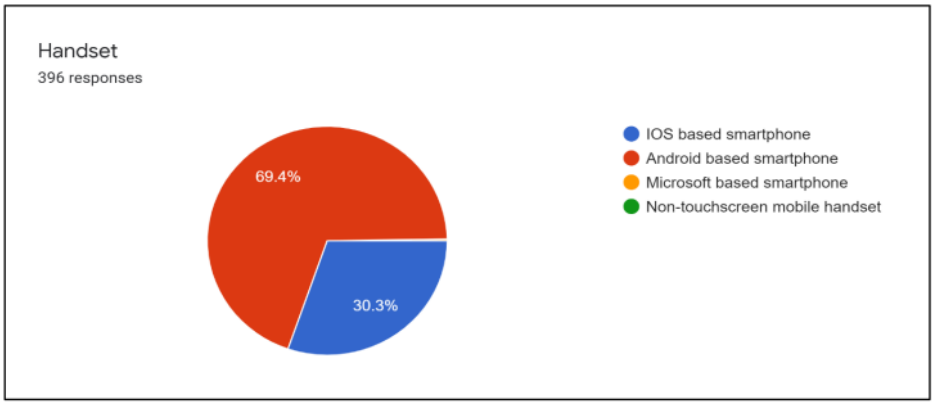
Source: Prepared by the authors

Figure 4.5 and table 4.4 illustrate the frequency and percentage of respondents' employment status. Among 396 respondents, student is the largest groups, which consists of 289 respondents (73%). Next, 71 respondents are currently employed, converted to 17.9% of 396 respondents. On the other hand, 22 respondents are unemployed, contributed 5.6% of total respondents. Besides, there are 12 respondents are self-employed which occupy 3% of the total respondents in this research. There are

also 2 respondents that specifically stated their occupation, which are intern and tuition teacher respectively, they are converted to 0.6% from 396 respondents.

4.2.5 Handset

Figure 4.6: Statistics of Handset



Source: Prepared by the authors

Table 4.5: Statistics of Handset

Handset	No. of Observations	Percentage (%)
IOS based smartphone	120	30.3
Android based smartphone	275	69.4
Microsoft based smartphone	1	0.3

Source: Prepared by the authors

Figure 4.6 and table 4.5 display the frequency and percentage of respondents' current handset. According to the outcome, Android based smartphone is the choice for most of the respondents in this research, it consists of 275 respondents, meaning that 69.4% of the total respondents are currently holding Android based smartphone, which is the

highest percentage group among 396 respondents. The second highest percentage group is IOS based smartphone, it comprises of 120 respondents (30.3%) out of the total respondents. Moreover, there is only 1 respondent uses Microsoft based smartphone, which converted to 0.3% of the total respondents.

4.3 Partial Least Square – Structural Equation Modelling (PLS-SEM)

4.3.1 Outer Loadings

Table 4.6: Results of Outer Loadings

	AD	PE	EE	SI	FC	HA	HM
AD1	0.838						
AD2	0.859						
AD3	0.844						
AD4	0.827						
AD5	0.835						
PE1		0.866					
PE2		0.885					
PE3		0.862					
PE4		0.881					
PE5		0.854					
EE1			0.877				
EE2			0.874				
EE3			0.879				
EE4			0.864				
EE5			0.890				
SI1				0.841			
SI2				0.845			

SI3	0.825			
SI4	0.879			
SI5	0.809			
FC1		0.767		
FC2		0.831		
FC3		0.867		
FC4		0.733		
FC5		0.836		
HA1			0.860	
HA2			0.882	
HA3			0.864	
HA4			0.841	
HA5			0.870	
HM1				0.915
HM2				0.904
HM3				0.887
HM4				0.887
HM5				0.833

Source: Prepared by the authors

Based on the above result shown by SamrtPLS 3.3.7, all the variables show values fall between the range of 0.70 to 0.95 represent the high satisfaction for outer loadings result. Besides that, the explained variable, adopt intention of E-wallet, shows the result that indicates high internal consistency. Moreover, the independent variables for the study also show high satisfaction for the value of outer loadings. The HM1 shows a value of 0.915, thus it is the most reliable element among all. All the items denote value higher than the benchmark of 0.70. Therefore, all the variables for outer loadings can be considered highly satisfied. From the table shown, there is no variable having value lower than 0.70, so none of the items would be eliminated from this model.

4.3.2 Reliability Test

4.3.2.1 Cronbach's Alpha

Table 4.7: Results of Cronbach's Alpha

Variables	Cronbach's Alpha Value
Adopt Intention of E-wallet	0.896
Performance Expectancy	0.920
Effort Expectancy	0.925
Social Influence	0.896
Facilitating Conditions	0.866
Habit	0.914
Hedonic Motivation	0.931

Source: Prepared by the authors

Based on the above table, Cronbach's Alpha value of hedonic motivation is the highest among all, implying that the variable of hedonic motivation is more reliable than others. Besides that, there are three variables considered as 'good' internal consistency which are adopt intention of E-wallet, social influence, and facilitating conditions as the results for these three constructs are in between 0.80 to 0.90. On the other hand, the remaining three variable show "excellent" results for Cronbach's alpha, which are 0.925, 0.920 and 0.914 for effort expectancy, performance expectancy and habit respectively. Since the results generated for Cronbach's Alpha showed that all values are fall between 0.80 to 0.95, all the variables are said to be having good internal consistency and high reliability.

4.3.2.2 Composite Reliability (CR)

Table 4.8: Results of Composite Reliability

Variables	Composite Reliability Value
Adopt Intention of E-wallet	0.923
Performance Expectancy	0.940
Effort Expectancy	0.943
Social Influence	0.923
Facilitating Conditions	0.904
Habit	0.936
Hedonic Motivation	0.948

Source: Prepared by the authors

From the outcome generated using SmartPLS 3.3.7, all the variables tested show composite reliability value exceeding 0.9, indicates high reliability for all variables. Among all seven items, hedonic motivation shows the highest composite reliability value, which is 0.948 while the lowest is facilitating conditions, which is 0.904. The composite reliability result for effort expectancy is the second highest, which is 0.943, followed by performance expectancy that is 0.940 in value. Moreover, habit shows a CR value of 0.936, which the reliability is high. The dependent variable in this research, adopt intention of E-wallet shares the same result with social influence, which the composite reliability value is 0.923. Based on the results generated for composite reliability, it could be concluded that the variables are highly reliable as all of them shows value above 0.9. Internal consistency is achieved in this research.

4.3.2.3 Average Variance Extracted (AVE)

Table 4.9: Results of Average Variance Extracted

Variables	Average Variance Extracted Value
Adopt Intention of E-wallet	0.707
Performance Expectancy	0.756
Effort Expectancy	0.769
Social Influence	0.706
Facilitating Conditions	0.653
Habit	0.745
Hedonic Motivation	0.785

Source: Prepared by the authors

According to the outcome, the variable with the highest AVE result is hedonic motivation while the lowest is facilitating conditions, similar to the composite reliability outcome. Hedonic motivation shows an AVE value of 0.785, meaning that 78.5% of the variables can be explained in the model and the convergent validity is obtained. The second highest AVE value is 0.769, shown by effort expectancy and followed by performance expectancy, which is 0.756. The AVE outcomes for habit, adopt intention of E-wallet and social influence are 0.745, 0.707 and 0.706 respectively. The lowest value is facilitating conditions, which is 0.653, indicates that 65.3% of the variance are explainable. As a short conclusion, 6 out of 7 variables shows an AVE value exceeding 0.70 and the remaining variable is show outcome of more than 0.60, this means that more than 60% of the variances are able to be explained in this model and means that convergent validity is obtained for this model.

4.3.3 Discriminant Validity

4.3.3.1 Heterotrait-Monotrait Ratio of Correlations (HTMT)

Table 4.10: Results of Heterotrait-Monotrait Ratio of Correlations (HTMT)

Variables	AD	EE	FC	HA	HM	PE	SI
AD							
EE	0.531						
FC	0.553	0.817					
HA	0.702	0.389	0.397				
HM	0.749	0.455	0.531	0.620			
PE	0.594	0.764	0.689	0.537	0.525		
SI	0.639	0.438	0.425	0.699	0.574	0.516	

Source: Prepared by the authors

Table 4.10 show the result of Heterotrait-Monotrait Ratio of Correlations. According to the outcome, all the values obtained from HTMT ratio of correlations are smaller than 1, the highest value would be the combination of EE and FC, which showed 0.817. The result conveys the meaning that the relationship between each combination of two particular constructs in this research are different, the latent variables are differentiable and do not have high correlation between each other. In additions, the alternative way to determine discriminant validity would be the values obtained from HTMT should not be higher than the pre-determined thresholds. Based on the result, there is no any combination of constructs exceed the lower threshold of 0.85. Therefore, the outcome obtained from of HTMT ratio of correlations signifies an absent of discriminant validity issue in this research.

4.3.3.2 Fornell-Larcker Criterion

Table 4.11: Results of Fornell-Larcker Criterion

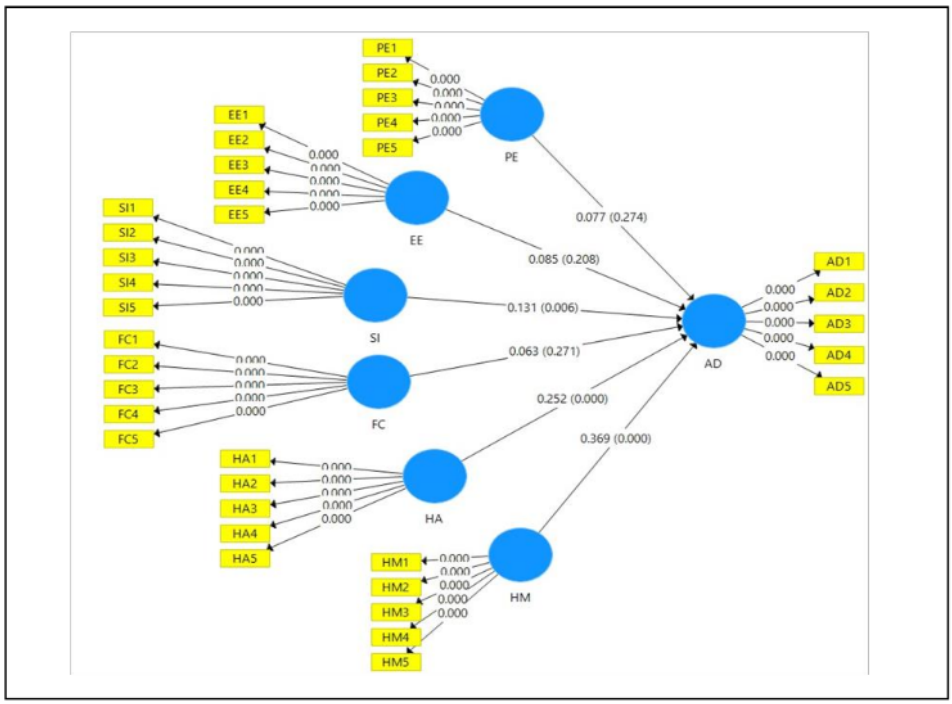
Variable	AD	EE	FC	HA	HM	PE	SI
AD	0.841						
EE	0.486	0.877					
FC	0.489	0.728	0.808				
HA	0.637	0.360	0.356	0.863			
HM	0.686	0.426	0.481	0.574	0.886		
PE	0.540	0.705	0.614	0.492	0.487	0.870	
SI	0.578	0.403	0.380	0.631	0.526	0.469	0.840

Source: Prepared by the authors

In order to have a more accurate result on discriminant validity test, Fornell-Larcker Criterion was conducted to investigate relationship between combinations of two constructs for each latent variables in this research. Based on the theory of Fornell-Larcker Criterion, the square roots of AVE must exceed other latent variables' value. Based on the outcome, the square roots of AVE for each variable combination are showed as the first value of each column, which are 0.841, 0.877, 0808, 0.863, 0.886, 0.870, and 0.840 respectively. All of these values are showed as the highest value as compared to other latent variable values in the same column. Thus, it can be concluded that the variables in this research have obtained discriminant validity.

4.3.4 Bootstrapping

Figure 4.7: Results of Bootstrapping



Source: Prepared by the authors

4.3.4.1 Path Coefficient

Table 4.12: Results of Path Coefficient

Constructs	Original Sample Value
PE → AD	0.077
EE → AD	0.085
SI → AD	0.131
FC → AD	0.063
HA → AD	0.252
HM → AD	0.369

Source: Prepared by authors

Table 4.13 shows the path coefficient for each variable. All the values are tested positive, indicating that increase in 1 unit of explanatory variables will lead to increase in explained variables. A higher path coefficient may indicate a greater effect of the variable towards the explained variables. Moreover, the outcomes show that HM has the greatest reaction towards AD, whereby a 1 unit increase in HM causes AD to rise by 0.369 units.

4.3.4.2 P-value

Table 4.13: Results of P-value

Constructs	P-value	Significant	Reject H_0
PE → AD	0.274	No	No
EE → AD	0.208	No	No
SI → AD	0.006	Yes	Yes
FC → AD	0.271	No	No
HA → AD	0.000	Yes	Yes
HM → AD	0.000	Yes	Yes

Source: Prepared by authors

P-value is used to conduct hypothesis testing in this research. The significance level in this research is assumed to be 5%. As shown in table 4.12, SI, HA and HM show the result of 0.006, 0.000 and 0.000 respectively. The P-value of these 3 variables is lower than the significance level of 0.05, indicating that there are relationships between these three explanatory variables and the explained variables. From here, it is concluded that social influence (SI), habit (HA) and hedonic motivation (HM) are influencing the adopt intention of E-wallet (AD) among Generation Z in Malaysia significantly. On the other hand, P-values of PE, EE and FC exceed the significance level of 0.05 which are 0.274, 0.208 and 0.271 respectively. From the results, a conclusion is made that the relationship of PE, EE and FC toward the AD are not significant.

4.4 Conclusion

In this chapter, all results showed were generated from SmartPLS 3.3.7 software. The data collected in the survey through questionnaires are used for the analysis of descriptive information, test of reliability, discriminant validity and bootstrapping, with the aim to test relationships and differences between the explanatory variables and the explained variables, as well as the demographic profile among Generation Z in Malaysia. In this chapter, social influence, habit and hedonic motivation are the only significant factors to influence adopt intention of E-wallet, and the reason behind will be justified in Chapter 5.

CHAPTER 5: DISCUSSION, CONCLUSION AND IMPLICATIONS

5.0 Introduction

Chapter 5 mainly focuses on the summarising and reasoning of statistics generated from Chapter 4 to test the validity of the hypothesis designed. Other than that, the limitations and recommendations associated with the statistical research results will also be made for potential future studies.

5.1 Summary of Statistical Analysis

This research had collected 400 questionnaires in total and only 396 responses were used in data analysis. The target sample of this research are Malaysian who born between year 1997 and 2005. For the pilot test of 30 samples, three reliability tests (i.e., Cronbach's Alpha, CR, and AVE) had been run and all the outcomes indicated that all the variables used in this research are highly reliable and meet internal consistency. Other than that, AVE outcomes also claimed that the model in this research has achieved the convergent validity. Hence, the outcomes of pilot test indicates that this research model is valid and reliable, therefore the 396 questionnaire responses were used.

In the investigation for the 396 data sets, both Cronbach's Alpha and CR showed that HM is the most significant reliable variables in internal consistency, followed by EE, PE, HA, SI and FC. The same goes to AVE test, where the variable with the highest convergent validity is HM factor. The second highest to the least valid variables are same as that is Cronbach's Alpha and CR. All outcomes are fall under "acceptable", "good" and "excellent" level of acceptance; thus, all the variables came out to be

satisfied so this research model is said to be reliable. Moreover, according to the outcomes obtained from HTMT and Fornell-Larcker Criterion, both tests showed that the latent variables studied in this model is not correlated and there is agreeable amount of discriminant validity in this model. So, multicollinearity problem was absent in this research model and this model is valid.

According to the bootstrapping results, p-value approach showed that only SI, HA and HM are significant factors influencing the AD of Malaysian Generation Z. In contrast, PE, EE and FC are not significantly affecting the AD. However, by using the path coefficient approach, all the independent variables are said to be positively influencing the AD for Malaysian Generation Z because all the path coefficients are shown in positive value. HM, HA and SI has more significant and greater impact on the AD as the value shown are all higher than 0.1. In contrast, the path coefficient values for PE, EE and FC are lower than 0.1. This means that even though these three factors are positively affecting the dependent variables, but the effect are very low. By combining the outcomes of p-value and path coefficients, there are only half of the constructs are significant while another half is insignificant. In short, SI, HA and HM are the significant factors that impact the AD for Malaysian Generation Z while the correlation between PE, EE and FC towards the AD for Malaysian Generation Z are not significant.

5.2 Discussion on Independents Variables

5.2.1 Performance Expectancy

The findings show that the correlation is not significant between PE and the AD among the Generation Z in Malaysia. This result shows an opposite site with the previous studies from Koksal (2016) that stated that performance expectancy impact strongly on information technology adoption. According to Venkatesh et al. (2003), performance expectancy refers to how beneficial the use of "certain system" is for an individual in performing "certain activities". Thus, there may be variations in this relationship's significance on distinct activities carried out by the E-wallet users when using the E-wallet or the E-wallet application that used by Generation Z in Malaysia. This assumption is uniform with the findings from Mahfuz et al. (2017) who also did not find a notable relationship between performance expectancy and the adoption of mobile banking services using the UTAUT2 model since they evaluated the relationship in general terms as well. To be more specific, when researchers study the adoption of mobile banking services instead of the adoption of specific mobile banking services, stated in the brand name, insignificant relationship will be found between performance expectancy and the adoption of mobile banking services.

5.2.2 Effort Expectancy

The findings show that the effect of EE towards AD among the Generation Z in Malaysia is not significant. This result shows an opposite site with the previous studies from Alawan et al. (2017) that confirmed that effort expectancy positively influences Jordanian banking customers' desire in mobile banking adoption. According to The Star (2019), Malaysian Generation Z, with 99% smartphone ownership, is a digital native generation and they have not known life without the digital technologies and Internet access. In line with this, the absence of significant correlation between effort

expectancy and adopt intention of E-wallet among Generation Z in Malaysia can be justified as Generation Z in Malaysia are more experienced users of smartphone and mobile applications. Since, they are more proficient to use complex systems, therefore, effort expectancy does not impact the adopt intention of E-wallet among the Generation Z in Malaysia.

5.2.3 Social Influence

The findings show that there would be a notable correlation between SI and the AD among Generation Z in Malaysia. Kulviwat et al. (2009) claimed that social influence is significantly influencing the adoption of high technology innovation. Therefore, this result shows that if people important to Generation Z persuade them to use certain new technology or system, it will significantly influence the adopt intention of Generation Z in E-wallet. The result was supported by the presumption of SI-AD relationship earlier in hypothesis development section in Chapter 2, which social influence is vital in stimulating adopt intention of E-wallet among the Generation Z. The relationship also supported by some previous studies from Panwar and Tak (2017), Sivathanu (2018) and Yang (2010), which stated that the effect of social influence towards the intention to use the digital payment systems is positive and strong.

5.2.4 Facilitating Conditions

The findings show that the correlation between FC and AD among Generation Z in Malaysia is insignificant. This result shows an opposite site with those previous studies mentioned earlier in this research. One of the previous studies stated that a comprehensive facilitating condition provided in a technology such as E-wallets, would be a crucial part to increase the intention of people in adopting E-wallet applications. This phenomenon happened because of the technical infrastructure available in the system to support and resolve problems faced by users while operating E-wallets could

make E-wallets more accessible (Widodo et al., 2019). Conversely, the result in this research shows that facilitating conditions and the adopt intention of E-wallet among Generation Z in Malaysia not closely related, it was different with the presumed impact between facilitating conditions and adopt intention of Generation Z in this research. This might happen because compared to other generations, a portion of adults Generation Z have a certain level of knowledge about digital knowledge and ability to complete E-wallets payment independently as they are born as a unique group in the digital era. Therefore, facilitating conditions do not influence the intention for Generation Z to adopt E-wallets.

5.2.5 Habit

The findings show that there would be a remarkable correlation between HA and the Generation Z's AD. According to concept of habit by Ajzen and Fishbein (2005), E-wallets could be the prior choice of people if he or she has previous experience in using it, because prior behavior could continuously impact future behavior of a person. Thus, this result shows if Generation Z has prior behavior of using E-wallet as their payment method, it will positively impact the intention of Generation Z to adopt E-wallets application. The result was supported by the presumption of relationship between habits and adopt intention of E-wallets earlier in this research, which habit plays one of the main roles in stimulating the adopt intention of E-wallet among Generation Z in Malaysia. The positive relationship is also supported by both of the previous studies from Sivathanu (2018) and Widodo et al. (2019). According to Widodo et al., (2019), habit shows the strongest impact on the motive and behavior of users to adopt digital wallets in Indonesia, while the discussion based on study conducted by Sivathanu (2018), users tend to use digital payments as future payment behavior in daily transactions as they are influenced by their previous habits.

5.2.6 Hedonic Motivation

The findings show that the reaction of HM on AD is remarkably positive, where if the Generation Z could perceive fun and they enjoy using a technology such as E-wallet, it will increase the intention for them adopting E-wallets applications and encourage them to use it. This result is tally with the presumption earlier where hedonic motivation positively affects the adopt intention. Besides, similar studies on mobile banking conducted by Boonsiritomachai et al., (2017) also found out that hedonic motivation is the most vital aspect in encouraging users to explore and adopt a new technology. Similar studies such as Panwar and Tak (2017) and Soodan and Rana (2020) also stated that intrinsic utilities such as joy, enjoyment, or even entertainment are the important elements that could influence a person's willingness to try on and utilize E-wallets in daily life. One will be motivated to explore and use more frequently on a technology when a high level of satisfaction and enjoyment is perceived during the process of operation, which is exactly what the hedonic motivation is measured.

5.3 Implications of Study

In this research, the results generated were mainly focus on the variables which will directly affect the adopt intention E-wallet. So, parties like policy makers and researchers or scholars can get assistance from this research for future study.

5.3.1 Managerial Implication

This research plays an important role in providing parties with deeper understanding of E-wallets and Generation Z to promote and achieve a cashless society in Malaysia. Hedonic Motivation is the most powerful determinant of adopt intention of E-wallet in Generation Z. The Generation Z are more pleasure on using the E-wallet. Furthermore,

the policy or rule maker can have better estimation on the environment and make E-wallet become more accessible to Generation Z to increase their intention to adopt E-wallet in future. Most people that are using E-wallet helps the country to achieve the goal of shifting to cashless society. For instance, government can promote more activities such as ways to use E-wallet to influence Malaysian's intention in adopting E-wallet. Also, policy maker can give more supports for the use of E-wallet to encourage the habit of digital transaction among Malaysians.

Apart from that, future researchers that are intended to investigate topics related to E-wallets, Generation Z, and cashless payment can take several benedictions from this research. The researchers can refer to this research for the future research. According to the result, the significant variables to affect adopt intention of E-wallet in this study are hedonic motivation, social influence, and habit. However, the variables such as effort expectancy, performance expectancy, and facilitating conditions showed insignificant impact to the adopt intention of E-wallet. From these results, future researchers may get an idea on relevant and usable factors in future studies related to this topic for various target respondents. As a result, the reader will have a deeper apprehension of Malaysia's E-wallets market. So, the future researcher will have more solutions when have references as a base in the study that can promote the cashless society in Malaysia.

5.4 Limitation of Study

Several limitations were discovered in this research. First and foremost, it is only targeting the Malaysian Generation Z population that have experiences in using E-wallet. Instead of the actual population of Generation Z in Malaysia, which are born between year 1997 to 2012, we are only targeting those who born between 1997 to 2005. By this, those who had no use E-wallet in the past and those who are too young to be studied are excluded. However, this research is aiming to observe the adopt intention of E-wallet for Malaysian Generation Z, therefore the findings of this research

might not be suitable to conclude all the decision of the whole Malaysian Generation Z as about half of the population are being excluded from this research. Furthermore, intention to adopt in some degree means that someone had not use something before and they may think of using it later. Thus, excluding those who have no experience in using E-wallet limit this research from knowing the real perception of non-users and the possibility of them using E-wallet in the future.

In addition, race of respondents is also one of the limitations of this research. The responses collected for questionnaires are mostly from Chinese respondents, with a percentage of more than 90% because the researchers of this research are all Chinese and it is easier for them to get responses from Chinese. Therefore, this research may only be suitable to conclude the opinion of Chinese Generation Z, but not all Generation Z. This is because Malaysia is well-known with its multiracial characteristic. Although they are responses from Malay, Indian and Dusun, but the amount is too low, which is unable to bring big impact on the overall results. Therefore, it is hard to generalize the responses collected to fit the opinion of all Malaysian Generation Z as people's view and says on E-wallet can be distinct due to different race and background.

On the other hand, this research is accepting too much responses from students. There are more than 70% of respondents are students. Although it is publicly known that Generation Z is still young and still studying. However, the fact that working adults and students are viewing things differently must not be denied. Working adults are expose to a more real, challenging and stressful environment than students, hence their opinion on E-wallet might be very different from students, but their contribution to the overall result of this research is much lower than students as students Generation Z is dominating this research.

5.5 Recommendation for Future Studies

Some limitations are being observed throughout the research, some recommendations are provided for future studies to overcome the limitations. Firstly, to let the research be more suitable to conclude all the opinions of the whole Malaysian Generation Z, future experimenters are recommended to widen the age range of the target respondents. Future researchers can conduct similar research again in the future when the minor grow up because at that time, they will be Generation Z having power to use E-wallet. By doing so, the result of the study can be more reliable.

Secondly, different races and backgrounds would have different perceptions and opinions towards an innovative product such as the E-wallet. Therefore, future researchers need to ensure that the complete responses are collected equally from all the races of Malaysian Generation Z. Researchers are encouraged to distribute the questionnaires equally among the Malay, Chinese and Indian. Thus, the probability of collecting complete responses equally from all races can be increased. By ensuring that none of the races dominate the survey, the result can conclude the opinion of all Malaysian Generation Z from different races and backgrounds, and the reliability and validity of the research can be improved

Thirdly, the members of Generation Z are actually in different stages of their life cycle. Some are considered children, some are teenagers, and the rest are considered adults. Since people's view of something might be different depending on their current employment status and life experiences, future researchers need to collect an equal number of complete responses from the students and workers of the Malaysian Generation Z. To resolve the limitation of end result does not represent the opinion of whole Malaysian Generation Z with different employment status and life experiences, researchers are suggested to distribute the responses equally among those Generation Z who are working and those who are studying. By doing so, the research may be capable to obtain more exact and reliable results.

Last but not least, as mentioned above, since the intention to adopt to some degree means that someone had not used something before and may think of using it later, it is crucial to understand the actual perception of non-users who lack skill and knowledge in using E-wallets. Thus, future researchers are recommended to include those unskilled and unknowledgeable users as target respondents of the survey. Future researchers are suggested to ask a question in the questionnaire to confirm the adoption intention of E-wallet for the non-smartphone users and non-E-wallet users before they start to fill in the questionnaires. For example, do the non-smartphone users, or non-E-wallet users consider to use E-wallets in the future. If they consider using E-wallet in the near future, their responses need not be eliminated by the researchers. By doing so, researchers can get an end result that represents the opinion of both users and non-users, and the result of the study can be more trustable.

5.6 Conclusion

In this research, the correlation between determinants that impact the adopt intention of E-wallet as the primary transaction method among Generation Z in Malaysia was being observed. There are six out of seven factors from the theory of Unified Theory of Acceptance Use of Technology 2 applied in this research to identify the relationship between those factors and adopt intention of Generation Z, which are performance expectancy, effort expectancy, social influence, facilitating conditions, habit, and hedonic motivation. Besides, partial least squares structural equation modeling (PLS-SEM) was applied as the method of data analysis by using Smart PLS version 3.3.7. PLS-SEM was used as the methodology in this research since latent variables existed and this method is effective in estimating complex relationships by using path modeling. Therefore, a questionnaire was distributed to Generation Z in Malaysia who aged from 16 to 25 years old by using a simple random sampling method. Consequently, data from 396 respondents were eligible to utilize as the data to conduct this research.

From the statistical analysis and major findings, there are some points to highlight in this research. Determinants such as social influence, habit and hedonic motivation are significant to the E-wallet adopt intention of Generation Z in Malaysia. On the other hand, factors such as performance expectancy, effort expectancy, and facilitating conditions are not significant in affecting adopt intention of Generation Z. With this result, it shows that the behavior of using E-wallets among Generation Z in Malaysia will highly impact the motive for them to adopt E-wallets as the main payment method in future. Meaning to say that, when Generation Z found that using E-wallets were common among them in completing a transaction, they will start to depend on using E-wallet applications among all other transaction methods. Moreover, pleasure derived from using E-wallets and opinion from people who are precious to Generation Z also the crucial parts to influence their future behavioral intention in payment methods.

E-wallet: Dominating Future Transaction Method for Generation Z in Malaysia

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