ADOPTION OF E-WALLET AMONG UNIVERSITI UTARA MALAYSIA STUDENTS

By

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ABSTRACT

E-wallet usage has several benefits for users, however due to certain reasons the adoption rate among Malaysian students is still very less. Therefore, this study aims to study the factors that affect e-wallet adoption among students in Utara Malaysia University (UUM). The study examines the factors influencing the use of e-wallet by conducting survey. 181 UUM students were randomly selected to respond to the survey. This study investigates the relationship between perceived ease of use, speed, security and social influence of UUM student's e-wallet adoption. The survey questionnaire consist of 25 item of construct and demographic questions. The result of this study can be concluded that there is a significant relationship between the perceived ease of use, speed, security. While there is no significant relationship for social influence on the e-wallet adoption of UUM students. It has been discovered that the strongest relations is between speed and e-wallet adoption. Finally, this study is important to researchers, buyers and sellers who engage in electronic wallets because it demonstrates perceived ease of use, speed, security and social influence. Only a few research studies have tried to clarify the factors influence e-wallet adoption with the adoption variables from Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT). Instead, several researchers investigated how e-wallet adoption is related to security and trust. This research can therefore extend the literature showing the four factors influencing the adoption e-wallet. E-wallet service providers can use result from this study to improvise their service in order to attract more people to adopt e-wallet by considering improvising the affecting factors.

Keywords: E-wallet, Speed, Perceived Ease of Use, Security, Social Influence

ABSTRAK

Penggunaan E-dompet mempunyai beberapa manfaat untuk pengguna, namun disebabkan oleh sebab tertentu kadar penerimaan di kalangan pelajar Malaysia masih kurang. Oleh itu, kajian ini bertujuan untuk mengkaji faktor yang melibatkan penerimaan e-dompet di kalangan pelajar di Universiti Utara Malaysia (UUM). Kajian ini mengkaji semula faktor yang mempengaruhi penerimaan e-dompet dengan menjalankan kajiselidik. 181 pelajar UUM telah dipilih secara rawak untuk menjawab kaji selidik itu. Kajian ini menyiasat hubungan antara kemudahan penggunaan, kelajuan, keselamatan dan pengaruh sosial pelajar UUM. Soal selidik kaji selidik ini terdiri daripada 25 bahan dan Soalan demografi. Hasil kajian ini dapat menyimpulkan bahawa terdapat hubungan yang signifikan antara kemudahan penggunaan, kelajuan, Keselamatan. Manakala tiada hubungan yang signifikan untuk pengaruh sosial terhadap penggunaan e-dompet pelajar UUM. Ia telah mendapati bahawa hubungan yang terkuat antara kelajuan dan e-dompet pengangkatan. Akhir sekali, kajian ini penting untuk penyelidik, pembeli dan penjual yang terlibat dalam dompet elektronik kerana ia menunjukkan kemudahan penggunaan, kelajuan, Keselamatan dan pengaruh sosial yang dilihat. Hanya beberapa kajian penyelidikan telah cuba menjelaskan faktor yang mempengaruhi e-dompet yang boleh diterima pakai dengan pemboleh ubah daripada Technology Acceptance Model (TAM) dan Unified Theory of Acceptance and Use of Technology (UTAUT). Sebaliknya, beberapa penyelidik menyiasat cara e-dompet diterima berkaitan dengan keselamatan dan kepercayaan. Justeru itu, kajian ini dapat memanjangkan lagi kesusasteraan yang menunjukkan empat faktor yang mempengaruhi e-dompet. Pembekal perkhidmatan E-dompet boleh menggunakan hasil kajian ini untuk mendapatkan semula perkhidmatan mereka untuk menarik lebih ramai orang untuk menggunakan e-dompet dengan mempertimbangkan mengimprovisasi faktor yang mempengaruhi.

Kata kunci: E-dompet, kelajuan, kemudahan penggunaan, keselamatan, pengaruh sosial

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LIST OF ABBREVIATIONS

AVE	Average Variance Extracted
BI	Behavioural Intent
CR	Composite Reliability
EPS	Electronic Payment System
GDP	Gross Domestic Product
HTMT	Heterotrait-Monotrait Ratio
NFC	Near Field Communications
PEOU	Perceived Ease of Use
PLS SEM	Partial Least Squares Structural Equation Modelling
PU	Perceived Utility
QR code	Quick Response code
SOCINF	Social Influence
TAM	Technology Acceptance Model
TRA	Theory of Reasoned Action
UK	United Kingdom
UTAUT	Unified Theory Acceptance and Use Theory
UUM	Universiti Utara Malaysia

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Payments system development not only stopped with plastic money but also progressed further in terms of technological growth and progress. The substantial growth in internet and mobile use has facilitated or may be referred to as e-payment systems. Furthermore, online shopping and the rise in banking also brought about a dramatic rise in e-payment use (Wróbel-Konior, 2020).

Instead of traditional paper money and coins, the modern method of payment to customers makes it easier, and the e-payment has been an important part of the business sector. Specific forms of payment methods are now used, for example, online banking, cards for debit, charge cards, credit cards also e-wallets, etc.

The Silent Generation born before 1942, Baby boomers are people who born from 1946 to 1964 and Generation X people were born from 1965 to 1976, is based on The Center for Generational Kinetics (2020). It followed generation Y, which came into existence from 1977 to 1995 and, finally, generation Z, which came into being after 1996. Various generations are usually categorized based on their acceptance of different things, their behaviour when meeting different trends, their reaction to innovation or technology, their attitude to expectations, etc. (Taylor, 2017).

Different generations have different levels of understanding and tolerance for technology. “Millennials: Coming of Age” (2020) identified the Generation Y as a generational change and globalization, which gave them different views and behaviors in comparison to previous generations, as an overview of working generations.

Therefore, technology adaptations will vary between generations. The Z generation with a larger media and technology environment is more knowledgeable plus more skilled, Unlike the previous generation, according to WJSchroer (2018). Research shows that users in generation Y prefer to accept more wireless service and the current internet world than the previous generations (Gafni & Geri, 2013).

Recent studies show that over 60% of youngsters between 18 and 25 age range in the UK uses electronic payment wallet now, and they believe cash is an old idea, particularly when they realize that cash can be substituted (Moneymailme, 2017). Besides, based on a survey of "Finder" an independent comparison site in the United States, two in five Americans use mobile payment systems. Besides, the survey also found that those millennials, in particular, are the student groups that are used to technology, as the biggest users of digital wallets (Olivia Chow, 2020).

The most cashless countries are found to be, Russia, Japan, Germany, Australia, China, America, France, the United Kingdom, Sweden and Canada according to the statistical data provided by the Forex Bonuses report (Nag, 2018). In terms of e-wallet use, however, China is the nation of rapid development that comprises 76% of Chinese mobile phone consumers, 36% of the American population compared (Groenfeldt, 2017). Moreover, the Indian market also has a strong e-wallet adoption rate.

The mobile wallet transaction grew tremendously over five years, From 24 billion Indonesian rupiah to 955 billion Indonesian rupiah between 2013 and 2017, and is anticipated to surpass 1 trillion Indonesian Rupiah by 2018, with government policies to boost promotion of E-payment, smartphone penetration and creation of telecommunications and payment facilities. Jayaseelan (2017), who said that electronic wallet solutions are well available and highly used in India and China, and but are very uncommon in Malaysia.

According to Lim, Ben Shane, and Appaduray (2017) in Malaysia cash payments continue to be the most important exchange medium, but this might well shift when cashless transactions are made available. MalayMail (2017) reported that Governor Tan Sri Muhammad Ibrahim said that cashless payments are a crucial part in the digital economy, and expanding digital economy in the payment system forum and exhibition, that would improve productivity and economy. In addition, Tan Sri Muhammad said high technology and less operating costs with the QR code, while a huge count of people in Malaysian is considered carrying debit cards also smartphones is an advantage to improve the cashless systems (MalayMail, 2017).

Take Action Pay (TaPay) pilot test for digital wallet service in Cyberjaya is to be conducted and is the first cashless town in Malaysia announced at the end of 2017 by the Secretary-General of the Treasury (Shah, 2018). Alipay, run by the company Ant Financial, while AirAsia Bhd introduced BigPay, and GrabPay by e-hailing services provider Grab, are some of the top e-wallets in Malaysia. It has been projected to launch Mpay by ManagePay Systems Bhd in the first half of 2018 (Shah, 2018).

In addition, Tencent Holdings had submitted the WeChat Pay license to operate in Malaysia where there were subscribers numbered around twenty million for WeChat operated by Tencent Holdings in Malaysia, and the launch will be following Alipay in June 2018 by partnering with Genting and CIMB Bank (Writer, 2017). Kwong Wah Yit Poh has confirmed that WeChat users have been able to notice that the apps include a wallet feature as of 5 June 2018 and that it's believed we could use WeChat Pay shortly (Yong & Aravinthan, 2018).

1.2 Problem Statement

According to " Cash or Cashless? Malaysia's Shifting Payment Landscape" (2019) in Malaysia, e-Wallet use seems to be at an early age. Although 67 percent are using the mode of cashless transactions (the main mode are debit cards, consist of 63% and online banking is 57 %), e-wallets only used by 8 percent of the population as payment forms. Security appears to be the biggest challenge. As shown in the survey, 46 % of people who never used e-wallet refers to security issues as their greatest obstacle to adopting e-wallets. Close to 59% think e-wallets may result in debit and credit card fraud concerning security issues, while 38% worried that the transaction would disappear. 36% of the respondents concern themselves with fraudulent websites that portray as to be from e-wallets. 39% are worried about the leakages of bank details.

In the meantime, 30% believe that mobile devices will be hacked. Many issues include ransomware and technical problems, and also concerns relating to infringements of privacy. Of course, improved safety features will increase adoption of e-wallet. Nielsen estimates that 62% will find biometric authentication as an increasing trust feature, while 56% wish to use One Time Passcodes (OTPs) that are used for debit and credit card transactions. Whereas, 38 percent want Two Factor Authentication to come as part in e-wallet authentication, while 27 percent want payment information to be processed locally in mobile and not on e-wallet service providers servers.

Besides that, the disadvantage of e-wallets such as not easy to use, not attractive and not interesting becoming an issue for e-wallet provider to attract more e-wallet users, this issue is major problem to highlight (Joan, 2007).

When smartphone users and mobile data networks grow rapidly, and mobile applications grow exponentially, mobile payments (m-payment) in every part of the

world have attracted more and more popularity. More and more people around the globe have tried to use a mobile wallet for day-to-day transactions as a cashless payment method. E-wallets are a payment method for purchasing services or products without cheque or cash via an electronic medium. Pinsent Mason's international law firm's senior partner Paul Haswell said: "China is a world-leading country in electronic payments with the aid of Alipay and WeChat" (Rolfe, 2018). The rise of electronic payment services, in many villages in China, individuals and companies are moving towards transaction without cash.

There are more economic problems with using cash as a potential disadvantage in travelling to and from an ATM or as a risk of losing or stolen wallet. The economy is becoming more and more cashless because of problems. The cash can hardly be traced if the money has been missing or looted (de Almeida, Fazendeiro, & Inácio, 2018). Carrying cash in hand will cap spending to the amount that was brought in hand. It may also be thick when a lot of cash brought, and heavy when change to coins as balance. The problem mentioned above or frustration of people using cash in the past contributes to the creation of non-cash e-wallet payment services.

Digitizing payment process through a range of e-payment options, for instances, debit and credit cards and the physical and e-payment system has been enabled by increased technology of the internet and introduction of electronic business. The popularity of smartphones and the internet among Chinese people, stimulated by the fast growth of information technology, is fairly high (Global, 2018). In May 2018, China had the highest smartphone users compared with other countries around the globe, based on recent information by Ministry of Industry and Information Technology of China, MIIT, whereby China has totaled about 1.32 billion smartphone owners.

However, from January to October 2017 China had recorded transaction of yuan 81 trillion whereby cities in China can be considered as cashless market based on Shen (2018), in which wide range of consumers is opting to a way which is even better than credit card towards the noncash system. Yuan 58.8 trillion as total have been transacted in China for a duration of 10 months in 2016, according to MIIT reported by Xinhua News agency.

For a broad range of transactions mobile payment is being used, such as for updates to mobile gaming, giving ‘Hongbao' electronically perceived to be red cash packets as gifts, buying cinema seats and online ordering food for takeaway. Credit card use and the cheque is reduced with Tencent holdings run WeChat Pay, and Alibaba Group Holding Partner Ant Financial Services online payment portal made up China's mobile home affiliate accounted for 93% of the country's most popular mobile payment applications. The near field communication function available in mobile phone and QR code was taken as advantage by both Alipay, and WeChat Pay contributed to making payment for buying products made on the point of sale (POS).

E-commerce and social networks rapid growth has changed the form in which people communicate. Incorporating e-payments in the platforms has created huge chances for increasing economic, opportunities to access financial services, transparent transactions, stability and development (Cash, 2017). Findings reveal that other countries can leverage huge opportunities to expand their digital payments system through established online business mediums also social media.

The McKinsey Global Institute 2016 report projected that finance thru digital in all emerging economies, in general, will contribute US$ 3.7 billion to GDP by 2025, about 6% rise over the expected basic line, fresh job creation of 95 million. China could increase its projected base GDP by a further 1.05 trillion USD equivalent to 7.25 billion

RMB in 2025, which is 4.2% higher than its projected GDP (Kapron & Meertens, 2017).

Moreover, in Malaysia, WeChat Pay is introduced and accessible in June 2018, exactly when Prime Minister Tun Mahathir has shown curiosity towards nation without cash (Thecoverage, 2018). Malaysian businesses are among the pioneer besides China, which has mobile payment platforms uses its own currency which is Malaysian ringgit. Tencent wanted to expand into the global market, during that crucial time. Fortunately, Malaysia granted access for them to operate. Two hundred and twenty million successful WeChat users are from Malaysia every month (Hollander, 2017). An emerging partnership with Hong Leong Bank is also underway to allow WeChat Pay dealers.

Even in November 2017, the Hong Leong Bank has permitted sellers to take payments from WeChat pay even before launching of their wallet in the country (Pikri, 2018). In the Malaysian market, WeChat Pay would certainly increase the tourism industry's output further, by drawing even more visitors from China. Since visitor from China would not need to exchange money anymore to Malaysian ringgit. This comfort will generate more income while providing Malaysia with a boost in the economy.

1.3 Research Objectives

1. To examine the relationship between Perceived Ease of Use and adoption of E-wallet among students in Universiti Utara Malaysia.
2. To examine the relationship between speed and adoption of E-wallet among students in Universiti Utara Malaysia.
3. To examine the relationship between security and adoption of E-wallet among students in Universiti Utara Malaysia.

4. To examine the relationship between social influence and adoption of E-wallet among students in Universiti Utara Malaysia.

1.4 Research Questions

1. Is there any significant relationship between Perceived Ease of Use and adoption of E-wallet among students in Universiti Utara Malaysia?
2. Is there any significant relationship between speed and adoption of E-wallet among students in Universiti Utara Malaysia?
3. Is there any significant relationship between security and adoption of E-wallet among students in Universiti Utara Malaysia?
4. Is there any significant relationship between social influence and adoption of E-wallet among students in Universiti Utara Malaysia?

1.5 Scope of Research

This study aims to determine the factors that influence the current adoption of e-wallet among students from Universiti Utara Malaysia. Students from universities were selected because they are the group that engages most in technology. In addition, University students will be lawmakers in the future.

This research seeks to address some of the issues related to weak e-wallet adoption. Thus, the study concentrates on factors affecting e-wallet adoption in conducting this research. This thesis reviewed the literature on the main variable of the Technology Acceptance Model (Perceived ease of use) thoroughly (Davis, 1989). This model has been chosen because existing authors have demonstrated the parsimonious, flexibility, robustness and supremacy of TAM over other models (Chang, 2010; Venkatesh & Bala, 2008). The research also included the Unified Theory of Acceptance & Use

(UTAUT) Model for other factors including security, speed and social influence. This study has considered the use of these four constructs in the e-wallet adoption as the theoretical and functional results suggest that these are the key problems faced by students of universities to adopt e-wallet. Additionally, the study was carried out in Universiti Utara Malaysia regardless of faculty. The selection of all faculty will help to increase the validity of the study as the result that is obtained will generalized all faculty students.

In addition, this study also assists developers of software and financial organizations to find out the problems e-wallet users may face. According to the results of this report, developers of software and financial organizations will consider the factors they have to investigate for them to start E-wallet successfully in this country. In addition, scholars or potential researcher whoever wanted to understand more e-wallet services will also benefit from this research. This research will help students understand what e-wallet is and how acceptance in Malaysia is driven by. Consequently, they will have a better knowledge of Malaysia's e-wallet business. E-wallet, which seems to have drawn growing public attention, would draw many potential researchers to perform studies on this issue. The objective of this study is to provide key knowledge about electronic wallet and elements influencing the adoption of e-wallets. Therefore, upcoming research studies could use these variables like a guideline in researches.

1.6 Significance of Research

Fast technological progress contributed to significant innovations in online technology. The demographic profile and coming generation attitudes, for example, young college students, encourage vendors to update approaches. Popular methods in marketing may not appeal for younger adults, for example, student. Stimulate development in an

environment in Malaysia risk at present reveals the prediction that the significant pace is expected to increase in the years to come.

The rise of e-payment is where vendors will do more to inspire or attract younger generations. As more young adults have devices, for example, laptops and handphones in everyday life, e-payment acceptance is also growing. In defining the development of future, e-payment may have a crucial contribution.

This research is important to understand how attitudes and behaviors of students influence their decision using e-payment. The outcome as motivating proof consider important factors in order to develop an effective strategy for promoting the use of e-payment for the young people of Malaysia through merchandisers or financial firms. In addition, findings also enabled financial firm, providers of online exchanges and development of software firms to understand Malaysia's recent wave of consumer problems and e-payment issues.

The high purchasing power of the younger generations in Malaysia is more important and relevant to this report. This will provide an awareness that impacts wider adoption and e-payment utilization as young people as potential clients, which means that e-payment will gradually be a preferred tool for economic enterprises in Malaysia as Blueprint 2011-2020 reported (Bank Negara Malaysia, 2016).

1.7 Definition of Key terms

E-Wallet: E-wallets are electronic wallet used for transaction via internet using a mobile or other electronic device. Value is comparable to bank card. Electronic wallet needs internet connection in order to make payments to the account of the individual.

Perceived Ease of Use: To the extent where someone feels it can boost his or her performance at work by using a specific program.

Speed: The pace at which one or something is running, or working, or moving or operating.

Security: Security means safety and measures taken to be secure or safeguarded.

Social Influence: How people transform their views to satisfy the requirements of a social situation.

1.8 Chapter Summary

Chapter one describes the introduction, discussion about the problem statement, research issues, the importance of the study, study scope and key terms definition.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter looks on the past research which are related to variables in this research which are speed, perceived ease of use, security and E-wallet adoption by Universiti Utara Malaysia students. The Impact within independent and dependent variable is also mentioned. This chapter further explains the relationship between the theory selected and the theory framework.

2.2 E-wallet Adoption

The theory of acceptance, according to Straub (2009), is designed to examine how each person makes a decision and chooses whether or not to adopt a new invention. However, as discussed at Sahin (2006), the Rogers theory review, adoption is the result of choosing the best available way to use a new invention. He said, however, that the rejection is the opposite of accepting an innovation.

Wang and Gu (2017) have been researching how people accept mobile wallets from WeChat Pay and how social theory impacts their acceptability through data collection from users of WeChat by incorporating the technology acceptance model (TAM).

In addition, Davis, Balaji, and Gurusamy (2017) studied factors impacting e-wallet use in Chennai City by gathering answers by respondents using questionnaires. The e-wallet users were also studied, and their perception discussed. In addition, another consumer acceptance study for e-wallet is available in the city of Chennai.

Manikandan and Jayakodi (2017) also investigated the aspect that impacts E-wallet use of primary data methods, besides defining the use of the mobile wallet in different

companies. The research on mobile wallet acceptance in Sabah in Malaysia was carried out by Amin (2009). In order to get data from major respondents are customers of Sabah banks, the survey questionnaire was used. In the same manner, the study seeks to analyze the e-wallet adoption factors by bank clients by extending the study's TAM theory and to better reflect the use of mobile wallets in Malaysia.

2.3 Perceived Ease of Use

Confidence for the use of a given system is without effort is perceived ease of use (Davis, Bagozzi, & Warshaw, 1989). Gefen (2000) proposed the ease of use being perceived as a cognitive effort measure for the use and development of newer information technologies. Convenience can be seen as the comfort and ease of the use. Besides having substantial benefits from portability and usability (Sharma & Gutiérrez, 2010). According to the Research of Junadi and Sfenrianto (2015), customer adoption for online payments was investigated. In addition to the two additional factors referred to as presumed security & culture, constructs have been established by extending the Unified Technological Adoption Theory (UTAUT), to figure out the most important factors impacting the acceptance of electronic payment technology. In order to predict their consumers' intention and consumers of IT, the model utilizes perceived ease of use (PEOU). UTAUT has four principles which have the significance of effort expectancy (EE), performance expectancy (PE), social influence (SI) and the requirements that promote the intent and use of technology.

Many research like Zhu, Luo, Wang, and Li (2011) and also Legris, Ingham, and Collerette (2003) had identified user-friendly methods or simpler to use system or device is useful. Moreover, the observations from Gao, Koufaris, and Ducoffe (2011) indicate that simple usage is graded as a subjective interpretation by consumers who

intend to know and have used the platform. Intention to buy is influenced by ease of use (Chiu, Chang, Cheng, & Fang, 2009; Thong, Hong, & Tam, 2006). For this cause, Guriting and Oly Ndubisi (2006) find in Malaysia there is a significantly positive correlation to Malaysians ' behavioral intent to make e-payment considered convenient in use.

Bezhovski (2016) analyzed the factors influencing the usage of the electronic payment by customers and addressed the possibility that the use of the electronic payment depends on different factors which influence consumers' expectations and readiness to adopt latest technology. Convenience is a major variable of the current model as the study has identified few variables that would have a positive or negative effect on the dependent variable. Convenience or ease of use are described in terms of the coherence of innovation and customer perceptions, beliefs and needs. The program's versatility is a key usability factor for customers, as it can be readily adjusted to the payment system and incorporated into the everyday life of customer.

Ainscough and Luckett (1996) states that, good relations are a key factor which enables consumers to engage consumer interactivity in e-payment delivery. Jun and Cai (2001) studies indicating the delivery duration of service is extended or the e-interaction time is slow contributing to consumer experience or feel unsure if the task is complete or not. Abrazhevich (2001) argued that an efficient systems architecture is important to attract e-payment users. Therefore, it has been told, complexity has an important relation to decision to accept e-payments.

2.4 Speed

As one thing that could influence the consumer's decision to adopt the e-wallet, speed was used. The purpose of this research was for investigate understanding of use for E-wallet following a demonetization (Davis et al., 2017). There had been independent development of the seven variables: privacy, security, ease, distance, usability, content and architecture. The aspect is the dimension of deliberation and architecture. However, there are no significant differences between other variables, including speed, before and after demonetization.

In Chen and Nath (2008) studies, explored elements affects use of e-payments in perspective of the United States customer, it considered to evaluate in a multi-phase method of variables affecting consumers ' desire to accept mobile payments. In the research to examine consumer behavior, demographic characteristics and technology or lifestyle features were also considered. Factors of convenience, speed, availability, data protection and security concerns were also included. Compatibility also had the strongest correlation with the approval of mobile payments. The findings however showed that the speed and convenience of the transaction was also significantly correlated with the intention to make mobile payments.

Tella and Olasina (2014) research used analysis method by using the real, quantitative way by performing questionnaire at different levels and determine the continued purpose of using the e-payment system through an acquisition of Technology Acceptance Theory (TAM). The researchers used salary credits in the account of the staff for a length of time and how quickly the customs were aware of the payment process completion as measuring instruments to answer purpose for the research. The

findings show that there is relation among the variables usefulness and behavior of using; enjoyment and continuity; complexity with usefulness, speed also actual usage.

The aim of the research on the basis of Pagani (2004) is to better understand the usage of mobile multimedia services in light to the introduction to mobile application services of the third generation. This work directed qualitative and quantitative exploratory phases for analysis. In this analysis, the efficiency, usability, rate and performance of use extracted within TAM were variables used. Most important factor from the results of the studies is perceived usefulness. Compared with performance, ease of use is less important. Meanwhile, the cost and speed for young people are less important. Analysis showed that people aged 18 to 24 years are more focused in usage speed, however, referring to determinant differences between the age group.

While the work of Pagani (2017) has been done towards E-payment, to study effects upon use of the E-payment system referring to demographic variables also demographic relation towards variables factors. To attempt to discover out the causes of regular use of e-payment, the findings were analyzed through the Multivariate Analysis. But the outcome for MANOVA has shown the age group and the variables have no significant impact.

Dewan and Chen (2005) was aimed at understanding the purpose of mobile payments using cell phone or contactless models between American customers. New technology adoption has shown that the most significant variables in TAM are useable and user-friendly. Transaction speed and comfort were checked in the context of the perceived problem of usability for the useful mobile payment. The safety and privacy issues were two other variables tested for this study. The findings, which interpret the frequency counts and the percentages, have shown that customers are largely positive for the ease

of use, value, comfort and speed of mobile payment. In addition, most people believe that mobile payment will increase the speed of transactions.

The research aims at assessing the links among consumer satisfaction and electronic payment and banking making tools (Roozbahani, Hojjati, & Azad, 2015). Speed, performance, protection and trust and transparency were the independent variables applied in this study to determine whether which variable has a stronger influence on customer satisfaction using tools for electronic payment. Outcome show that efficiency, speed and customer satisfaction are closely related to the payment tools. Additionally, the positive relationship between other variables used during this study and customer satisfaction with e-payment instruments.

2.4 Security

Security is described as a set of systems and processes, according to Junadi and Sfenrianto (2015), to validate pieces of knowledge and maintain confidentiality and protection to prevent data and network issues. Security is a mechanism how e-wallet services will safeguard customers during their purchases.

Security explores the possible feelings of insecurity by using a system (Cheng, Lam, & Yeung, 2006). Information security issues are characterized as buyer's impressions of the failure of a seller to secure money related information (Salisbury, Pearson, Pearson, & Miller, 2001). Digital security challenges have left consumers suspicious (George, 2002) it has also been regarded as a significant challenge to the adoption of e-commerce (Hoffman, Novak, & Peralta, 1999; Rose, Khoo, & Straub, 1999). Past research have found that the purpose of implementation of technology for the control of currency information is impeded by security considerations (Cheng et al., 2006; Salisbury et al., 2001).

Many other studies suggested that safety is a strong potential element for influencing the acceptance of electronic wallets (Batra & Kalra, 2016; Junadi & Sfenrianto, 2015; Kabir, Saidin, & Ahmi, 2017; Sardar, 2016; Taheam, Sharma, & Goswami, 2016).

The goal of Junadi and Sfenrianto (2015) was to examine the components affecting electronic payment system adopting in Indonesia and used an expanded Unified Theory Acceptance and Use Theory (UTAUT). The variables used for this research are safety, social influence, culture, expectation of effort and expected performance. This research showed security being a great aspect affect the decision of using electronic payment system, which implies that the attempt to utilize electronic payment system would improve if the protection of electronic payment is improved.

In addition to this, Kabir et al. (2017) studied the aspects affecting electronic payments acceptance. This article expands the journal article of earlier studies linked to electronic payment acceptance. 223 articles have been evaluated and just 77 have been observational articles. The analysis revealed different elements which have been regularly utilized in prior studies in terms of flexibility of using it, expenses, ease of access, confidence, utility, advantage, safety, behavior and consciousness.

In addition, the purpose of the paper in Batra and Kalra (2016) was to evaluate the user behaviors of the participants with electronic money. According to this paper, the main aspects for encouraging survey participants to use an electronic wallet are protected, savings in time, convenience of using it, special offers, monitoring of expenses and easily accessible. Researchers discovered that the participants ' biggest issue was indeed the security of fund transfer. This means that, if the electronic wallet system is safer and protected, more customer is inspired to use the electronic wallet.

Sardar (2016) also explored the desire for e-wallet acceptance in Jalgaon and its impact on the acceptance of e-wallet with demographic factors. This research also examined the elements affecting e-wallet acceptance, and security was among the elements. The results indicate here that security of buying things online seems to be a critical aspect for many people. Is advised that the security of e-wallet is worried by participants, the safety features should be improved because the customers no need to worry.

In addition, Taheam et al. (2016) identify the elements influencing E-wallet acceptance in Punjab's young people. The research underlined several elements that could inspire individuals for using e-wallet, including convenience and peer pressures, controls and protection, and a need to improve performance. One of the factors highlighted could manage and protection where the productivity of customers can be enhanced.

By contrast, Rathore (2016) examined the factors affecting consumer e-wallet adoption. Security in this analysis is also a variable. The research showed that the security of E-wallets is not a key factor that influence using of the platform but is a challenging factor for users. If security problems are resolved successfully, the threat decreases and e-wallet usage increases. Manikandan and Jayakodi (2017) have achieved the very same results. The aim of their study was to study consumer's perceptions of the e-wallet, factors impacting e-wallet consumers, and consumer's challenges when using e-wallet. The distinction between the two research was that Rathore (2016) collected primary and secondary data from smartphone owners that accept e-wallet payments for online payments but only data from participants in Chennai city are gathered by Manikandan and Jayakodi (2017).

2.5 Social Influence

Some of these researches has suggested that the social influence has significant influence on adoption of mobile payments, while some researches have shown no significance towards adoption. Based on Yang, Lu, Gupta, Cao, and Zhang (2012), the social influence during its early adoption was largely indirectly influencing. This research seeks to examine variables at the stage after and before the adoption of the e-payment service in China, in which the variables are social influences, behavioral conviction, individual characteristics and adoptions intention. Researchers suggested that social impact greatly implicitly affects interrelated gain and perceived risk when it starts adoption. This also demonstrated that social influence has an important direct effect on the future and existing consumers.

Furthermore Aydin (2016) has demonstrated that the use of mobile payment in their work has little social effects. The goal of the research was to identify factors impacting mobile payment systems for users and non-users. The report reveals that there is no major relation between groups because of lesser awareness and penetration of the electronic payment service. Finding reported that due to the small number of users of mobile payment services at the start of their life cycle, their lack of social influence had an impact towards the purpose to use. Besides that, some previous researches have demonstrated that the social influence effect of mobile wallet adoption is significant.

In order to analyze the factors impacting the adoption of customer in mobile wallets, Shin (2009) adopted UTAUT. Social influence, security, trust and self-efficacy are all considerations. Although social influence had less influence towards development of a positive intention toward attitude and perceived security, still it has had an impact on

intention by impacting perceived security. It was a significant step towards a mobile payment acceptance model.

In addition, another study aims to examine the mobile payment acceptance intentions and determinants. The considerations are compatibility, perceived technical durability, desire for performance, social influence and innovative in Europe. The research showed that entire variable investigation has had substantial direct and indirect effects on mobile payments services and on their intentions (Oliveira, Thomas, Baptista, & Campos, 2016).

Furthermore, the social influence has had an important effect for adopting e-payment (Slade, Williams, Dwivedi, & Piercy, 2015). The study examined the link between adoption of mobile payments for non-users in the UK and the use of Unified Technology Acceptance and Use Theory (UTAUT2) as risk constructs. The study showed a major effect on the use of Near Field Communications (NFC) technologies in perceived trust and risk, anticipation performance, social influence and custom.

The intention of the study is to analyze the factors influencing customer to adopt e-wallet (Nguyen, Cao, Dang, & Nguyen, 2016). The study's considerations are trust, social influence, satisfaction, efficiency, behavioral management and complexity. To assess the effect on these variables, the bivariate correlations and multiple regressions have been used.

This research found that personal beliefs, resources and social influence on mobile payment use were significantly associated. This research nevertheless has had encouraging results on the intention of customers to use mobile payment. The researchers tried to recognize central users, security, device features and the gender moderating affects that affect the actions of E-wallet users.

TAM has been applied with mobile payment services to estimate consumer intent. The outcome indicates a clear positive link to determinants using E-wallet. This research shows compatibility, information and social influence from the e-wallets perceived usefulness while predicting e-payment services complexity (Lwoga & Lwoga, 2017).

Researchers analyzed Junadi and Sfenrianto (2015) the desire of customers to use mobile payment in Indonesia. To establish the exact outcome of acceptance of mobile payment services influencing factors, researchers used Unified Technology Theory of Accepting and Using (UTAUT). Culture, security, efficiency, expectations and social influence were among the factors. Social influence indicates that users use E-payment services in positive intention.

Nonetheless, the previous study studied the desire of cell phone users in Brazil to accept mobile payment. Researchers determined the performance and expectation of effort, social influence and perceived cost and risk by using UTAUT to influence the adoption of mobile payments. The results showed that the forecasting action effect of social influence is positive (Abrahão, Moriguchi, & Andrade, 2016).

2.6 Technology Acceptance Model (TAM)

The TAM Model is developed and has been shown as one of the important theories used to assess the users acceptance and use of information (Davis et al., 1989). Initially from the TRA TAM was extracted (Fishbein & Ajzen, 1975). The constructs of TAM included the following: perceived utility (PU), perceived ease of use (PEOU), actual use and behavioral intent (BI). The TAM was designed to prevent users using the two principles PU and PEOU using information systems. The TAM model also included external variables to demonstrate that other variables might also be able to predict the actions of users with respect to the use of a given system by influencing PU and PEOU.

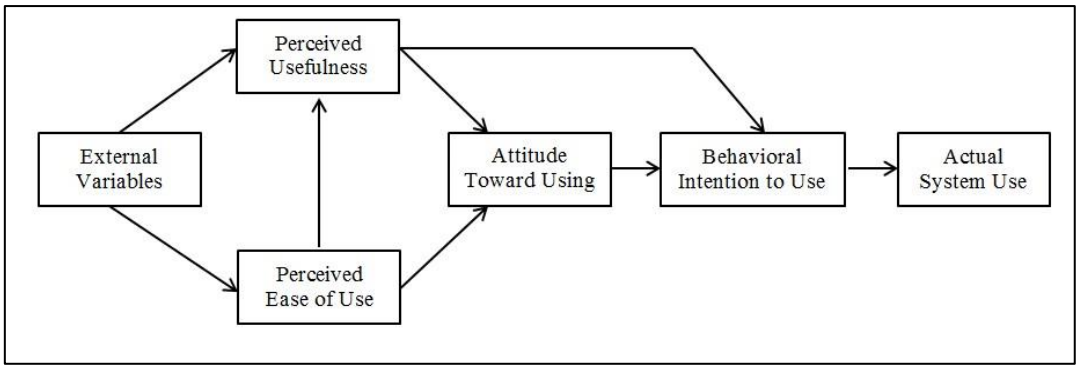

Figure 2.1
TAM Model

It was assumed that an individual assumes that the use of a specific method will have a greater benefit to him and increase the quality of the task (Davis et al., 1989). The perceived ease of use relates to the extent of convenience and ease of usability of a particular information by individuals (Davis et al., 1989). To provide most parsimonious model, such observed studies later using TAM discarded the attitude construction. The limitation of this model is that it only used the PU and PEOU constructions to describe the adoption behavior, and it did not take into account additional variables as predictors of the consumer expectations of the use of certain technologies (Davis et al., 1989; Yarbrough & Smith, 2007).

2.7 Unified Theory of Acceptance and Use of Technology (UTAUT)

Through combining and integrating eight previously important models, Venkatesh, Morris, Davis, and Davis (2003) built up the Unified Theory of Acceptance and Use of Technology (UTAUT) Model. The UTAUT model explained 70% and 50% respectively, which exceeded previous models, of the variances in technology acceptance and use. The model identified three mechanisms that have direct impact in the Behavioral Intent (BI), and two other constructs have a direct impact on the use of

technology (i.e. behavioral purpose and encouraging conditions). These relationships have been moderated in Figure 2.2 with gender, race.

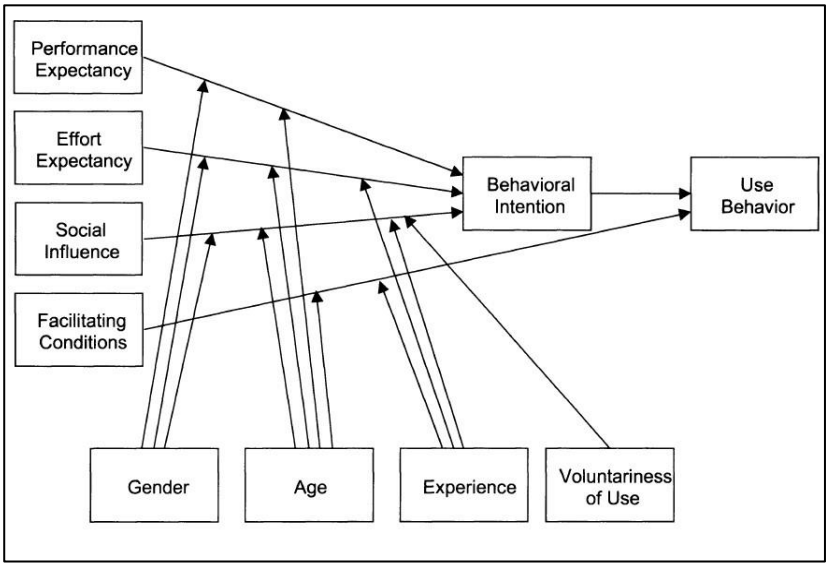

Figure 2.2
UTAUT Model

CHAPTER THREE

METHODOLOGY

3.1 Introduction

Chapter three addresses in depth the research context, the research design, the research hypothesis, the population, the functional framework and the data measuring tools. In the chapter, the methods and framework for this research are defined. The design for the analysis is subsequently made. Detailed information on the measures of the data collection that were conducted as this analysis employed a quantitative approach. The chapter also provides a description of the related method of information collection, sampling and analytical methods used for the quantitative part of the study. The section ends, finally, with a summary of the chapter content.

3.2 Research Framework

This research analyses the link between e-wallet adoption among students in Universiti Utara Malaysia to perceived ease of use, speed and security.

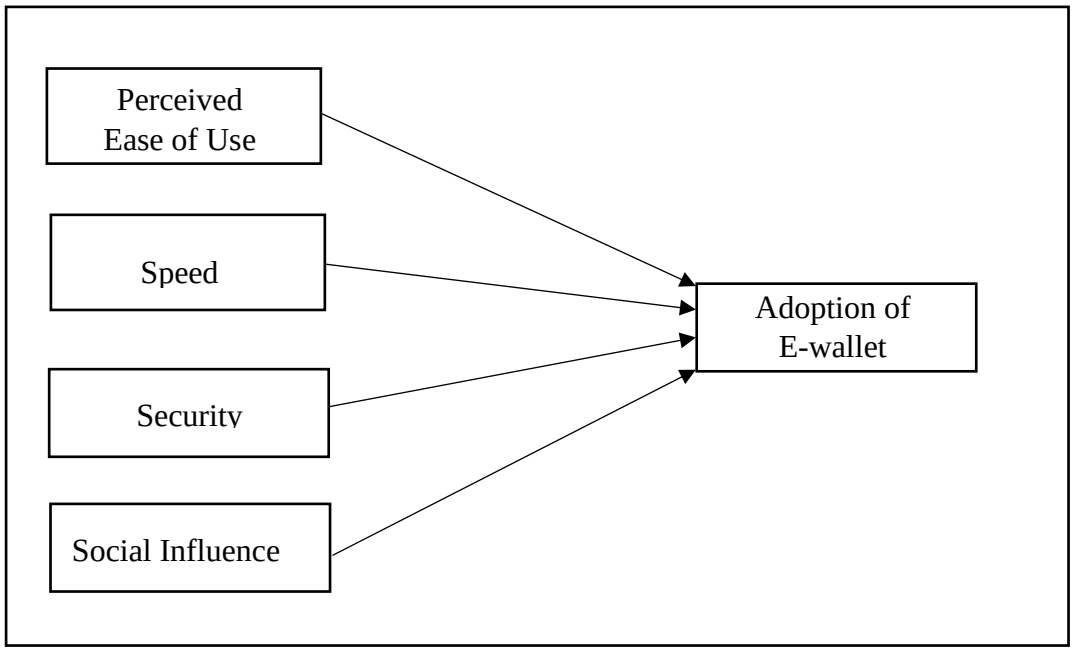

Figure 3.1
Research framework of adoption of E-wallet among students in Universiti Utara Malaysia

3.3 Research Hypotheses

Chapter two addressed the context for study and prior studies related to the correlation of these variables to look at the factors driving the use of e-wallets.

3.3.1 Perceived Ease of Use

Perceived ease of use is among the attributes of TAM whereby defines how easily certain systems can be run and how less mental and physical effort is needed by customers (Davis, 1989). In Davis(1989) terms, the perceived ease of use "is the degree to which a person feels that it should be easy to use a certain system." It is not immediately used, particularly whenever a system is considered to have been difficult to understand (Davis, 1989). Multiple scholars have researched and discussed diverse perspectives with perceived ease of use in multiple ways (Abrazhevich, 2001;

Ainscough & Luckett, 1996; Chiu et al., 2009; Davis, 1989; Gao et al., 2011; Gefen, 2000; Guriting & Oly Ndubisi, 2006; Jun & Cai, 2001; Legris et al., 2003; Thong et al., 2006; Zhu et al., 2011). Venkatesh et al. (2003), for example, objectively analysed the use of the system in the information system and provided two contexts of easy-to-use understanding, respectively anchors and adaptations.

Perceived ease of use, according to Daviset al. (1989), plays an important role with regard to e-wallet adoption between respondents and explicitly emphasizes that simplicity in use would lead in the future to a great improvement in e-wallet adoption. Taken together the above studies, therefore the following hypothesis was formulated:

H1: E-wallet adoption and perceived ease of use has significant relationship.

3.3.2 Speed

Research conducted by Chen and Nath (2008) claimed that a higher rate of transaction will lead to better digital payments for respondents. Speed is an important component in the performance measurement. It is hypothesized that high transaction speed would provide customers with advantages and facilitate further e-payment (Junadi & Sfenrianto, 2015). It also found by Tella and Olasina (2014) that there is correlation between speed and consumer's plan to continue to use the digital payment network.

Previous study has shown that many parameters, such as perceived speed, delay tolerance and abort frequency of the connections, are variables of consumer perception of quality (Chen & Nath, 2008; Junadi & Sfenrianto, 2015; Tella & Olasina, 2014). Chen and Nath (2008) thought that a connection exists between recall, speed, and precision (or response time). Speed was defined as a mixed path element for information system determination. According to the sources, the speed can also be used

as an indicator. Taken together the above studies, therefore the following hypothesis was formulated:

H2: E-wallet adoption and speed has significant relationship.

3.3.3 Security

Past research has shown that security of e-wallet is a factor for e-wallet use by consumers. Batra and Kalra (2016) mentioned security in the e-wallet adoption is a crucial key thing, which means that the desire to use an e-wallet will also increase as security is improved. Security refers to the perception which e-wallet users hold with respect to the vulnerability of their transaction details. The importance of security in -wallet transaction has been mentioned by various studies and it is often regarded as the degree in which transaction that is carried out online is protected from intruders or unauthorized persons. The arrangements have been agreed by these papers (Chiu et al., 2009; Junadi & Sfenrianto, 2015; Kabir et al., 2017; Taheam et al., 2016).

Based on Batra and Kalra (2016), the security of the funds transfer was an issue for the interviewees. The fear of insufficient protection was deemed a significant obstacle to the implementation of e-wallet as fraud began to threaten and make consumers feel negative. Sardar (2016) stated that most respondents believe that when buying things online, security is a key consideration. This suggests that security is an important component in driving e-wallet adoption. Taken together the above studies, therefore the following hypothesis was formulated:

H3: E-wallet adoption and security has significant relationship

3.3.4 Social Influence

Oliveira et al. (2016) suggested that the social influence would influence E-payment adoption directly or indirectly. Social influence is to the degree that users consider others (e.g. families and friends) that they must adopt a specific technology. Also, the study Yang et al. (2012) showed a strong indirect influence on social influence when E-payments began to be adopted by a positively influencing on relative advantage and negative impacts on the perceived risk. They find that social influence is an important component of direct effects for future users and existing users. It represents the influence of external influences such as opinions on actions by friends, relatives and subordinates of a customer (Venkatesh et al. in 2003), whether they are optimistic, mobile payment systems may be promoted. The attitude and intention of using new technology are affected by the social influence (Taheam et al., 2016). Taken together the above studies, therefore the following hypothesis was formulated:

H4: E-wallet adoption and social influence has significant relationship

3.4 Research Design

The design of research can be divided into two qualitative and quantitative approaches. The research utilised a quantitative approach because the relationship between variables can be tested more precisely and is more suitable for the hypothesis test. The data are collected at a single stage and are called cross-sectional research design. There are four variables in this analysis. The study aims to analyse specific variables that influence the adoption of e-wallets that are perceived ease of use and speed, security and social influence by university students. In this study a sample questionnaire is used to gather information about the above variables. This way, the data can be easily and quickly

collected. The data can also be statistically analysed by descriptive statistics with frequency diffusion, including correlation analysis and inferential statistics.

3.5 Research Population

The target population is a group of individuals targeted for a research for a valid interpretation. This study is aimed at examining how university students embrace e-wallets. Therefore, students from Universiti Utara Malaysia have been selected to reduce the scope of this research. There have been two primary reasons why we are approaching university students in this study. The first is that the young consumers ' mindset about internet activities and online shopping would be better compared to aged consumers based on studies (Farag, Schwanen, Dijst, & Faber, 2007).

Youngsters are more educated about the technology and the internet that wouldn't be quick to get unhappy when they face problems while using e-wallet. Second, students from universities are major users of mobile devices one of the electronic gadgets available on the market (Burns & Bush, 2005). Students rely heavily on these technology devices for their day-to-day activities. The population of Malaysia may be reflected at a certain stage by university students in favour from the above reasons. According to Universiti Utara Malaysia (2019) as of 25th August 2019, about 28,866 students studied at UUM altogether. Of the total UUM students, 23,907 are undergraduate, while 4,959 study at postgraduate level.

3.6 Quantitative Sampling

To order to generalize the study's findings, the researcher must decide on the correct population before circulating the study questionnaire which has been established based on the findings of the qualitative preliminary study and examination of the previously

published work (Sekaran & Bougie, 2016). People can be identified as the group of persons or objects with common characteristics to be examined in the analysis (Lunsford & Lunsford, 1995; Sekaran & Bougie, 2016). Each member of the population is considered a part of the population and the studied population is represented by the set of all elements (Sekaran & Bougie, 2016). A population frame is also used to describe the population perimeter or frontier line, which contains some elements and excludes other elements (i.e. only elements reflecting the population) based on a pre-established criterion or condition (Sekaran & Bougie, 2016).

Population elements normally share similar features or characteristics according to certain parameters defined by the researcher or the concept of problems that the analysis investigates or concentrates on. The research includes students in Universiti Utara Malaysia. They are selected because they are the future and current users of the E-wallet systems, the subject of this report. On the other hand, the sample is defined as a subset of the population of origin which can be used as the representative of the population of origin in the study (Lunsford & Lunsford, 1995; Sekaran & Bougie, 2016). A majority of the original population consists of the test participants and these members are selected using a particular process called the Sampling Technique (Sekaran & Bougie, 2016). The analysis of the sample participants or subjects helps the researcher to draw conclusions on the question or the topic being examined and generalize the findings to the target population. Various reasons why the study is being performed on a sample of subjects rather than on the entire population element such as large populations that make it very difficult to reach every element in the population, time and cost constraints, lack of human resources necessary for the survey of large populations and the diffusion of population elements over a wetland.

Sampling is characterized as the process by which appropriate sample numbers or components of the original population of the study are selected (Lunsford & Lunsford, 1995; Sekaran & Bougie, 2016). In the sense that the test characteristics are as closely as possible compared to the original population to make the results of the study generalized the sample should be a correct representation of the original population. The determination of the right measurements of the specimen is, however, another important matter to consider in order to achieve generalization (Lunsford & Lunsford, 1995; Sekaran & Bougie, 2016).

The appropriate sample size for this study for this study was 370 participants, given that the size of the population was around 28,0915 members, based on the tables provided for by Sekaran and Bougie in 2010. Two types of test can typically be divided: possibility and unlikely (Creswell, 2012; Sekaran & Bougie, 2016). For sampling chance all elements in the population have a known chance of being picked as a member of the sample, whereas the elements do not have a known opportunity to be picked as part of the sample in the non-probability sample (Creswell, 2012; Sekaran & Bougie, 2016).

If generalization is one of the objectives of the study, tests of probabilities should be used. However, there are a number of techniques called probability sampling such as simple random sampling, systematic sampling, proportionate random stratified sampling, over proportional random stratified sampling, cluster sampling, zone sampling and double sampling (Creswell, 2012; Sekaran & Bougie, 2016). Sampling without probability also includes various techniques including convenience sampling, selective sampling, sampling decision and quotas (Creswell, 2012; Sekaran & Bougie,

2016). The choice of a given approach depends on the study's goals, duration and cost limits.

The current study used systematic format of samples to determine the members of the sample (Rojon & Saunders, 2012; Sekaran & Bougie, 2016). Systematic sampling of each Nth member of the population is conducted with a random selected number range from one to N being used (Rojon & Saunders, 2012; Sekaran & Bougie, 2016) at the starting point. Nonetheless, the questionnaire must be verified and correct before its practical use before the actual data is collected. These topics are described in the following section.

For most researchers , the study with sample sizes of over 30 and less than 500 is acceptable (Roscoe, 1975). Version 3 of G*Power has been used to achieve appropriate sample size. A priori power analysis was used by G*Power to determine the appropriate sample size on the basis of certain statistics (Faul, Erdfelder, Lang, & Buchner, 2007). According to G*Power sample size of 129 is sufficient at the statistical strength of 0.95 using four predictors, a medium effect size convention of 0.15 and a significant value of 5%, whereas 181 sample were able to be collected for this research.

3.7 Instrument Development

The instrument represents the questionnaire items that were used to measure each construct within the study's model (Sekaran & Bougie, 2016).The questionnaire's items were adapted from previously published studies in order to fit the healthcare context of the current study. Table 3.1 presents each construct included within the study's proposed model along with its items and the resource they were derived from. The Likert Scale five-point ranges from one that is (I strongly disagree) to five that is

to (I strongly agree) with all questions to measure the answer to the respondents' questions.

Table 3.1
The Constructs and their Items

Construct	Items	Source
Adoption of E-wallet	1. E-wallet can substitute the cash-based payment method. 2. E-wallet can support the existing payment method 3. E-wallet usage is beneficial 4. E-wallet usage is wise 5. Using E-wallet is interesting	(Manikandan & Jayakodi, 2017) (Ajzen, 1991) (Schierz, Schilke, & Wirtz, 2010)
Perceived Ease of Use	1. I do not get frustrated when use e-payment. 2. E-payment is easy to learn and use. 3. I feel flexible in performing e-payment. 4. E-payment provides various payment channels that ease my online shopping process. 5. Less effort is needed when I perform e-payment.	(Oly Ndubisi, Har Lee, Cyril Eze, & Oly Ndubisi, 2011)
Speed	1. I believe that using E-wallet will improve the speed of transaction 2. Transactions are faster than traditional methods of payment 3. It saves my time with e-wallet payments 4. E-wallet can provide rapid response 5. No time / delay waiting	(Chen & Nath, 2008) (Davis et al., 2017)
Security	1. Satisfied with the security system. 2. E-wallets keep customers information private and confidential. 3. Customers' financial information are protected. 4. Wallets ensure protection against risk of fraud and financial loss. 5. It keeps my payment credentials secure	(Davis et al., 2017) (Taheam et al., 2016)

Table 3.1 (Continued)

Construct	Items	Source
Social Influence	1. People who influence my behavior think that I should use mobile payment. 2. My friends think that I should use mobile payment. 3. Using mobile payment is considered a status symbol among my friends. 4. People who matters to me want me to utilize mobile payment services. 5. People who matters to most probably will suggest utilizing mobile payment services	(Lu, Yu, Liu, & Yao, 2003) (Koenig-Lewis, Marquet, Palmer, & Zhao, 2015)

Moreover, the questionnaire was designed in three sections; the first section included the study's title, a brief introduction describing the main purpose of the study and its importance. Also, in this section, the researcher assured the confidentiality and the anonymity of the participants. The second segment was dedicated to gather demographic details from the participants. The third section of the questionnaire included 25 questions (i.e. Items) that represented the study's constructs; those items were intended to record the student's opinions about the factors that influence their usage and adoption behaviour of E-wallet. For all questionnaire items, a Likert scale of five was used. The questionnaire is included in a sample copy in Appendix B.

3.8 Data Collection

Since this analysis depends heavily on the questionnaires used to gather data, it is important for the effectiveness of this research to draw up a reasonable and well organized process. Consequently, the investigator used a systematic random distribution strategy to administer the questionnaire for the study to collect the appropriate answers. To order to ensure seamless return of the questionnaires, the

researcher pursued the entire organizational framework. The primary data from the questionnaires given to the respondents in Universiti Utara Malaysia was collected directly in the present research. The collection of information was carried out in several phases in this report. First, Universiti Utara Malaysia (UUM) approved the researcher. With the authorisation to conduct the survey in UUM, data collection was initiated. The researcher described the motive of the survey and ensured that the data collection process was ethically conducted. The surveys were then distributed to the students.

During this analysis, the questionnaires were directed to each individual respondent and the intent of the survey was briefed. The respondents were told that the data they received was for the purpose of the study only and that it would always remain confidential. The respondent was asked not to add their name in the questionnaire. The survey was done by respondents for two weeks. The author called after two weeks to alert the respondents about the questionnaires. The researchers obtained it from the respondents after the questionnaires were completed.

3.9 Data Analysis Technique

The results where quantified using the smart PLS software for this study. The data have been evaluated by using smart PLS to handle the raw data and test the research hypothesis. The reliability test was conducted to concentrate on the performance in descriptive statistics, frequency distribution and analysis of the correlation. Frequency analysis was used to describe about the respondents‟ data. Frequency data were used to identify gender, age, marital status, level of education, work position and tenure year demographic detail. Based on Sekaran and Bougie (2016), Cronbach’s Alpha is a reliability coefficient that indicates how well the items in a set are positively correlated to one another. Cronbach's Alpha was used in this analysis to assess the coherence of

the answers received by the respondents. Cronbach's Alpha also describes the correlation between variables. The nearer the Cronbach's Alpha towards one, greater the reliability consistency.

3.10 Summary

The chapter explained in detail the process and the study. This clarified the framework of the study, the logic behind the research design and the methodology. It also addressed the way the study's analytical sections were carried out for the instrument planning, data collection and final analysis procedures.

CHAPTER FOUR

DATA ANALYSIS

4.1 Introduction

Data analysis will be performed based on the collected questionnaire. The students from University of Utara Malaysia received 181 questionnaires. Analyzes were carried out and evaluated to describe the demographic profile of respondents. In this study, SmartPLS three was used to classify factors which affect the e-wallet adoption of the target group.

4.2 Description of the Sample of Study

The descriptive analysis reveals the characteristics of the respondents and the general reactions of the respondents. It is a way of summarizing data gathered from the survey. In this study, there are several questions formulated, including the respondent's demographic profile. The questions on the questionnaire are linked to the e-wallet. All respondents are asked to complete the first section of the questionnaires prior to the process. In this research, questionnaires were distributed in UUM Sintok and Kuala Lumpur.

Table 4.1
Profile of Respondent

Demographic Variables	**Category**	**Frequency**	**Percentage %**
Gender	Male	80	44.2
	Female	101	55.8
Age	Below 18 years old	13	7.2
	19 - 21 years old	81	44.8
	22 – 24 years old	82	45.3
	Above 24 years old	5	2.8

Table 4.1 (Continued)

Demographic Variables	Category	Frequency	Percentage %
State	Wilayah Persekutuan KL	17	9.4
	Sabah	3	1.7
	Selangor	62	34.3
	Sarawak	1	0.6
	Perak	32	17.7
	Johor	12	6.6
	Kelantan	2	1.1
	Terengganu	2	1.1
	Perlis	0	0
	Pulau Pinang	25	13.8
	Pahang	3	1.7
	Melaka	3	1.7
	Kedah	7	3.9
	Negeri Sembilan	12	6.6
Degree Group	Business	135	74.6
	Non-Business	46	25.4
Education Level	Undergraduate	155	85.6
	Postgraduate	26	14.4
Are you Studying in UUM KL	Yes	89	50.8
	No	92	49.2

This process of collecting research data shows the various gender views on e-payment, 181 questionnaires were distributed in total. Both genders participated in data collecting process. 181 people surveyed; participants are classified accordingly into different age groups. The table reveal percentage and frequency for age of respondents. As 22-24 years comprise of a higher percentage of 82 participants (45.3%) in terms of aggregates. The survey showed the second highest percentage of 19 - 21-year-olds, with a total of 81 respondents (44.8%). Only, thirteen respondents are under the age of 18 (7.2%). The lowest percentage of respondents above the age of 24 years consisting of only five people (2.8%).

The table shows percentage and frequency of gender of respondents. Students from the UUM are target audience. 181 participants were taken to the study as a significance. Out of many questionnaires distributed 181 respondents successfully submitted to the survey. As the result shows, the number of people surveyed is not equal for men and women. There are 80 male and 101 female respondents. This research has taken 181 respondents as a consideration. As the results show, the number of the respondents for men and women is not equivalent. There are 80 men and 101 women who have been respondent.

Table show the results for the state of respondents. Besides that, 62 participants (34.3%) represent most respondents in the research from Selangor. With maximum 33 and 25 survey respondents, Perak and Pulau Pinang are the second and third highest levels (17.7%, 13.8%). After that, Kuala Lumpur is 17 (9.4%) from Wilayah Persekutuan. In comparison, there are three (1.7%) equally from Sabah, Pahang and Melaka respondents. One of the questions are whether or not the respondents are pursuing business program or non-business program. Data collected 75.6% students are from non-business program while 25.4% are from business program. From 181 respondents 50.8% are from UUM KL while 49.2% from UUM Sintok.

4.3 Measurement Model

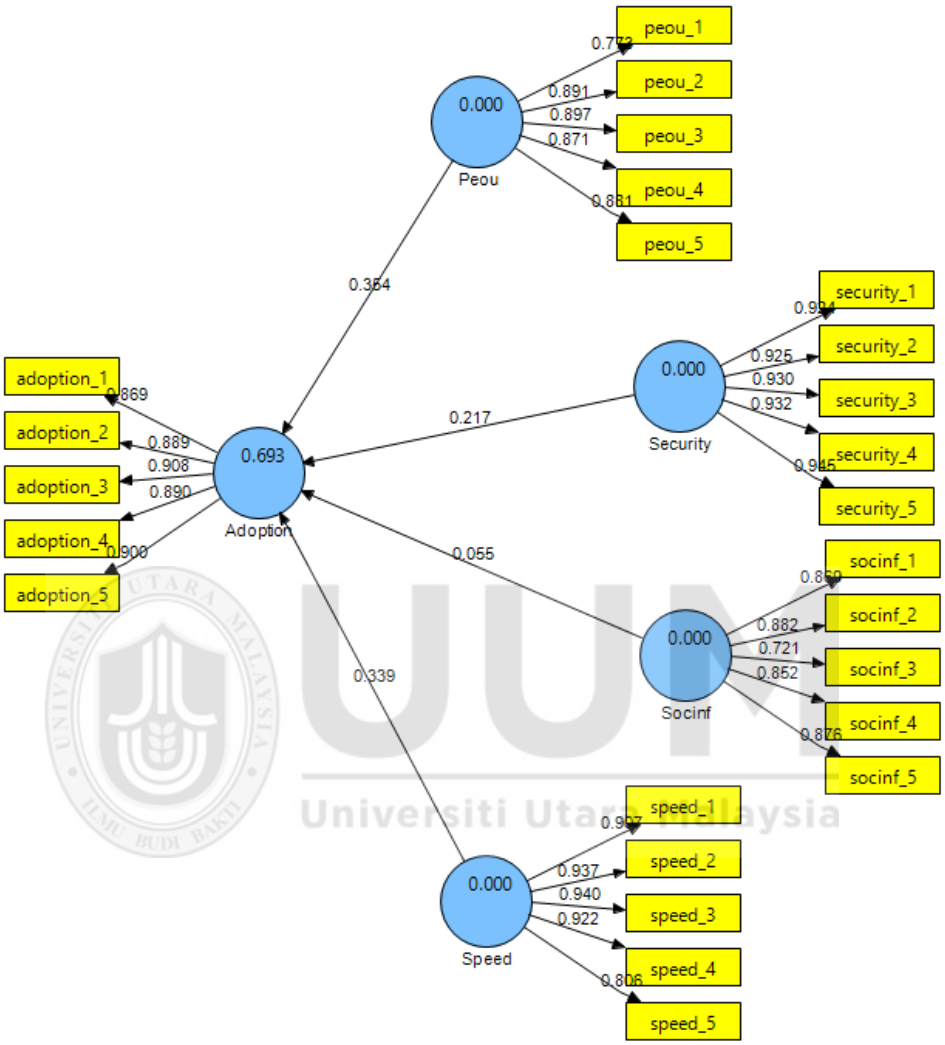

Figure 4.1
Measurement Model

4.3.1 Assessment of Reflective Measurement Model

The reliability of each item calculated by checking the object loading for its latent composition. The greater the loads, the greater the variance between the construct and the measurement rather than the error difference, the smaller the power of the explanation of models. For a reflectional measurement model, the measure is closely connected and exchangeable and its trustworthiness and validity should be thoroughly reviewed. So, the reliability and the validity are tested by researcher to build the measuring model. In order to measure the reliability and the convergent and the discriminant validity, the validity of the measures model has been measured by means of composite reliability. Therefore, the PLS - SEM tests for the reflective model are evaluated (Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, 2014).

4.3.2 Composite Reliability

The Cronbach's Alpha calculates the reliability of the system by analyzing the interrelation. The PLS - SEM method, by using composite reliability, measures the construct based on individual reliability.

Different types of reliability tests such as Average Variance Extracted (AVE), Composite Reliability and Cronbach’s Alpha were carried out to assess how accurate any component in the research model. The results of the study of reliability results showed that, in Cronbach's alpha, composite-reliability and average variance extracted (AVE) measures, the independent variable, Security has shown that among the other variable the highest value was 0.966, 0.970, and 0.867. It demonstrates the security has been the most reliable variable in this research model compared with others. Followed by the acceptance indicator with a meaning just somewhat lower than that of the

security value 0.794 in Average Variance Extracted, 0.935 in Alpha Cronbach and 0.951 of Composite Reliability.

On the opposite, in all tests conducted only with 0.900, 0.923, and 0.709, the social influences have a lower test score, which is even lower than perceived ease of use, with the findings of 0.915, 0.936 and 0.746. Due to the results of the Alpha of Cronbach all the values were above 0.9, far more than benchmark. Such variables can be described as good confident and meet the requirement of Cronbach Alpha. Both measurements were above 0.9, which meets acceptable criteria for composite reliability. The value of AVE is greater than 0.5 for the corresponding AVE, which implies that the variables meeting the convergent validity criterion in this study.

The security value of Cronbach's Alpha was 0.962, which among other variables is the greatest value. It means that the security variable opposed to others is most reliable. Furthermore, the speed variable's value of Cronbach's alpha is 0.943, followed by the social influence and adoption of E-wallet which show the Cronbach's Alpha value for each variable is 0.900 and 0.935 respectively. Thus, these all variables have the same level of reliability which is under the excellent reliability level.

The tests of the Cronbach's Alpha reveal that all values were 0.9 or above. These variables are defined as having a good reliability as well as fulfilling the criteria of the Alpha of Cronbach.

The value for security of the composite reliability is 0.970 which showed the highest value among all factors. This suggested the efficiency of the security is strong. After that the' Speed' which shows the value 0.956 and the adoption which has value of 0.950 for the composite reliability. The values of all variables surpass the reliability value of 0.9, providing satisfactory results. All values above 0.9 which meet the satisfactory

standard were taken upon on composite reliability test. This result showed the appropriate internal consistencies of these variables and are measurable.

4.3.3 Convergent Validity

The convergent validity of similar construct can be defined as a positive correlation to other measures. The researcher must consider both outer loading and average variance extracted (AVE). The AVE value for the social influence of the system showed the lowest value among all variables that is 0.709. Whereas for the AVE, security has the highest value of 0.867, followed by the speed showing the AVE value of 0.816 and the value for adoption is 0.794, respectively. For the perceived ease of use of the construct which was calculated to be 0.746 is higher than the social influence. Based on the result from table 4.7, all of the AVE 's value is greater than 0.7, which ranged from 0.708 to 0.867. Such results indicated that AVE values had reached the convergent validity norm in this analysis. This value should then be inferred as the convergent validity is sufficient.

4.3.4 Assessment of Construct

Table 4.2
Results Summary for Reliability and Validity of the Constructs First

Construct	Item	Loadings	AVE	CR	Cronbach's Alpha
Adoption of E-Wallet	ADOPTION_1	0.869	0.794	0.951	0.935
	ADOPTION_2	0.889			
	ADOPTION_3	0.908			
	ADOPTION_4	0.89			
	ADOPTION_5	0.9			
Perceived Ease of Use	PEOU_1	0.773	0.746	0.936	0.915
	PEOU_2	0.891			
	PEOU_3	0.897			
	PEOU_4	0.871			
	PEOU_5	0.881			

Table 4.3 (Continued)

Construct	Item	Loadings	AVE	CR	Cronbach's Alpha
Security	SECURITY_1	0.924	0.867	0.97	0.962
	SECURITY_2	0.925			
	SECURITY_3	0.93			
	SECURITY_4	0.932			
	SECURITY_5	0.945			
Social Influence	SOCINF_1	0.869	0.709	0.924	0.901
	SOCINF_2	0.882			
	SOCINF_3	0.721			
	SOCINF_4	0.852			
	SOCINF_5	0.876			
Speed	SPEED_1	0.907	0.816	0.957	0.943
	SPEED_2	0.937			
	SPEED_3	0.94			
	SPEED_4	0.922			
	SPEED_5	0.806			

Note: AVE (Average Variance Extracted) = (summation of the square of the factor loadings)/ {(summation of the square of the factor loadings) + (summation of the error variances)}; Composite Reliability (CR) = (square of the summation of the factor loadings)/{(summation of the square of the factor loadings) + (summation of the square of the error variances)}.

4.3.5 Discriminant Validity

In Fornell–Larcker test to prove discrimination the square root AVE values must be greater than other latent variables. Based on the result in table 4.4 the AVE square root value is higher than the other latent variables ' value, which is the top number value. The result is 0.891, 0.864, 0.931, 0.842, 0.904 respectively. There is, therefore, sufficient discriminatory validity in the data considered in this study.

Compared to other approaches, HTMT has more sensitivity and specificity in resolving Fornell - Larcker shortcomings. When the HTMT value reaches 0.85 and above(Kline, 2011) it will be a problem for the discriminating validity. However, the discriminant validity can be established according to Gold, Malhotra, and Segars (2001) if HTMT is below 0.90.

Based on the below results, the HTMT ratio is below 1.0, meaning that the model is perfect. In addition, the value shown in Table 4.5 exceeded the HTMT value threshold, all of which were below 0.85.

AVE square root value for this test must be more to illustrate that discriminant validity occurs over certain latent variables. The square-root the value of AVE that is the top-number value must be greater than that of the other variables latent. The research data can be used therefore be deemed to be sufficiently discriminatory.

While the HTMT-heterotrait ratio is less than 1.0 of earlier segment results, this model is perfect, because the value exceeds the HTMT threshold by less than 0.85. However, the test result exception with comfort variable, which was 0.898. The discriminant validity problem arises if the HTMT values are higher than 0.85 (Kline, 2011).The discriminant validity can be determined according to Gold et al. (2001), if the HTMT value is lower than 0.90.

4.3.7.1 Fornell-Larcker Criterion

Table 4.3
Fornell-Larcker Criterion

	Adoption	Peou	Security	Socinf	Speed
Adoption	0.891				
Peou	0.78	0.864			
Security	0.668	0.736	0.931		
Socinf	0.516	0.532	0.522	0.842	
Speed	0.717	0.701	0.478	0.469	0.904

Note: Diagonals (in bold) represent the square root of AVE while the other entries (off-diagonal) represent the correlation.
PEOU – Perceived Ease of Use; SOCINF – Social Influence

4.3.7.2 Heterotrait-Monotrait Ratio (HTMT)

Table 4.4
Heterotrait-Monotrait Ratio (HTMT)

	Adoption	Peou	Security	Socinf	Speed
Adoption					
Peou	0.832				
Security	0.704	0.783			
Socinf	0.524	0.552	0.542		
Speed	0.762	0.748	0.504	0.48	

Note: Heterotrait-Monotrait ratio (HTMT should not contain 1 in its range) is assessed by means of bootstrapping in the final data collected.
PEOU – Perceived Ease of Use; SOCINF – Social Influence

4.4 Assessment of Structural Model

Following the removal of these econometric problems in this data collection, the results are done bootstrapping. With the t-value method and 1.96 is value of significant. Based on the results, the t - value of perceived ease of use (3.475), security (2.262) and speed (4.304) is significantly higher than the significant value of 1.96 in each of the independent variables in this study, with significant influence on the acceptance of the E-wallet (Acceptance) among those surveyed. Nevertheless, the social influence t-value (0.727) is smaller than 1.96 so there is no significant link between adoption and social influence. Every independent variable value has been found to have a positive relation to the dependent variable when examining the path coefficient. Example, the perceived ease of use has a bigger impact on the adoption that increases in a single unit of the perceived ease of use may result the adoption to rise 0.417 Unit focused on results of analysis. The impact is lower in Social Influence (0.334), Security (0.188) and followed by Speed (0.043) to affect e-wallet adoption.

4.4.1 Direct Relationship

Hypothesis 1: E-wallet adoption and perceived ease of use has significant relationship

Table 4.5
Summary of Results for Direct Effect for Perceived Ease of Use towards Adoption of E-Wallet

	Relationship	Beta	SE	T Statistics	P-Value	Decision
H1	Perceived Ease of Use -> E-Wallet Adoption	0.417	0.120	3.475	0.001	supported

Note: $p < 0.05$, ($t = 1.96$)

Hypothesis one, statistically significant relationship found between perceived ease of use and the adoption of e-wallet ($\beta = 0.417$, $t=3.475$ and $p < 0.05$). These means that hypothesis one is supported.

Hypothesis 2: E-wallet adoption and speed has significant relationship

Table 4.6
Summary of Results for Direct Effect for Speed towards Adoption of E-Wallet

	Relationship	Beta	SE	T Statistics	P-Value	Decision
H2	Speed -> E-Wallet Adoption	0.334	0.078	4.304	0	**supported**

Note: $p < 0.05$, ($t = 1.96$)

The table shows that $\beta = 0.334$, $t = 4.304$ and $p < 0.05$. Thus, it shows that hypothesis two, speed is positively related to adoption of e-wallet is supported.

Hypothesis 3: E-wallet adoption and security has significant relationship

Table 4.7
Summary of Results for Direct Effect for Security towards Adoption of E-Wallet

	Relationship	Beta	SE	T Statistics	P-Value	Decision
H3	Security -> E-Wallet adoption	0.188	0.083	2.262	0.025	supported

Note: $p < 0.05$, ($t = 1.96$)

The table shows that the relationship between security and adoption of e-wallet is statistically significant. The β shows at 0.188, t = 2.262 and p < 0.05. Therefore, hypothesis three is supported.

Hypothesis 4: E-wallet adoption and social influence has significant relationship

Table 4.8
Summary of Results for Direct Effect for Social Influence towards Adoption of E-Wallet

	Relationship	Beta	SE	T Statistics	P-Value	Decision
H4	Social Influence -> E-Wallet Adoption	0.043	0.059	0.727	0.468	Not supported

Note: p < 0.05, (t = 1.96)

As shown in the table, β shown 0.043, t = 0.727 and p > 0.05. These show that the relationship between social influence and e-wallet is insignificant. Thus, hypothesis 4 is not supported.

4.4.1.1 Summary of Result for Direct Relationship

Table 4.9
List Summary of Direct Relationship

Hypothesis	Relationship	Beta	SE	T Statistic	P-Value	Decision
H1	Perceived Ease of Use -> E-Wallet Adoption	0.417	0.120	3.475	0.001	**Supported**
H2	Speed -> E-Wallet Adoption	0.334	0.078	4.304	0.000	**Supported**
H3	Security -> E-Wallet Adoption	0.188	0.083	2.262	0.025	**Supported**
H4	Social Influence -> E-Wallet Adoption	0.043	0.059	0.727	0.468	Not supported

4.5 Summary of Findings

Table 4.10
List of Hypothesis Result

Hypothesis	Description	Results
	Results of Direct Relationship	
H1	Perceived ease of use is positively related to the adoption of cloud storage	**Supported**
H2	Speed positively related to the adoption of cloud storage	**Supported**
H3	Security is positively related to adoption of cloud storage	**Supported**
H4	Social influence is positively related to the adoption of cloud storage	Not Supported

4.6 Conclusion

All tests were conducted with the SmartPLS program in Chapter four in order to obtain the results of the study. The data collected are used to test the relationship and discrepancies between students and demographic profile of UUM students in the descriptive analysis, reliability test. In the chapter five we will further analyze and explain the results for the relationship between independent and dependent variables.

CHAPTER FIVE

DISCUSSION AND CONCLUSION

5.1 Introduction

The present section is concerned with systematically analyzing the outcomes of statistical effects in order to validate the observations presented on data analyzed in the last chapter. In addition to this, the results of the statistical research are followed by the constraint of the results of the analysis and future study recommendations.

5.2 Discussion of Major Findings

5.2.1 Relationship between Perceived Ease of Use and Adoption E-Wallet among students in Universiti Utara Malaysia

The results show that there is a significant and positive relationship between e-wallet adoption and perceived ease of use. If the e-wallet is easier to use or more convenient, the rate of e-wallet adoption is increased and vice versa. Previous studies support this result (Abrazhevich, 2001; Ainscough & Luckett, 1996; Chiu et al., 2009; Davis, 1989; Gao et al., 2011; Gefen, 2000; Guriting & Oly Ndubisi, 2006; Jun & Cai, 2001; Legris et al., 2003; Thong et al., 2006; Zhu et al., 2011). E-payment system is User friendly and a major factor in the growth of e-payments. The degree of acceptability was also graded.

The perceived ease of use is a major factor in consumer e-payment adoption. Perceived ease of use is defined as the constancy of user fundamental needs, technological progress and the use of experience. As the advanced E-wallet technologies are becoming more familiar, customers have built a confidence and practice of using it. As an application is complicated to use, people don’t tend to adopt to use an application

because it will be difficult to learn and causes frustration to use it. Therefore, the easier to use the e-wallet more user will adopt to use e-wallet service since it easier to learn and use it.

5.2.2 Relationship between Speed and Adoption E-Wallet among students in Universiti Utara Malaysia

The outcome shows that speed with adoption of an e-wallet relationship are positive. As the e-wallet speed rises, the e-wallet consumption rate increases and vice versa. The results are supported by earlier researchers (Chen & Nath, 2008; Dewan & Chen, 2005; Roozbahani et al., 2015; Tella & Olasina, 2014; Vinitha & Vasantha, 2017). Because everyone in the sample is young, they think speed is an important factor in influencing their adoption of the e-wallet. Pagani (2004) supported this view, which showed that the value of young people is more than just other factors.

To improve the acceptance rate, e-wallet dealers should demonstrate that benefits can be met. For example, it is important to improve the speed of the e-wallet beyond traditional payment procedures, as customers do not like to wait and spend their time on redundant and boring things. Speed enables the integration of new technologies with existing systems and procedures to rapidly meet customer requirements and expectations. Slower transaction may lead user to frustration and avoiding usage of this system. Therefore, speed will encourage more users to adopt e-wallet usage.

5.2.3 Relationship between Security and Adoption E-Wallet among students in Universiti Utara Malaysia

This outcome demonstrates that relationship between security with E-wallet adoption is significant. On other terms, e-wallet security affects the consumer's perception of e-wallet. The outcome has been supported by (Batra & Kalra, 2016; Junadi & Sfenrianto,

2015; Kabir et al., 2017; Manikandan & Jayakodi, 2017; Rathore, 2016; Sardar, 2016; Taheam et al., 2016). They also examined the influences of perception of e-payment in the country Malaysia. Found that trust and security are important elements of consumer perception. The reason is the respondents have become more unaware measures financial institutions have taken to address security issues. Consumers were not sure in embracing the payment channel. Therefore, the security of E-payment is a consumer concern to adopt e-payments.

All previous research has shown that security has a significant impact to e-wallet intention. Although all these researches had been conducted in foreign countries, still Malaysia can benefit from some of its findings. Malaysia and abroad can have equal opinions on the electronic wallet even of differences in culture, development, social and lifestyle. This may give Malaysia some information and views from these past researches. In addition, the study focused on UUM students and believes that security is an important factor in their adoption of E – wallet. People are afraid to use a service that involves money, whereby they don't intent to use as fear of losing their money. Therefore, a secure platform which gain people's trust will encourage more people to adopt to that platform.

5.2.4 Relationship between Social Influence and Adoption E-Wallet among students in Universiti Utara Malaysia

This outcome demonstrates that relationship between social influence with e-wallet adoption is negative and insignificant. This was agreed by (Aydin, 2016). This study by Aydin (2016) stated because of low penetration and the awareness of e-wallet systems between individuals there are no significant differences between users and

groups of non - users. This study, however, shows that the impact of social influence on the intentions of use is low.

This is because at the beginning of the life cycle the mobile payment system only has a few users. For both sample groups, however, rewards had little impact on attitudes and intentions of use. Yang et al. (2012) reports, though, that during initial adoption, social influence has a strong indirect influence. In contrast, the subjective standards of social influence and imaging forms has an impact directly on e-payment continuously. In addition, this study focuses on students of UUM and considers that the social influence of e-wallets is not significant to them. One of the reason social influence is not a major factor for e-wallet adoption is people get attracted by their own when they see advertisements or promotions by e-wallet service providers, they are not influenced by peer or social. Therefore, social influence is not a significant factor for adopting e-wallet.

5.3 Contribution of Study

Our study results emphasize mainly the factors that will influence the adoption of e-wallet. It may also provide help to service provider, financial institutions and researchers, who wish to study this topic more in the future.

This research can contribute to the various parts of society on the basis of the results of our research. The first party is the e-wallet services providers as well as companies in Malaysia interested in developing e-wallet services. The information contained in this study gives a better understanding of the business people in the areas of service provision and reference. Factors like e-wallet ease of use and transaction speed, as shown in the study, are important. For existing businessmen, they can therefore give

greater attention to those key and significant adoption factors in the research in order to improve and promote existing e-wallet services.

In addition, future businessmen can better assess consumer needs and e-wallet adoption elements in Malaysia. In addition, with more research and study, which can be applied as a guiding principle, it can increase consumer acceptance of services and improve facility providers ' performance. In addition, this study can also assist market financial institutions. When providing this facility to the public, the cooperation is important between the financial institution with provider of e-wallet service. Financial institution, like the bank, in customer needs-based collaboration and on the convenience and speed of the transaction may embrace and enhance customer payment.

Customers will become increasingly interested in introducing the new e-wallet service and will increase consumer adoption of e-wallet, given the confidence given by financial companies. It could help the financial institution improve its market position by taking new elements into account when its business strategy considers the adoption of financial technology.

Lastly, the study will bring advantages for future researchers interested in acceptance and various factors affecting E-wallet adoption. It may take the variables of this research as a future study guide. Based on our study findings, there are significant variables like convenience, social influence and speed. One of the variables the social influence of e-wallet adoption shows insignificant results. In the conduct of future research for different target respondents, future researchers may remove irrelevant variable and consider different factors. Since e-wallet has become an extremely new topic in Malaysia, only a minority of scholars have researched. This research can therefore Support them as criteria for future research and help researchers and the development team to work together.

5.4 Limitation of Study

In this study, there are certain limitations. First, the target population of this study was only students who studied at UUM. They are all 90s and are about 19 to 24 years old. The results represent only 90s born people perceptions but not from other groups. The results of this study. Not just young adults whereas even other age group are the main users of e-wallets. Users of various ages have various requirements and needs so that they may differ in view or accept the e-wallet from the sample respondents.

Additionally, adoption of latest tech differs between the baby boomers, X, Y and Z generation. Generation Y and Z are much easier in adopting and begin utilizing latest technology than generation X and baby boomers. It is easy for youngsters to use new technology, but not for the elderly, this is their challenge. This can therefore affect the reliability and precision of the result.

This study also randomly distributed surveys to UUM students and respondents from different faculties. This study contains student questions. Answerers comes from other sector are exposed to various situations and backgrounds so that they can have different opinions about e-wallets. This may also contribute to the reliability and precision of the result.

Moreover, the research concentrates only on students studying at UUM. In addition to a bachelor's degree, potential e-wallet users could come from various education levels such as high school, diploma, master's and above. People of different educational levels have exposure on diverse knowledge and understanding, the perspective may be different to something.

This can also lead to a different degree of acceptance and different variables impacting E-wallet adoption. Since this research is only concentrated on graduates, the results of

the study could not reflect the views of Malaysian consumers. This can therefore reduce the accuracy of the result.

5.5 Recommendation of Study

During the whole process, certain shortcomings were investigated after this research. Therefore, future scholars may refer to some suggestions and recommendations to correct the limits. In the future study, first and foremost, generations and age should be applied for target respondents. Expand the age range of target respondents through generation z, as well as generation X and generation y also baby boomers are suggested to researchers.

Diverse generations have grown up with various digital experiences, in particular e-wallet related financial technologies. As Rogers (1983) stated, Various adopter's groups such as laggards, late majority, early majority, early adopters and innovators exist in Diffusion of innovations theory. Innovators are prepared to risk a newer product while traditional people embrace a newly developed technology quite late. There could therefore be certain differences in the level of adoption and factors affecting acceptance among different categories of persons.

Secondly, respondents who came from various major. In order to use the e-wallet, it is recommended that you add in sample size different fields of study to compare them. For instance, science-based majoring, studying, economics, social science, IT, business studies and so on, individuals might have various opinions regarding innovation that includes e-wallet platform that are part of the financial software.

In order to improve the outcomes and variables that might have an impact on e-wallet adoption, more research and studies are therefore needed by various scholars. Thirdly,

it should be got better by including various educational background to samples to limit the educational level of the target respondents.

In addition to students, participants of different study levels could also add to the future. Different levels of education would have a different view of the products or services. Therefore, it is suggested that a variety of levels of education for the future study can be included in the research.

5.6 Conclusion

The goal of this study is to determine whether UUM students recognize the e-wallet. The perceived ease of use, security, social influence and speed is used to study e-wallet adoption. The study has collected a total of 181 questionnaires obtained randomly from UUM. The Smart PLS version three analyzed all the data collected in the questions. The analysis of data collected were performed using bootstrapping, Outer Loading Analysis, Descriptive analysis, Composite Reliability, Average Variance Extracted (AVE), Cronbach's alpha, Fornell-Larcker Criterion, bootstrapping, path coefficient and HTMT. From this research found that e-wallet adoption significant to perceived ease of use, security and speed.

Social influence, however, shows that e-wallet adoption is not significant. Results of this research could give facilities and entrepreneurs a guideline to provide more effective services. The results are available. In the element which will improvise e-wallet services, existing businesspeople can also pay attention while future entrepreneurs can estimate what the consumers want in e-wallet. In addition, financial institutions may improve transaction speed and ease of use to increase consumer attraction. This will enable them to improve their ability to compete on the market with others. In future studies, for further studies, this thesis may be used as a guide. In this

research, however, there are limits. In research, the focus of the research only on the 90s born people instead of the public. Second, most of the previous study focuses on students. There have been some suggestions addressed as limitations exist. Researchers are recommended in future studies to expand the range of age and involve various target audiences. In addition, such research projects plan to include the diverse field of studies in future study and to analyze e-wallet usage. In order to gather additional information and perspectives in online pockets, different education levels of respondents can be integrated.

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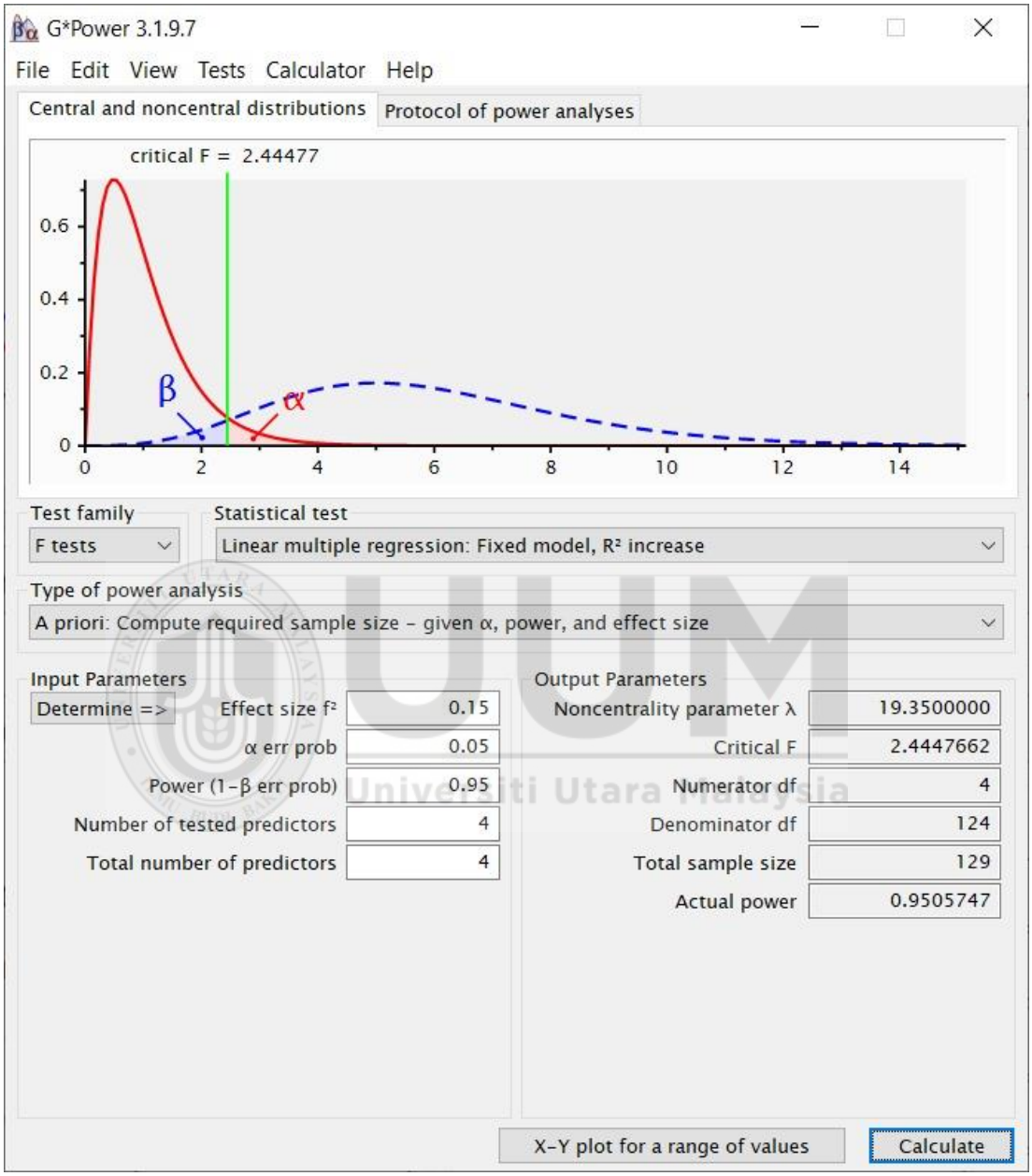
APPENDICES

Appendix A G*Power



Appendix B Questionnaire

APPENDIX A

Adoption of E-Wallet Among Students

Dear respondent,

I am conducting a research on **"Adoption of E-Wallet Among Students".** The ultimate purpose of this study to explore the influencing factors of students to adopt e-wallet in Malaysia.

I have identified your undergraduate and postgraduate students as having the characteristics necessary to participate in this research study. I would very much appreciate your contribution and cooperation to complete the enclosed questionnaires within your valuable time. Your answers are very important to ensure accuracy to this research. All information obtained would be treated **STRICTLY CONFIDENTIAL** and use for **ACADEMIC PURPOSES ONLY**.

If you have any questions about the survey, I shall be contacted at 016-2474208. A summary report will be provided to the participants upon request.

Thank you for your assistance and cooperation. I hope this study will provide a significant contribution for the betterment of e-wallet applications in Malaysia.

Yours sincerely,

School of Business Management

Mathanraj Naidu Arumugam

Universiti Utara Malaysia

E-mail: mathanrajnaidu@gmail.com

(Ts. Dr. Mathivannan A/L Jaganathan)

School of Business Management

Universiti Utara Malaysia

Penerimaan E-Wallet di kalangan Pelajar

Responden yang dihormati,

Saya sedang menjalankan kajian penyelidikan mengenai **"Penerimaan E-Wallet di kalangan Pelajar".** Tujuan utama kajian ini untuk meneroka faktor-faktor yang mempengaruhi pelajar untuk menerima E-Wallet di Malaysia.

Saya telah mengenal pasti mahasiswa dan pascasiswazah kerana mempunyai ciri-ciri yang diperlukan untuk menyertai kajian penyelidikan ini. Saya amat menghargai sumbangan dan kerjasama anda untuk menyiapkan soal selidik yang disertakan dalam masa yang anda hargai. Jawapan anda adalah sangat penting untuk memastikan ketepatan kajian penyelidikan. Semua maklumat yang diperolehi akan dianggap **SULIT** dan hanya akan digunakan untuk **TUJUAN AKADEMIK SAHAJA**.

Sekiranya anda mempunyai sebarang soalan mengenai soal selidik ini, saya boleh dihubungi melalui 016-2474208. Laporan ringkasan akan diberikan kepada para peserta atas permintaan. Terima kasih atas bantuan dan kerjasama anda. Saya harap kajian ini akan memberi sumbangan penting demi penambahbaikan E-Wallet di Malaysia.

Yang ikhlas,

Mathanraj Naidu Arumugam
Pusat Pengajian Pengurusan Perniagaan
Universiti Utara Malaysia
E-mel: mathanrajnaidu@gmail.com

(Ts. Dr. Mathivannan A/L Jaganathan)
Pusat Pengajian Pengurusan Perniagaan
Universiti Utara Malaysia

SECTION A / *SEKSYEN A*

Please **CIRCLE** the degree to which you agree with the following statements about **E-WALLET ADOPTION**.

*Sila **BULATKAN** sejauh mana anda bersetuju dengan kenyataan berikut tentang **Penerimaan E-Wallet.***

Strongly Disagree *Sangat Tidak Setuju* **1**	**Disagree** *Tidak Setuju* **2**	**Neutral** *Berkecuali* **3**	**Agree** *Setuju* **4**	**Strongly Agree** *Sangat Setuju* **5**

1	E-wallet can substitute the cash based payment method. *E-wallet boleh menggantikan kaedah pembayaran berasaskan Tunai.*	1	2	3	4	5
2	E-wallet can support the existing payment method. *E-wallet boleh menyokong kaedah pembayaran sedia ada.*	1	2	3	4	5
3	Using E-wallet is beneficial. *Menggunakan E-wallet adalah bermanfaat.*	1	2	3	4	5
4	Using E-wallet is wise. *Menggunakan E-wallet bijak.*	1	2	3	4	5
5	Using E-wallet is interesting. *Menggunakan E-wallet adalah menarik.*	1	2	3	4	5

Please **CIRCLE** the degree to which you agree with the following statements about **PERCEIVED EASE OF USE** of E-WALLET.

*Sila **BULATKAN** sejauh mana anda bersetuju dengan kenyataan berikut tentang **KEMUDAHAN PENGGUNAAN** E-WALLET.*

Strongly Disagree *Sangat Tidak Setuju* **1**	**Disagree** *Tidak Setuju* **2**	**Neutral** *Berkecuali* **3**	**Agree** *Setuju* **4**	**Strongly Agree** *Sangat Setuju* **5**

1	I do not get frustrated when use e-payment.	1	2	3	4	5

	Saya tidak akan kecewa apabila menggunakan e-Payment.					
2	E-payment is easy to learn and use. *E-Payment adalah mudah untuk dipelajari dan digunakan.*	1	2	3	4	5
3	I feel flexible in performing e-payment. *Saya berasa fleksibel dalam melaksanakan e-Payment.*	1	2	3	4	5
4	E-payment provides various payment channels that ease my online shopping process. *E-Payment menyediakan pelbagai saluran pembayaran yang memudahkan proses membeli-belah dalam talian saya.*	1	2	3	4	5
5	Less effort is needed when I perform e-payment *Kurang usaha diperlukan apabila saya melaksanakan e-Payment*					

Please **CIRCLE** the degree to which you agree with the following statements about **SPEED** of E-WALLET.

*Sila **BULATKAN** sejauh mana anda bersetuju dengan kenyataan berikut tentang **KELAJUAN*** E-WALLET.

Strongly Disagree ***Sangat Tidak Setuju*** **1**	**Disagree** ***Tidak Setuju*** **2**	**Neutral** ***Berkecuali*** **3**	**Agree** ***Setuju*** **4**	**Strongly Agree** ***Sangat Setuju*** **5**

1	I believe that using E-wallet will improve the speed of transaction. *Saya percaya bahawa menggunakan E-*wallet *akan meningkatkan kelajuan transaksi.*	1	2	3	4	5
2	Transactions will be faster compared to traditional payment methods. *Transaksi akan lebih cepat berbanding dengan kaedah pembayaran tradisional.*	1	2	3	4	5
3	It will save my time for using E-wallet payment system. *Ia akan menjimatkan masa saya untuk menggunakan sistem pembayaran e-Wallet.*	1	2	3	4	5
4	Using E-wallet can get quick response. *Menggunakan E-*wallet *boleh mendapatkan respons cepat.*	1	2	3	4	5

5	No waiting time/delay. *Tiada masa menunggu/kelewatan.*	1	2	3	4	5

Please **CIRCLE** the degree to which you agree with the following statements about **SECURITY** of E-WALLET.

*Sila **BULATKAN** sejauh mana anda bersetuju dengan kenyataan berikut tentang **KESELAMATAN** E-WALLET.*

Strongly Disagree ***Sangat Tidak Setuju*** **1**	**Disagree** ***Tidak Setuju*** **2**	**Neutral** ***Berkecuali*** **3**	**Agree** ***Setuju*** **4**	**Strongly Agree** ***Sangat Setuju*** **5**

1	Satisfied with the security system. *Berpuas hati dengan sistem keselamatan.*	1	2	3	4	5
2	E-wallets keep customers information private and confidential. *E-* wallets *menyimpan maklumat pelanggan peribadi dan sulit.*	1	2	3	4	5
3	Customers' financial information are protected. *Maklumat kewangan pelanggan dilindungi.*	1	2	3	4	5
4	E-Wallets ensure protection against risk of fraud and financial loss. *E-Wallets memastikan perlindungan terhadap risiko penipuan dan kerugian kewangan.*	1	2	3	4	5
5	It keeps my payment credentials secure. *Ia mengekalkan kelayakan pembayaran saya selamat.*	1	2	3	4	5

Please **CIRCLE** the degree to which you agree with the following statements about **SOCIAL INFLUENCE** of E-WALLET.

*Sila **BULATKAN** sejauh mana anda bersetuju dengan kenyataan berikut tentang **PENGARUH SOCIAL** E-WALLET.*

Strongly Disagree ***Sangat Tidak Setuju*** **1**	**Disagree** ***Tidak Setuju*** **2**	**Neutral** ***Berkecuali*** **3**	**Agree** ***Setuju*** **4**	**Strongly Agree** ***Sangat Setuju*** **5**

1	People who influence my behavior think that I should use mobile payment. *Orang yang mempengaruhi tingkah laku saya berfikir bahawa saya perlu menggunakan pembayaran mudah alih.*	1	2	3	4	5
2	My friends think that I should use mobile payment. *Kawan saya berfikir bahawa saya perlu menggunakan pembayaran mudah alih.*	1	2	3	4	5
3	Using mobile payment is considered a status symbol among my friends. *Penggunaan pembayaran mudah alih dianggap sebagai simbol status di kalangan rakan saya.*	1	2	3	4	5
4	People who are important to me expect me to use mobile payment technology. *Orang yang penting untuk saya mengharapkan saya untuk menggunakan teknologi pembayaran mudah alih.*	1	2	3	4	5
5	People who are important to me are likely to recommend using mobile payment technology *Orang yang penting bagi saya mungkin mengesyorkan menggunakan teknologi pembayaran mudah alih*					

SECTION B / SEKSYEN B

The following questions ask for information concerning yourself and your firm`s background. Please answer each question by ticking the appropriate box and fill-up the required information.

Soalan-soalan berikut meminta maklumat mengenai diri anda dan latar belakang firma anda. Sila jawab setiap soalan dengan menandakan kotak yang sesuai dan isi maklumat yang diperlukan.

Please tick (/) in the appropriate box / *Sila tandakan (/) dalam kotak yang sesuai.*

1. **Gender/*Jantina***

   ☐ Male/*Lelaki* ☐ Female/*Perempuan*

2. **Age/Umur**

☐ Below 18/*Bawah18* ☐ 22-24
☐ 19-21 ☐ 24 and above/ 21 dan atas

3. **In which education level are you in now? / Tahap pengajian mana satu anda sekarang**

☐ Undergraduate/*Mahasiswa* ☐ Postgraduate/ *Pascasiswazah*

4. **In which state are you from/ Dari negeri mana**

☐ Wilayah Persekutuan KL ☐ Selangor ☐ Sabah
☐ Sarawak Johor Kelantan

☐ Pulau Pi*nang* ☐ Perak ☐ Terengganu
☐ Kedah ☐ Perlis ☐ Pahang

☐ Negeri Sembilan
☐ Melaka

5. **Are you studying in UUM KL?**

Adakah anda mengaji di UUM KL?

☐ Yes/Ya ☐ No / Tidak

6. **What is your degree program?**

Apakah bidang sarjana muda anda ?

☐ Business/ Perniagaan ☐ Non Business / Bukan Perniagaan

THANK YOU VERY MUCH FOR YOUR KIND COOPERATION.

TERIMA KASIH ATAS KERJASAMA ANDA.