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**CONSUMERS' INTENTION TO USE E-MONEY MOBILE  
USING THE DECOMPOSED THEORY OF PLANNED  
BEHAVIOR**



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**UUM**  
Universiti Utara Malaysia

**DOCTOR OF PHILOSOPHY  
UNIVERSITI UTARA MALAYSIA**

**2016**

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DECOMPOSED THEORY OF PLANNED BEHAVIOR**



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Thesis Submitted to  
Othman Yeop Abdullah Graduate School of Business,  
Universiti Utara Malaysia,  
in Fulfillment of The Requirement for the Degree of Doctor of Philosophy



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## ABSTRACT

The purpose of this study is to understand consumers' behavior on their intention to use e-money mobile. The study of the intention to use e-money mobile is still at the early stage in payment transaction. The e-money mobile is a new product for payment transaction that look for massive, micro, and quick means for transaction. The model that integrates in this study is the Decomposed Theory of Planned Behaviour (DTPB). In particular, it is simultaneously assesses the determinants of consumers' intention to use e-money mobile in Indonesia which examines twelve (12) variables. The variables are attitude, awareness, subjective norm, perceived behavioral control, perceived risk, perceived security, relative advantage, complexity, social-cultural influence, family, self-confidence, and resources facilitating conditions. Based on a sample of one thousand and three hundred (1300) respondents was selected using mall-intercept method with technique sampling multistage cluster sampling and systematic random sampling in Padang, Indonesia. The Partial Least Squares Method (PLS) series PLS 2.0 M3 for algorithm and bootstrap techniques and SPSS 18 was used to test the hypothesis that has been developed. Results show that all variables had significant positive influence on the intention to use e-money mobile excluded the awareness. The awareness has positive influence but not significant on the intention to use e-money mobile. This study contributes to improve the specific theory of DTPB that generally limited to e-Commerce, e-Banking, and others social networking. The findings give more information to the issuers about the characteristic consumers and add new knowledge for academics, practioners, bank, assurance companies, airline companies and the health sector.

**Keywords** E-money Mobile, Intention to Use, Decomposed Theory of Planned Behaviour, Payment Transaction

## ABSTRAK

Kajian ini bertujuan untuk memahami gelagat pengguna terhadap niat mereka menggunakan e-wang mudah alih. Kajian mengenai niat untuk menggunakan e-wang mudah alih masih di peringkat awal dalam urus niaga pembayaran. E-wang mudah alih adalah produk baru untuk transaksi pembayaran secara besar-besaran, mikro, dan cara cepat untuk bertransaksi. Kajian ini mengintegrasikan Teori Penguraian Tingkah laku Terancang (DTPB). Secara khususnya, ia menilai serentak penentu niat pengguna untuk menggunakan e-wang mudah alih di Indonesia dengan meneliti dua belas (12) pemboleh ubah. Pemboleh ubah tersebut adalah sikap, kesedaran, norma subjektif, kawalan tingkah laku dilihat, risiko dilihat, keselamatan dilihat, kelebihan relatif, kerumitan, pengaruh sosial budaya, keluarga, keyakinan diri, dan sumber memudahkan keadaan. Berdasarkan sampel satu ribu tiga ratus responden (1300) telah dipilih menggunakan kaedah pintasan-mal (*mall-intercept*) dengan teknik pensampelan iaitu pensampelan kelompok berbilang dan persampelan rawak sistematik di Padang, Indonesia. Kaedah Separa Least Squares (PLS) siri PLS 2.0 M3 untuk algoritma dan teknik ikat but (*bootstrap*) serta SPSS 18 telah digunakan untuk menguji hipotesis yang telah dibangunkan. Keputusan kajian ini menunjukkan bahawa semua pemboleh ubah mempunyai pengaruh positif yang signifikan terhadap niat untuk menggunakan e-wang mudah alih kecuali kesedaran. Pemboleh ubah kesedaran ini mempunyai pengaruh penting yang positif tetapi tidak signifikan pada niat untuk menggunakan e-wang mudah alih. Dari segi sumbangan, kajian ini meningkatkan teori DTPB yang biasanya terhad kepada e-dagang, e-perbankan, dan rangkaian-rangkaian sosial sahaja. Penemuan kajian ini memberi lebih banyak maklumat kepada “penerbit” tentang ciri-ciri pengguna dan menambah pengetahuan baharu kepada ahli akademik, pengamal, bank, syarikat insurans, syarikat penerbangan dan sektor kesihatan.

**Kata kunci** E-wang Mudah Alih, Niat Untuk Digunakan, Teori Penguraian Tingkah laku Terancang, Transaksi Pembayaran



## ACKNOWLEDGEMENT

First of all, I would like to thank to the Almighty Allah, the Most Gracious and the Most Merciful, for giving me the opportunity to complete my PhD thesis. Peace be upon our beloved Prophet Muhammad (SAW), his family and his companions. First and foremost, my gratitude and appreciation goes to my great supervisor, Assoc. Prof. Dr. Fairol Halim who has been guiding, understanding and supporting successfully in very busy schedules.

A special thank to my beloved parents, Abdul Nazir, S.H., M.M. and Zaimah, S.Pd. who always send me a great prayers and supporting all the times. It is also to my lovely brother, Mohd. Abd. Arif Irkhas and to my dear sister, Ismah Wasilah give the spirit in all difficult times.

I would like to express my appreciation to external examiner; Assoc. Prof. Dr. Maisarah Ahmad and internal examiner; Assoc. Prof. Sany Sanuri Mohd Mokhtar who had examined my thesis and come out with some corrections and suggestions. I have thanks to the chairman and secretary during my viva voce; Assoc. Prof. Dr Selvan Perumal and Madam Nor Pujawati Md. Said. Besides, my credit goes to some great lecturers who have been contributes for my thesis; Prof. Madya Abu Bakar Hamed, Mr. Perengki Susanto, M.Sc., Prof Madya Dr. Zolkafli Hussin. I would also like to thank to all the staff at SBM COB, OYA Graduate School of Business, Universiti Utara Malaysia (UUM) for their invaluable helps

throughout my study. My gratitude also goes to UUM for granting me the scholarship and study leave to pursue this PhD degree.

My credit goes to many people and institutions that have supported me throughout to this great journey. Finally, Special appreciations go to all great friends who help me and to all respondents who have contributed for my thesis.

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# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

This chapter provides a background on general and specific approach related to this study along with problem statement, research questions, objectives, significance of the study, scope and limitations of the study. Finally, it ends outlining the organization of the thesis.

### 1.2 Background of the Study

The electronic payment system is an innovative payment system that makes use of technological advancement which greatly affects micropayment transaction. Many countries in the world have implemented this by allowing transaction of cash in an electronic manner whereas there are still growing attending on this innovative payment system, especially among developing countries. Globally, the adoption of e-money has existed since 20 years ago. However, it was pointed out by Popovska-Kamnar (2014) that there are diversity dissatisfaction experiences among consumers when performing the transaction which usually leads to system failure and success transactions.

In this electronic payment system, the term e-Cash (which is derived from e-Money) was introduced in 1993 and it is defined as a digital cash used in electronic transactions as named by Dr. David Chaum the innovator of

electronic payment systems (The History of Electronic Payments (Part 2), 2014). This has been implemented in many countries within East Asia, Africa, and Europe as a means for cashless society whereas, the United States was one of the first countries to implement this system (Fung, Molico & Stuber, 2014). In United States American Mark Twain Bank was the first institution to implement this system in 1994 which made the bank the first bank to issue digital cash worldwide. From 1994 till date, this payment system had been found to account for over 90% of the total value of all electronic transactions within the country. This has led many countries to adopt the system such as Russia and Great Britain. In Russia, the first domestic chip card was Golden Crown system. Differently, a British company developed the world's first "electronic wallet". Consequently, the Bank for International Settlements (BIS) announced formal research on the electronic money market in 1996 which illegalised the idea of issuing electronic money (The History of Electronic Payments (Part 2), 2013).

Unlike in the United States, the adoption of this system has little defects whereas in other parts of the world the adoption of this system is hampered and unsuccessful (dbresearch, 2012). This might be due to the fact that the American people are more open to innovation systems generally compared with other parts of the world. In Europe, virtual money using a mobile phone for the transaction has been introduced while some countries in African that lack payment infrastructure with limited access to banking system have encouraged the implementation of mobile money used for micropayments

transactions. An example of such countries in Africa is Kenya which has been identified as one of the most success stories in the continent (Fung, Molico & Stuber, 2014). Furthermore, many services in the Denmark such as pharmacies, transport cost, hospitals, and post offices have adopted this system starting from January 2016. A similar trend is observed in the Norway and Sweden where banks have shifted their attention towards electronic money usage in the form of card-based and e-money (Harrison, 2015).

Likewise in East Asia, countries are all familiar with the use of e-money card that can be operated off-line. Countries such as Indonesia, Malaysia and Singapore tend to use mobile devices as tools for payments transactions. This same phenomenon is happening among the underdeveloped countries such as Somalia and Afghanistan where the implementation of usage of e-money is receiving huge attention (Fung, Molico & Stuber, 2014). Therefore, it can be seen that the trend toward e- money mobile in developing the country and underdeveloped countries are still slow and limited compared with a developed country. Also, it can be seen that the implementation and usage of this system among the under-developed countries is hampered by many factors whereas the financial sector is key to the development of any countries.

Additionally, the adoption of this system is supported with the statistic of a number of global users which depicts rise in the usage of the system. Figure

1.1 present consumers behaviour and their preferences on mobile devices (Chaffey, 2016).

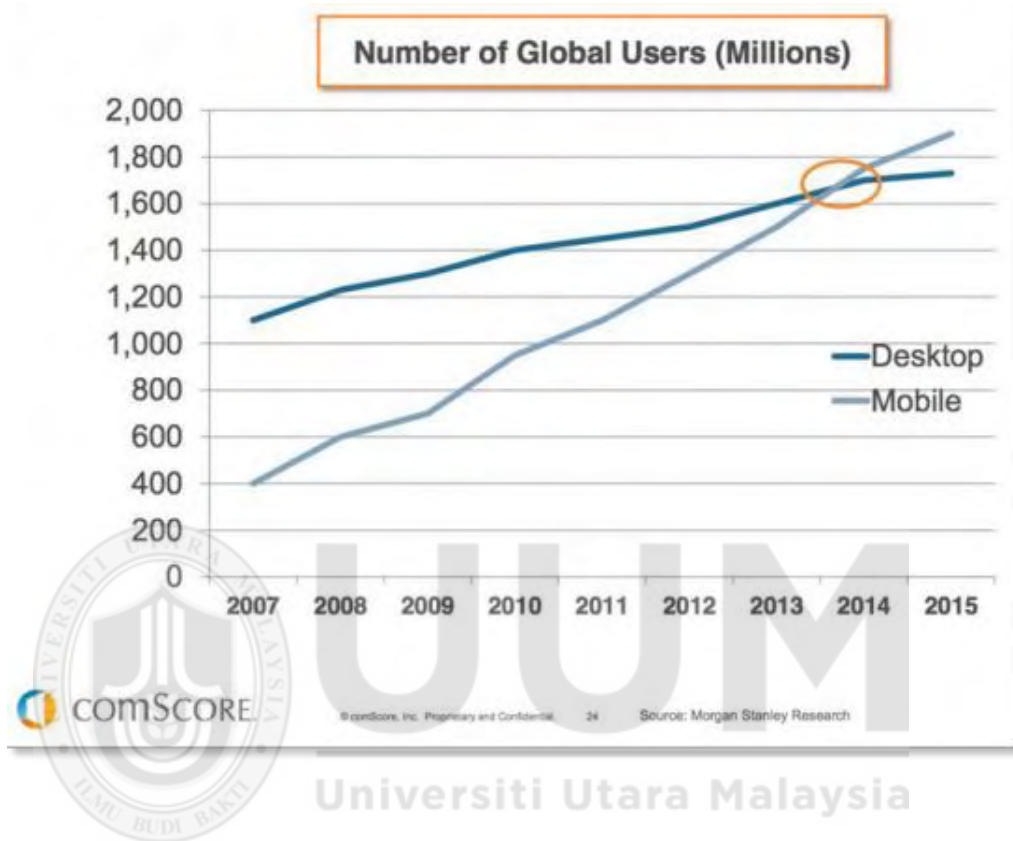


Figure 1.1

*Numbers of Global Users (Millions)*

Source: (Chaffey, 2016)

Based on the above figure, there is a reduction in the usage of desktop media compared with mobile media. It showed that the consumers tend to use mobile rather than go through the website using the desktop. This might be due to the fact that mobile media is more convenient, faster speed and connectivity (Molla, 2016). Table 1.1 summarized the number of the transaction through e-money around the world.



Table 1.1

*Number of Transaction through E-money Mobile*

<b>Types of E-money</b>	<b>Country</b>	<b>Dominated</b>	<b>(%)</b>
Card-Based	United States	Card	90
Card-Based	Denmark	Card	73
Card-Based	Sweden	Card	67
Card-Based	Estonia	Card	65
Card-Based	Portugal	Card	67
Mobile-Based	Kenya	Mobile	80
Mobile-Based	Somalia	Mobile	40
Mobile-Based	Latin America and Carribbean	Mobile	12
Mobile and Card-Based	India	Mobile	40
Mobile-Based	Sub-Saharaan Africa	Mobile	80

Based on the information, it can be seen that developing and under-developed countries have less domination with e-money mobile transactions rather than developed countries. For instance, Singapore was the first country to use e-money in Asia in 1997 which was only chip-based and the first transaction using SET (Secure Electronic Transaction) while Indonesia introduced it later in 2010 which made Singapore users to be more familiar with the usage than Indonesia (Oak, 2011).

Although, a country like Indonesia has a larger population than Singapore which implies that the country users will be greater. Thus, in order to increase numbers of e-money globally then highly population countries such

as Indonesia, Mexico, India, Egypt, the Philippines and Nigeria which be given priority. These countries need to increase the consumer's ability through digital readiness to make them understand the value of going cashless. For instance, Indonesia is one of the developing countries with large population and efforts should be geared to orientate citizens on the benefits and impact of the cashless system (Chakravorti, Chaturvedi & Mazzotta, 2016). Hence, Indonesia must be prioritized to be fully digitalized on financial transactions.

Although, Indonesia has introduced e-money since 2007 with two types of product options such as chip-based and server (mobile) based (Bank Indonesia, 2013). However, chip-based e-money product is not accepted within the entire country whereas such transactions are more applied in the big city. Considering the geography of Indonesia with the highest number of islands in the world, e-money product based server or e-Money on a mobile phone is more appropriate to reach every individual within Indonesia. This can be supported by the fact that Indonesia has the second largest cellular mobile users in Asia and the fourth largest in the world (Central Intelligence Agency, 2012). The same data source revealed that the total user of cellular mobile in Indonesia is more than the total population of citizens in the country. This condition favours potential business intention on payment system because the online transaction has emerged as one of the sophisticated trends in business transactions in recent years. The payment system is essential and extremely important in business goods or services.

Therefore, an easy and accessible payment system becomes one of the focuses in a business transaction in Indonesia.

Another issue is the usage of ATM (Automated Teller Machine) which is based on product chip system used to access e-Money transactions. In the East Asia, ATM is regulated by Asian Payment Network (APN) which is integration across member countries of ASEAN such as Malaysia, Singapore, Thailand, Philippine, South Korea, and Vietnam since 2003 (Bank Negara Malaysia, 2010). This integration does not have a strong effect on the society to access transaction payments, especially on micropayments. Arya Damar, the director of PT Artajasa Pembayaran Elektronis (ATM Bersama), had estimated a total of 50,000 ATMs in Indonesia in 2012, which necessitates an improvement with respect to the demography of Indonesia which is loosely displaced overall different islands and inlands (finance.detik, 2012). This has caused an increased in the deployment of ATM in the country especially in areas that are not easily accessible which are done in-line with recorded high volume of bank customers' transactions within that locality. Furthermore, it was been discovered that the central Bank of Indonesia has geared up efforts on ensuring availability and accessibility to ATM by all citizens which will promote Mobile Financial Services (MFS) and Financial Inclusion (FI) in the country. This effort is believed in improving citizens' economic power by making MFS accessible to all (Bank Indonesia, 2013). Likewise, it is been that the improvement of mobile phone technology will support FI program. Technology has been identified as one of the means to reach out to remote

areas where banks and other financial institutions are unavailable. The widespread usage of mobile technology in all walks of life has made it possible to reach remote population for the easy accessibility of FI program (Bank Indonesia, 2013).

Another effort done to promote FI program was the introduction of branchless banking which involves the interaction of banking actors in order to achieve this objective. The actors involve in this interaction include the bank as an institution, telecommunications companies, and others. The telecommunications companies are key in this effort because of their access to a very large customer database within wide coverage which can be a contributing factor for a successful FI implementation, through e-money product-based servers issued by the telecommunications company (Bank Indonesia, 2013).

Based on models applied in various countries, such as Kenya, South Africa, and the Philippines, there are 3 service models that used handheld telephone technology and mobile agents known as *Mobile Financial Services* (MFS), the bank-led model, Mobile Network Operator (MNO)-led model, and Hybrid models. Each model has its own advantages and weaknesses. In countries like Kenya and the Philippines, the concept of MNO-led was successfully applied. For some countries like South Africa, it was managed by the Bank-led model. Basically, both banks and MNO have a slightly different role if used on FI development. The most optimal form of

cooperation is the synergy, where banks and companies jointly provide telecommunication services in an integrated manner (Bank Indonesia, 2013). In regard to these issues, the Indonesia Bank report in the year 2013 made a comparison between e-money and debit card based transactions which is summarized in Table 1.2.

Table 1.2

*Comparison: E-money, Credit card, and Debit card based Transactions in 2012 and 2013*

Types of transactions	Frequency transactions per year	
	2012	2013
E-money	100,62 million	137,9 million
Debit/Credit card	2,82 billion	3,7 billion

Source: Bank Indonesia (2013)

From Table 1.2, it can be obvious that e-money has the lowest frequency of transaction per year in comparison to debit and credit cards. However, e-money has improvement with the highest percentage than other two types of transaction. This shows the intention of consumers to use e-money, but it is still poorer than other products of payment. Based on this finding, many researchers and experts in Indonesia are more interested in exploring issues and challenges on e-money mobile transaction. Therefore, this present research will also join other studies in exploring this issue however, the study will specifically focus on intention to use the e-money mobile in Indonesia in order to promote the country government effort on the cashless environment.

This is very vital based on Candraditya & Idris (2013) that the development of e-money in Indonesia is classified as a new product which is needed to support the Indonesia Bank efforts on a cashless. This study revealed that e-money had been growing significantly from year to year, but the consumption of e-money is not optimal. According to a survey by a financial body in the country known as Indonesia Finance Today, the volume transaction of e-money is only  $\frac{1}{4}$  of the total e-money issued which depicts that only 1 in every 4 of issued e-money is used. It was conducted that there is a need to investigate customer's intention to use the service in order to promote government strategies on its cashless efforts. Furthermore, Bank Indonesia conducted a survey in 2011 and 2013 on the academic community at Indonesia University (UI). The result showed that only 9% of the UI academic community responded spontaneously that they utilized electronic money as a means of payment. The result of the survey in 2013 was in line with the BI survey in 12 cities which was conducted in 2011. Results of the survey showed that only 1% of people knew the existence of electronic money in the country (Bank Indonesia, 2013).

Although, this study is examining the issue of intention to use e-money and the issue of intention is widely explored in marketing area by previous studies in online shopping, e-Banking (Internet Banking, mobile Banking, etc), e-Commerce, and soon. However, the contribution of this study is different from previous studies which basically focus on the utilization of e-Money and customers' intention to use e-money product-chip based

(Candraditya & Idris, 2013; Rahmatsyah, 2011), and consumers' protection of e-money (Candrawati, 2013). Hence, this study investigation focuses on the intention to use e-money mobile, since e-money in generally is at its early stage whereas the sale of e-money by the consumers is at the lowest level in compared to other instruments for payments. As a new product for payment, there are some limitations in its usage and services, especially within e-money mobile. Thus, based on the huge benefits of e-money mobile has a good prospect in micropayment system, however, the issue of its usage and utilization by customers are still limited. Therefore, the study is significant due to its contribution to the investigation of consumers' intention to use e-money especially, e-money mobile to promote the cashless environment.

### **1.3 Problem Statement**

There is a growing attention on the need for a cashless environment in developing countries which is bringing more concerns on the usage and utilization of e-money and mobile devices as tools to facilitate this payment transaction. The phenomenon had increased the issue of the infrastructure of payment system which is limited in developing countries compared to developed countries and to ensure fast money transactions through the internet. Thus, the adoption of e-money mobile in developed countries is higher compared with developing countries. The reason for this is because of the condition that consumers' ability to access the facility through ATM or need to connect to the internet is poorer in developing countries than in developed countries. So, e-money mobile is

chosen to use strategically for financial transactions in developing countries. Otherwise, the least developed countries are preferable to attract the consumers to use more mobile phones to makes easier the transaction especially in micropayment (ITU-T Technology Watch, 2013).

The contextual issues of consumers' intention to use e-money mobile in Indonesia are highlighted with data shown its transaction has the lowest frequency per year compare to ATM card (debit card) and Credit Card. Even though the volume of e-money transaction is increasing, however, this is still below of ATM card (debit card) and Credit Card (Bank Indonesia, 2013). Besides, there is limited knowledge on e-money mobile which has led consumers to have different perceptions on its usage and services. Although, ATM card (debit card) and Credit Card have been earlier existed and accepted by consumers makes many consumers. The integration of these services with e-money mobile should improve the services however, it is discovered that the service is still not put to use by customers. In fact, there is a lack of awareness of e-money mobile in terms of its function and transaction procedure among many customers (Bank Indonesia, 2014).

This implies that there is a limitation on the implementation of e-money mobile in most developing countries and some developed countries. The direction of policy and development for e-money should focus on the efforts to increase the use of e-money in the community (Bank Indonesia,



2013). Consumers need to register for more than one account or card where limited interconnection or interoperability between issuers brings complex procedures in order to facilitate cashless environment (Bank Indonesia, 2013). For instance, Indonesian customers' have been discovered to have weak self-confidence and lack of resources facilitating condition to use e-money mobile. Besides, this will affect customers' attitude toward hard to access e-money mobile while some troubles exist in transactions (Bank Indonesia, 2013).

In addition, the consumers have limited access to information due to the geographical scenario in Indonesia with many islands. It has posed certain difficulties for consumers in dealing with product and services (Menkofindo, 2013). It was presented by the Ministry of communication and informatics (Menkominfo) that there are approximately 270 million mobile phone users in Indonesia (ugm.ac.id, 2014). The total number of mobile users is estimated to be higher than the total projected population of Indonesia in 2014 which is approximately 244,814,900 people (data statistic Indonesia, 2014).

Thus, customers prefer to use credit/debit card for more transactions, since the e-money is still growing and needs to be introduced in large society activities (Bank Indonesia, 2013). This is strongly affected by the social and cultural context. The more verified to the financial guarantees and trusted customers which ensure the safety and security for their money.

Security is one of the core concerns for e-money mobile transaction. The Security Threat Report 2013 ranked the countries riskiest for Internet use, all with infection and attack rates above ten percent. Table 1.3 highlights the top 10 riskiest countries for Internet-based attack as follows.

Table 1.3

*Ten Online Banking Riskiest Countries*

No	Countries	%
1	Indonesia	23.54
2	China	21.26
3	Thailand	20.78
4	Philippines	19.81
5	Malaysia	17.44
6	India	15.88
7	Mexico	15.66
8	UAE	13.67
9	Taiwan	12.66
10	Hongkong	11.47

Source: Shophos (2013)

Based on the previous table, Indonesia is ranked as one of the countries with the highest risk with 23.4%. Consumers need to ensure the safety and security of the money on mobile through the financial guarantees and trust of the customers. Risk and security are two factors influence payment transaction. These two involve different criminal activities that can create utter inconvenience during the transaction of e-money mobile. There are many ways that customers can be put at risk such as personal identification number (PIN) hacking, spamming a message or manipulation or alteration of consumer's data via fraudulent means.

Consequently, when consumers decide to use e-money mobile, the consideration for risk and security issues is of high important (Schiffman, 2010).

In addition, the consumers have to consider the requirements or protocols prior to any transaction whether there are sufficient authority or the transaction is happening without explicit consents. This is purposed to avoid unsolicited bribery (Asokan et al, 2000). However, the online transaction can still maintain good standard as long the transaction is not interrupted to challenge the consumer, especially when the account is hacked by any miscreant. Therefore, the consumers will not only fail to accomplish the transaction but can also lose money and fund to the transactions.

Based on these issues, it is feasible to adapt the Decomposed Theory of Planned Behaviour (DTPB) due to its applicability on variables such as intention to use and other related variables. The DTPB is the most appropriate theory for this study because of its usage in related studies. The theory is strongly accurate to understand the antecedents of consumers' behaviour with a higher power of explanatory (Taylor & Todd, 1995a). The empirical gap found that e-money mobile is mostly introduced as a new area in the previous studies without providing an extensive discussion. Many scholars have been discussed the Decomposed Theory of Planned Behaviour (DTPB) on payment system and online

transaction. Otherwise, the gap in the theoretical through consumers' intention to use, it r related to TAM (Theory of Acceptance Model), TPB (Theory of Planned Behavior), UTAUT (Unified Theory of Acceptance and Use of Technology) with various background of the area of the study; Internet Banking (McKnight, Choudhury, & Kacmar, 2002; Cheng, Lam, & Yeung, 2006), online shopping behavior (Rachel et al., 2013), mobile Banking (Crede, 1995; Ooi, 1999; Nasri & Charfeddine, 2012), mobile internet (Ling, Wang & Hwang, 2010; Se-Joon, James, & Kar, 2006), e-shopping (Hung, 2004; Sheeran & Orbell, 1999; Armitage & Corner, 2001), B2C e-Commerce (Hong-bumm, Taegoo & Sung, 2009; Ling, Wang & Hwang, 2010), mobile TV (King and He, 2006; Casaló et al., 2010; Lee et al., 2012; Yung & Jeff, 2012), and tablet commerce (t-commerce) (Jieun, Imsook, Munkee & Jaejeung, 2005; Casaló et al., 2010). Therefore, there is a need to study in bridging the theoretical gap of the research for consumers' intention to use e-money mobile.

As the Decomposed Theory of Planned Behaviour (DTPB) is introduced to be the ground of study, the contextual issues bring the theory to analyse focus on the intention of consumers but excluding usage behaviour into the study (Balasubramaniam et al., 2002; Rohm & Sultan, 2006). It is positioned in introduction stage. Discussed usage behavior, the object of the study need to be stable in term of consumers had used the product. The difference conditions in e-money mobile are the potential consumers become the focus of respondents of the study because e-money mobile is

considered as a new instrument for micropayment that not all of consumers' aware about it as well as credit or debit card. This phenomenon is supported by previous studies are a focus on explaining intentions as the predictors of behaviour and mostly deal with the overseas situation rather than in the context of Indonesia (Varnali & Toker, 2010; De Canniere, De Pelsmacker, & Geuens, 2009).

The empirical gap comes as in line with the previous issues. The e-money mobile is complex to be understood. Shih and Fang (2004) used DTPB in predicting the adoption of Internet banking among Taiwanese bank customers that complexity had a significant negative effect on attitude. A complexity has been discussed in various backgrounds of study. (Rogers, 1993; Goldsmith and Flynn, 2004; Goldenberg et al., 2001; Steenkamp and Gielens, 2003). However, complexity has no consistent result on intention to use e-Banking, e-commerce, online shopping (Gefen and Straub, 2000; Nasri & Charfeddine, 2012). Besides, complexity has tested to the relative advantage that is not consistent result (Jeyaraj et al. 2006; Hsu and Lu 2004). To see the effect of consumers' attitude through the phenomena, the previous studies no more discussed in e-money mobile transaction that suit to be investigated by addressing attitude (Lu et al. 2005; Chong et al. 2010; Wei et al. 2009).

In turn, the issue of consumers that lack awareness has discussed in previous studies found DTPB as the ground of the study which is still inconsistent result (Azouzi, 2009; Larose & Rifon, 2007; Lee, 2009; Lin et. al, 2010; Al-Fahim, 2012). Safeena et al (2010) found the consumer awareness on a student in the university shown a positive impact on the intention to adopt internet banking. Another setting can be seen in the telecommunications industry where awareness on mobile devices is such an opportunity to make customers get more knowledge (Pousttchi, 2006; Nysveen et.al. 2005; Norris, 2007) for example from promotion (Lewison, 1996). However, the previous studies limited to Internet Banking and others area (e-commerce, online shopping) which is still inconsistent result (Liao & Cheung's, 2002; Mattila & Pento; 2002, Sathye, 1999).

The rule of social-culture in society is potential to increase volume and frequency transaction e-money mobile. The antecedents' social-cultural influence is still not consistent result (Cookie & French's, 2008; Alqeisi, 2009; Siam, 2006; Wu & Leaderer, 2009). Indonesia is chosen because it can comprise the variety of sub-cultures of people from many islands in Indonesia. It might produce a significantly different context of the study in the term to understand consumers' intention to use e-money mobile. The gap exists while e-money mobile becomes as a new area to develop the new knowledge (Ventakesh & Davis, 2000; Gu, Lee & Suh, 2009; Gatautis & Medziausiene, 2014; Yahya, Nadzar & Rahman, 2012). It is improved the family as kind of consumers' decision factor can influence

the e-money mobile found the inconsistent result (Lee, Kozar & Larsen, 2003; Nor & Pearson, 2008; Prompattanapakdee, 2009). It comes with perceived behavioral control (Ajzen, 1986,1991; Fishbein & Cappella, 2006) with antecedents self-confidence (self-efficacy) that still not consistent result (Bandura, 1977, 1982) and the facilitating condition is also not consistent result (Xinhua News, 2009).

The risks issue brings the factors of perceived risk as variable that is no more discussed in e-money mobile, more of previous studies discussed in Internet Banking and others area (e-commerce, online shopping) which is still inconsistent result (Jarvenpaa et al., 1999, Kim et al., 2009; Peng Lu, et al., 2005; Taylor, 1974; Dowling, Stealin, 1994). In one hand, the perceived security can support the measure the consumers' intention to use e-money mobile but the previous studies found the result still inconsistent (Aladwani, 2001; Yousafzai, Pallister & Foxall, 2003; Schierz et al., 2010; Furnell & Karweni, 1999; Bestavros, 2000; Lwin et al., 2007; Bauer et al., 2005a). Thus, the problems that this study exactly intends to address are Decomposed Theory of Planned Behaviour (DTPB) as a ground theory to measure the consumers' intention to use e-money mobile in Indonesia. The study goes to explore the relationships between consumers' awareness, attitudinal belief, normative belief, control belief, perceived risk and perceived security on behavioural intention. In addition, the findings in this study will be beneficial in promoting growth, improving security and usability of e-money mobile.

#### 1.4 Research Questions

Based on the research background and problem statement, this study attempts to answer the following research questions:

- (1) Does attitude influence intention to use e-money mobile?
- (2) Does subjective norm influence intention to use e-money mobile?
- (3) Does awareness influence intention to use e-money mobile?
- (4) Does perceived behavioural control influence intention to use e-money mobile?
- (5) Does perceived risk influence intention to use e-money mobile?
- (6) Does perceived security influence intention to use e-money mobile?
- (7) What are the antecedent factors that influence attitude towards an intention to use in e-money mobile?
- (8) What are the antecedent factors that influence subjective norm towards an intention to use in e-money mobile?
- (9) What are the antecedent factors that influence perceived behavioural control towards an intention to use in e-money mobile?
- (10) Does complexity influence relative advantage towards an intention to use e-money mobile?



- (11) Does awareness influence relative advantage towards an intention to use e-money mobile?

### **1.5 Research Objectives**

In order to investigate the antecedents of intention to use e-money mobile in Indonesia as well as the applicability of DTPB, the specific objectives of the study aims the following aspects:

1. To investigate the influence of attitude toward intention to use e-money mobile.
2. To determine subjective norm influence toward intention to use e-money mobile.
3. To investigate awareness influences toward intention to use e-money mobile.
4. To determine perceived behavioural control influence toward intention to use e-money mobile.
5. To investigate perceived risk influence toward intention to use e-money mobile.
6. To determine perceived security influence toward intention to use e-money mobile
7. To identify the antecedent factors that influence attitude towards intention to use e-money mobile

8. To identify the antecedent factors that influence subjective norm towards intention to use e-money mobile
9. To identify the antecedent factors that influence toward perceived behavioural control towards intention to use e-money mobile
10. To investigate complexity influence relative advantage towards intention to use e-money mobile
11. To determine awareness influence relative advantage towards intention to use e-money mobile

## **1.6 Organization of the Thesis**

This thesis consists of seven chapters. Chapter 1 provides a brief introduction, background of the study, problem statement, research questions and objectives, significance, scope, and limitations of the study and organization of the thesis. Chapter 2 presents the exploring e-money from definitions, development e-money in Indonesia and finally, area of research related to e-money. Chapter 3 presents the literature review and discussion on previous research. It provides a detail of the variables that are used to study this research and antecedents of behavioural intention. Finally, this chapter covers the importance of intention to use e-money and a discussion on the underpinning theory that is used in this research. Chapter 4 contains research methodology, design, and justification for the methodology that includes the research framework, hypothesis development, research design, and operational definition. Furthermore, it discusses the measurement of variables, data collection, sampling, data

collection procedures, and technique of data analysis. Chapter 5 presents a discussion on data analysis, a summary of response rate, respondent's profile, and factors of validity and reliability of the test. Moreover, it presents the confirmatory factor analysis following the regression analysis technique through the use of smart PLS software. Chapter 6 provides the summary of the study and a discussion on the result of data analysis. It presents the potential implications and contributions of the research. It elaborates the research limitations and avenues for future research. This chapter is followed by the conclusion.

## **1.7 Summary**

This chapter discussed background the study. In specific, the problems statement explained the issues of the consumers' intention to use e-money mobile in Indonesia. With these issues, it is important to investigate the consumers' intention to use e-money mobile in Indonesia. So, the effect of this study is expected to be able to influence the consumers' intention to use in Indonesia.

## CHAPTER 2

### OVERVIEW E-MONEY IN INDONESIA

#### 2.1 Introduction

In this chapter, e-money is mostly discussed, its types and growth in Indonesia particularly, a review of the previous studies about e-money and e-money mobile.

#### 2.2 Definition of E-money

Generally, E-money is defined as an innovative method of electronic transaction in payment processing which is a segment of e-commerce or electronic commerce. This innovative method thus is different from many other traditional payment systems. For example, e-money has replaced the non-cash payment methods such as bank deposits, cheques, transfer, or direct debit. It has also developed a new payment system for electronic transaction and security issue (BIS, 1999).

E-money is referred to money transaction where there is no physical cash involved with the third party (Kreltshheim, 1999). There are four main empirical studies focused primarily on the system of e-money. One of the most important systems related to e-money is the concept of stored value or prepaid product (Geva and Kianieff, 2002; Allen and Overy, 2005). Kreltshheim (1999) emphasized that e-money or sometimes called “e-cash” does not need the involvement of a third party in the transaction because it can be done directly. Merlonghi (2010) also stated that e-money has become a

new innovation, as it has changed the traditional financial transactions. The definition of e-money is presented in table 2.1 below, which are extracted from four empirical studies.

Table 2.1

*Empirical Studies on E-Money*

<b>Authors</b>	<b>Title</b>	<b>Type of source</b>	<b>Definition</b>
Kreltshheim (1999)	Identifying the proceeds of electronic money fraud	Australian Business Law Review	E-cash (E-money) is not “cash” in the same sense as physical cash, which can be transferred from hand-to-hand by a payer to a payee without the intermediary of a third party.
Geva and Kianieff (2002)	Reimagining E-Money: Its Conceptual Unity with other Retail Payment Systems	A Global Legal framework for E-Finance Presentation and book of International Financial and Economic Law.	The term “electronic money” or “e-money” is used to denote value paid in conjunction with a wide variety of electronic retail payment mechanisms, often described as “stored-value” products (“SVPs”).
Allen and Overy, (2005)	Commission consults on revision of the European electronic money Regime	Journal of Financial Regulation and Compliance	E-money products are stored value or prepaid products in which a record of the funds or value available to a consumer is stored on an electronic device.
Merlonghi (2010)	Fighting financial crime in the age of electronic money: opportunities and limitations	Journal of Money Laundering Control	The use of electronic money does not necessarily imply the systematic registration of information regarding the underlying transactions and the correspondent balances. Electronic money can also be spent outside the traditional financial circuits and service infrastructures.

Based on some previous studies defining e-money, it can be summarized that e-money is generally a prepaid product or stored value where the customer can store the fund or the monetary value in an electronic device. However, the procedure to top-up the balance of e-money may involve the direct purchase or third parties, issuer, and merchants in order to reduce the cost of the

transaction (processing fee). This explanation is also supported by Penn (2005) who highlighted that e-money product can be used for multiple payments purposes. However, it may pose more security risks in terms of credit risk and systemic risk, if the issuer becomes insolvent or fails to act properly.

### **2.3 Development of E-money in Indonesia**

The growth of electronic transaction affects the payment system and its transaction. Electronic money (E-money) has become a new implementation in the payment system in Indonesia. It is used to reduce the consumption of cash in payment transaction in terms of the micro transaction to retail transaction. Considering the consumers as the market target for a business transaction, it is, however, necessary to have E-money as a fast and easy tool to access financial service and the payment system.

According to the interconnection policy, the payment system infrastructure aims to facilitate communities in payment and funds transfer activities. With interconnected payment system, people can perform payment activities and transfer of funds through a variety of alternative infrastructures existing in the payment systems. In terms of industrial payment systems, interconnected infrastructure system will increase the efficiency of the national costs related to the investments in the administration for the payment system. It is easier for people to conduct transactions more quickly and efficiently through this payment system.

Technology facilitates the consumers with easy transaction experience. Electronic money (e-money) is one of the innovations and has become an alternative for online transactions that make customers feel easier to do their transactions (Al-Laham, Al-Tarawneh, & Abdallat, 2009). Electronic payment is becoming a substitute for physical currency and has become an alternative to the currency like other payment mechanisms such as credit cards (Seetharaman and John, 2009). As a financial innovation, electronic money (e-money) is not limited to only electronic payment systems, but can also be found in some other areas such as digital television boxes and Subscriber Identity Module (SIM) for mobile phones. Consequently, the emerging technology has moved e-money very fast forward (Gormez and Capie, 2000). In addition, e-money will create simplicity in the complex payment process, because this transaction happens almost instantaneously (White, 1996).

The innovation in a business transaction has become a new technology that strongly impacts on business activities (Stewart, 2013). In a business transaction, digital technology plays an important role as it influences the system in banking transaction (Fullenkamp and Nsouli, 2004). This has made a revolution to facilitate electronic transaction as a new type of instrument for payments that the customers can use by getting the information and communication of the system (Papadopoulos, 2007). It can solve the issues that appear due to the demand of cash as it can be substituted for cash, checks, credit/debit cards as current payment media or deposits and bonds as asset holdings, money supply, and the practice of monetary policy (Hancock and

Humphrey, 1998). The use of electronic transaction by the Bank for product and services approach is called electronic banking which helps consumers who previously had limited access to easier access (Basle Committee on Banking Supervision, 1998). However, Banking system will encounter problems, if they still adopt electronic Banking without adapting the latest innovation in the financial technology called electronic money (Solomon, 1999).

The effects become evident in the attitudes and behaviour, perceptions, preferences and purchase decisions of the consumers (Li & Zhang, 2002; Slyke, Comunale & Belanger, 2002; Mitchell & Walsh, 2004; Fischer & Arnold, 2004; Bakewell & Mitchell, 2006; Kwan, Yeung and Au, 2008). Besides that, security is one of the important issues that affect the consumer's decision in using e-money based transactions. Since e-money based transactions provide access to the account through a PIN or Password, they can be vulnerable to unauthorized access (Olalekan, 2011). The level of security in e-money transaction is very crucial since it can cause significant inconveniences for both the consumers and issuers.

Bank for International Settlements (2004) reported that the security system for electronic money launched in August 1996, was designed to protect unauthorized access by using a security code called Personal Identification Number (PIN). This not only protects the account from potential crime but also reserves the account holder's right to access e-money transactions using a PIN or PASSWORD (Olalekan, 2011).



### 2.3.1. Comparison of e-Money with other products for payment

E-money is defined as a stored-value or prepaid product which is different from credit/debit cards that mainly access products (Penn, 2005). The distinctions between prepaid and access products can be seen in Table 2.2 below.

Table 2.2

*Differences between prepaid and access products*

No	Differentiations	Prepaid products	Access product
1	Record	In the instrument or called stored-value	No record in the instrument
2	Authorization	Owner	Control by Bank
3	Transaction mode	Online/offline	Online
4	Time	Fast	Depends on internet connection and speed

Source: Hidayati et al. (2006)

The above table 2.2 shows that e-money is really different from access product. Bank Indonesia (2014) via e-mail emphasizes that e-money is specialized for micropayment that society in Indonesia prefers to use rather than physical cash. In such a way, it replaces cash transaction by digital/electronic transaction to promote a cash free society. However, many innovations on payment instruments are produced by some organizations and manipulated e-money transaction with similar functions. They are actually different in characteristic and technique for e-money in Indonesia.

Based on the recording method of money value in the electronic form, e-money can be classified into 2 types such as card-based product (chip based) and software-based product (now called server-based). BIS (Bank International Settlements) founded the e-money which has evolved into card-based product today (BIS, 1996). The card-based product is also called an electronic purse. The primary principle of this card is to be used for direct payment (face to face); however it can also be used for online payment by using an additional tool to connect to the computer user. This card based products are built with IC (integrated circuit) technology. IC cards can be classified into 2 categories such as smart card and memory card. The smart card has special functions for processing and saving data, whereas memory card can only save data. E-money product prefers to work with smart card technology. The smart card has 2 categories such as contact type and contactless type. In contact type, the card has to be inserted into a card reader, whereas in contactless type, the card only needs to be directed or moved close to the reader. Alternatively, e-money can be categorized based on two criteria; instrument and registration.

#### 1. Instrument

Instrument based category includes e-money that is chip based (money value is saved in the chip) and server based while money value is saved in the server (Bicara BI via email, 2014).

## 2. Registration

In registration category, e-money consists of unregistered (data holders are not administrated by the issuer, the holders are anonymous and value of money is a maximum of IDR 1 Million) and registered (data of holders are administrated by the issuer and value of money is a maximum of IDR 5 million) types.

On the other hand, it is required that the issuer gets license agreement according to Bank Indonesia Regulation No.11/12/PBI/2009-Electronic Money and Bank Indonesia Circular Letter No.11/11/DASP-Electronic Money. Furthermore, Bank Indonesia does not administer the number and name of merchants for top-up of e-money and some of them are topped-up by using ATM machine or by big merchants such as Indomaret and Alfamart. Besides, Bank Indonesia does not regulate the minimum balance of e-money, since all the settings are left for each issuer (Bicara BI via e-mail, 2014). There are differences between e-money and credit/debit card system as summarized as below.

Table 2.3

*Differences between e-money, credit card, and debit card*

No	Different	E-money	Credit card	Debit card
1	Interest	No interest charge on the value of the money saved	Is given interest refers to the interest of the savings	Is charged the interest in accordance with the arrangements in their respective publishers
2	Transaction charge	Should not be charged a transaction fee	Transaction fees can be given depending on the setting in each publisher	Transaction fees can be given depending on the setting in each publisher

Table 2.3 (Con't)

No	Different	E-money	Credit card	Debit card
3	Security system	Referring to the security system of each issuer	Referring to the security system of each issuer	Referring to the security system of each issuer

Source: Bicara BI via email (2014)

E-money transactions are primarily intended to be massive, micro and fast in order to target the market with all people who need payment instruments as mentioned above, both for conventional financing (face to face) and online shopping. However, the prospects of e-money 10 years from now, cannot be projected, but there is no policy regarding the elimination or prohibition of the use of e-money in Indonesia (Bicara BI via email, 2014). Several societies of Indonesians living in the islands has less access to the financial services. Therefore, the users for e-Money product-chip based are not growing widely, whereas the transactions are growing more in big cities and central market. However, CIA (Central Intelligence Agency) report reveals that the mobile telephone users will outnumber the total projected population in Indonesia in 2014. This gives more potential for e-Money product-server based to be accepted by the society equally distributed around Indonesia.

### 2.3.2 E-Money Mobile (Product-Server Based)

E-Money product-server based or e-money mobile is one type of e-money that is classified based on media. In this type, the user just needs to use a mobile phone and the mobile service provider will act as the medium to

save money value. Today, e-money mobile is more developed for some issuers to use it because it can be used for all people in Indonesia. The issuers for e-money mobile are not limited to the telecommunication company, but Banks and other financial services are also appropriate to be issuers as licensed by Bank Indonesia.

Table 2.4

*List of Electronic Money Operators Licensed By Bank Indonesia Bank and Non-Bank Institutions as Per January 2015*

No.	Electronic Money Operator	Head Office Address	Number/Date of License Mark	Operational Effective	Note
1.	PT. Artajasa Pembayaran Elektronis	Menara Thamrin 6 <sup>th</sup> Floor, Jl. M.H. Thamrin Kav. 3, Jakarta 10340	No. 14/327/DASP dated 9 Mei 2012	November 21 <sup>st</sup> . 2012	Issuer
2.	PT. Bank Central Asia Tbk	Menara BCA, Grand Indonesia, Jl. MH. Thamrin No. 1, Jakarta 10310	No. 11/424/DASP dated July 3 <sup>rd</sup> , 2009	July 3 <sup>rd</sup> , 2009	Issuer
3.	PT. Bank CIMB Niaga	Jl. Jend. Sudirman Kav. 58, Jakarta 12190	No. 15/119/DASP dated February 13 <sup>th</sup> . 2013	March 27 <sup>th</sup> . 2013	Issuer
4.	PT. Bank DKI	Jl. Ir. H. Juanda III No. 7-9, Jakarta 10120	No. 11/429/DASP dated July 3 <sup>rd</sup> 2009	July 3 <sup>rd</sup> 2009	Issuer
5.	PT. Bank Mandiri (Persero) Tbk	Plaza Mandiri, Jl. Jend. Gatot Subroto Kav. 36 – 38, Jakarta 12190	No. 11/434/DASP dated July 3 <sup>rd</sup> 2009	July 3 <sup>rd</sup> 2009	Issuer
6.	PT. Bank Mega Tbk	Menara Bank Mega, Jl. Kapten Tendean Kav. 12-14A, Mampang Prapatan, Jakarta 12790	No. 11/443/DASP dated July 3 <sup>rd</sup> 2009	July 3 <sup>rd</sup> 2009	Issuer
7.	PT. Bank Negara Indonesia (Persero) Tbk	Gedung BNI, Jl. Jend. Sudirman Kav. 1, Jakarta 10220	No. 11/438/DASP dated July 3 <sup>rd</sup> 2009	July 3 <sup>rd</sup> 2009	Issuer

Table 2.4 (Con't)

No.	Electronic Money Operator	Head Office Address	Number/Date of License Mark	Operational Effective	Note
8.	PT. Bank Nationalnobu	Nobu Center, Plaza Semanggi, Jl. Jend. Sudirman Kav 50, Jakarta 12930	No. 15/148/DASP dated February 26 <sup>th</sup> 2013	April 29 <sup>th</sup> 2013	Issuer
9.	PT. Bank Permata	Retail Liability and e-channel Permata bank Tower I, Jl. Jend. Sudirman Kav. 27, Jakarta	No. 15/26/DASP dated January 11 <sup>th</sup> 2013	January 23 <sup>th</sup> 2013	Issuer
10.	PT. Bank Rakyat Indonesia (Persero) Tbk	Jl. Jend. Sudirman No. 44-46, Jakarta 10210	No. 12/691/DASP dated August 13 <sup>th</sup> 2010	December 29 <sup>th</sup> 2010	Issuer
11.	PT. Finnet Indonesia	Menara Bidakara Lt. 21 Jl. Jend. Gatot Subroto Kav 71-73 Pancoran, Jakarta 12870	No. 14/277/DASP dated April 16 <sup>th</sup> 2012	June 1 <sup>st</sup> 2012	Issuer
12.	PT. Indosat, Tbk	Jl. Medan Merdeka Barat No. 21, Jakarta 10110	No. 11/513/DASP dated July 3 <sup>rd</sup> 2009	July 3 <sup>rd</sup> 2009	Issuer
13.	PT. Nusa Satu Inti Artha	Plaza Asia Office Park Unit 3, Jl. Jend. Sudirman Kav. 59, Jakarta 12190	No. 14/898/DASP dated December 20 <sup>th</sup> 2012	March 25 <sup>th</sup> 2013	Issuer
14.	PT. Skye Sab Indonesia	Saberro House Building Jl. Kemang Raya No. 10A, Jakarta Selatan 12730	No. 11/431/DASP dated July 3 <sup>rd</sup> 2009	July 3 <sup>rd</sup> 2009	Issuer
15.	PT. Telekomunikasi Indonesia	Jl. Japati No. 1 Bandung	No. 11/432/DASP dated July 3 <sup>rd</sup> 2009	July 3 <sup>rd</sup> 2009	Issuer
16.	PT. Telekomunikasi Seluler	Kantor Pusat, Wisma Mulia Mezzanine 19 <sup>th</sup> floor, Jl. Gatot Subroto No. 42, Jakarta 12710	No. 11/513/DASP dated July 3 <sup>rd</sup> 2009	3 July 2009	Issuer
17.	PT. XL Axiata, Tbk	Grha XL Jalan DR. Ide Anak Agung Gde Agung Lot E 4-7 No. 1	No. 12/816/DASP dated October 6 <sup>th</sup> 2010	March 29 <sup>th</sup> 2011	Issuer

Table 2.4 (Con't)

No.	Electronic Money Operator	Head Office Address	Number/Date of License Mark	Operational Effective	Note
18.	PT. Smartfren Telecom Tbk	Jl. H. Agus Salim No. 45, Menteng, Jakarta 10340	No. 16/85/DKSP dated May 26 <sup>th</sup> 2014	June 16 <sup>th</sup> 2014	Issuer
19.	PT. MVCommerce Indonesia	Cipinang Indah II Business Park, Jl. Rajawali Block BB No. 1, Jakarta 13430	No. 16/98/DKSP dated June 17 <sup>th</sup> 2014	September 29 <sup>th</sup> 2014	Issuer
20.	PT. Witami Tunai Mandiri	Jl. Taman Sari 8 No.27 Jakarta Barat 11150	No.16/129/DKSP dated July 18 <sup>th</sup> , 2014	January 5 <sup>th</sup> , 2015	Issuer

Source: Bank Indonesia, 2014

Bank Indonesia provides a license to e-money operators, which is increasing the issuers of e-money. The increase of e-money issuers is also creating good opportunity as business e-money is still emerging in Indonesia. Hence, the market share for business e-money penetration is still quite good, which can be the basis for the issuer to issue e-money (Bicara BI via email, 2014).

Referring to the growing e-Money issuers, the volume and value transaction of e-money from 2007-2013 have also been increased. It can be seen in Table 2.5 as follow:

Table 2.5

*E-money Transaction*

<b>Periods</b>	<b>Volume</b>	<b>Value</b>
2007	586,046	5,267
2008	2,560,591	76,675
2009	17,436,631	519,213
2010	26,541,982	693,467
2011	41,060,149	981,297
2012	100,623,916	1,971,550
2013	137,900,000	5,228,344

Value in IDR millions

Volume in number

Source: Bank Indonesia (2013)

Based on Table 2.5, it can be inferred that e-money transaction increased from 2009 until the end of 2013. The data shows that e-money has the potential to replace transaction by cash. It helps Bank Indonesia reduce the production of physical money. In addition, currency smuggling can be reduced by e-money transactions. On the other hand, e-money can encourage money laundering activities to a great scale as it facilitates such activities (Ping, 2004).

Table 2.6 below provides the names and types of different e-money issuers in Indonesia based on either product-chip or product-server.



Table 2.6

*List of product e-Money issuers and their type in Indonesia*

No	Issuers	Types	Products
1	B.P.D. DKI Jakarta	Chip based	Jak Card
2	Bank Central Asia Tbk	Chip-based	Flazz Card
3	Bank Mandiri (Persero) Tbk	Chip-based	Indomaret Card Gaz Card E-Toll
4	Bank Mega Tbk	Chip-based	Studio Pass Card Smart Card
5	Bank Negara Indonesia 1946 (Persero) Tbk	Chip-based	Java Jazz Card Kartuku
6	Bank Rakyat Indonesia	Chip-based	BRIZZI
7	PT. Indosat	Server based	Dometku
8	PT. Skye Sab Indonesia	Server based	Skye card
9	PT. Telekomunikasi Indonesia	Chip-based, Server based	Flex Cash i-Vas Card
10	PT. Telekomunikasi Selular	Server based	T-Cash
11	PT. XL Axiata	Server based	XL Tunai
12	PT. Finnet Indonesia	Server based	FinChannel
13	PT. Artajasa Pembayaran Elektronis	Server based	Mynt
14	Bank Permata Tbk	Server based	BBM Money
15	PT. Nusa Satu Inti Artha	Server based	DokuPay
16	PT. Bank CIMB Niaga	Server based	Rekening Ponsel
17	PT. Bank Nationalnobu	Server based	Nobu e-Money
18	PT. Smartfren Telecom Tbk	Server based	Uangku
19	PT. MVCommerce Indonesia	Server based	PonselPay
20	PT. Witami Tunai Mandiri	Server based	WitamiTunai

Source: Bicara BI via Email, 2014

The system for e-money has been developing in Indonesia since April 2007. There are two issues that issued e-money even before the operation was effective from 3 July 2009. It happened because the requirement to apply for a license at Bank Indonesia was launched later in 2009. Electronic money

issuer has reference to Bank Indonesia Regulation No.11/12/PBI/2009 regarding electronic money and Bank Indonesia Circular Letter No.11/11/DASP concerning Electronic Money issuer, principal, acquirer, clearing operator, and settlement (Bank Indonesia, 2013). The two pioneer issuer for e-Money is PT. Telekomunikasi Indonesia and PT. Telekomunikasi Seluler that launched e-Money product-server based (Bicara BI via e-mail, 2014).

The transactions from 2007 until 2013 have improved in terms of volume and value of e-Money. However, the data collection for those years did not happen or exist, since the issuer was not administered due to the structural change in Bank Indonesia which had responsibility for reporting e-Money. Figure 2.1 below depicts the volume of transaction of e-Money for chip based and server based from 2008 until 2012.

Figure 2.1 shows growth of e-Money product-chip based and e-Money product-server based, it can be concluded that e-Money product-server had made a significant increase from 2009 to 2012. It is shown that e-Money product-server based is user-friendly with easy access feature for the society in Indonesia. This condition is supported by the total number of mobile phone users in Indonesia which is more than the entire projected population.

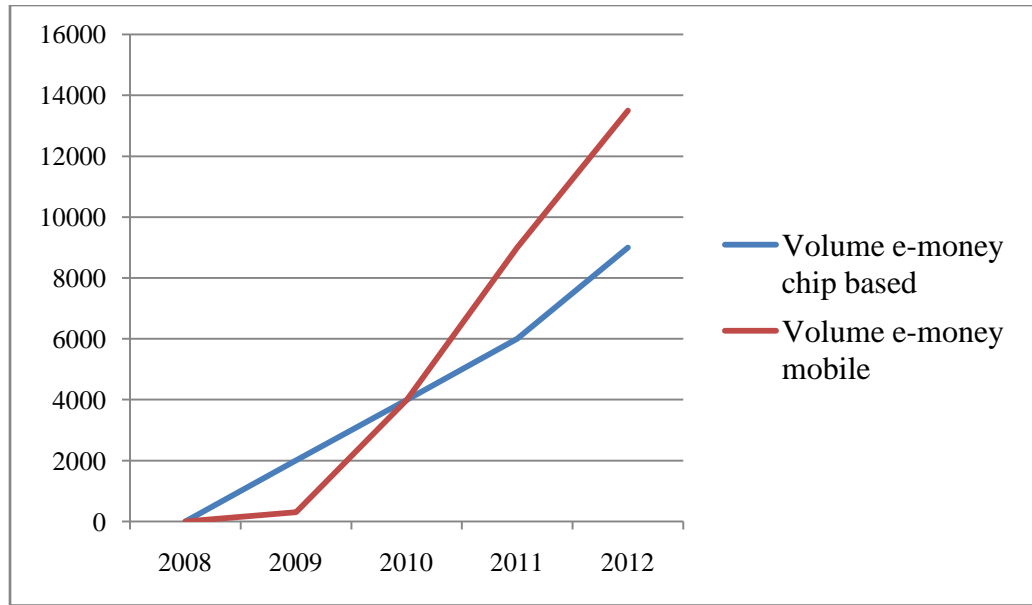


Figure 2.1  
*Growth of Electronic Money (chip based and server/mobile based)*

Source: Bank Indonesia (2012)

The CIA (Central Intelligence Agency) report lists and ranks the countries with highest mobile phone users as follow.

Table 2.7

*List countries of user telephones-mobile cellular*

Rank	Country	Telephones-mobile cellular	Date of information
1	China	1,100,000,000	2012
2	India	893,862,000	2013
3	United States	310,000,000	2012
4	Indonesia	281,960,000	2012
5	Russia	261,900,000	2012
6	Brazil	248,324,000	2012

Table 2.7 (Con't)

Rank	Country	Telephones-mobile cellular	Date of information
7	Japan	138,363,000	2011
8	Vietnam	134,066,000	2012
9	Pakistan	125,000,000	2013
10	Nigeria	112,780,000	2012

Source: CIA (Central Intelligence Agency, 2013)

This rank reveals that Indonesia is the third country in Asia and fourth country in the world in terms of highest mobile phone users until 2012. Ministry of communication and informatics (Menkominfo), Tifatul Sembiring, also added to this fact that there are approximately 270 million mobile phone users in Indonesia (ugm.ac.id, 2014). The total mobile phone users are higher in number than the total projected in Indonesia for the year 2014, which is approximately 244,814,900 people (datastatistik-Indonesia, 2014). Table 2.8 shows the projected population in Indonesia from 2011 to 2016 as follow.

Table 2.8

*Population Project Indonesia 2011-2015 (x 1000)*

Year	2011	2012	2013	2014	2015
<b>Total Population</b>	236,331.3	239,174.3	242,013.8	244,814.9	247,572.4

Source: Data Statistik Indonesia (2014)

## 2.4 Area of research related to e-money

E-money is a newly introduced payment system in Indonesia to improve the efficiency of retail payment as the economic infrastructure is developing to reduce the dependency on cash to promote a “cashless society”. The related research on e-Money even at the country level is still limited, whereas e-Money is growing the awareness of the society in Indonesia (Bank Indonesia, 2013).

However, lack of education has deterred the society from understanding and accepting the features and functionality of e-money based products. Bank Indonesia had conducted two surveys in 2011 and 2013. In 2013, the survey on e-money was conducted within the academic community at Universitas Indonesia (UI). The result showed that only 9% of the UI academic community responded spontaneously that they understand e-money as a means of payment (figure 2.3). This survey result in 2013 is in line with the BI survey which was conducted within 12 cities in 2011. This survey in 2011 revealed that only 1% of the population knew about the existence of e-money (Bank Indonesia, 2013). It can be seen figure 2.2 shows the survey results, which was conducted by Bank Indonesia in 2011 and 2013 as shown below.

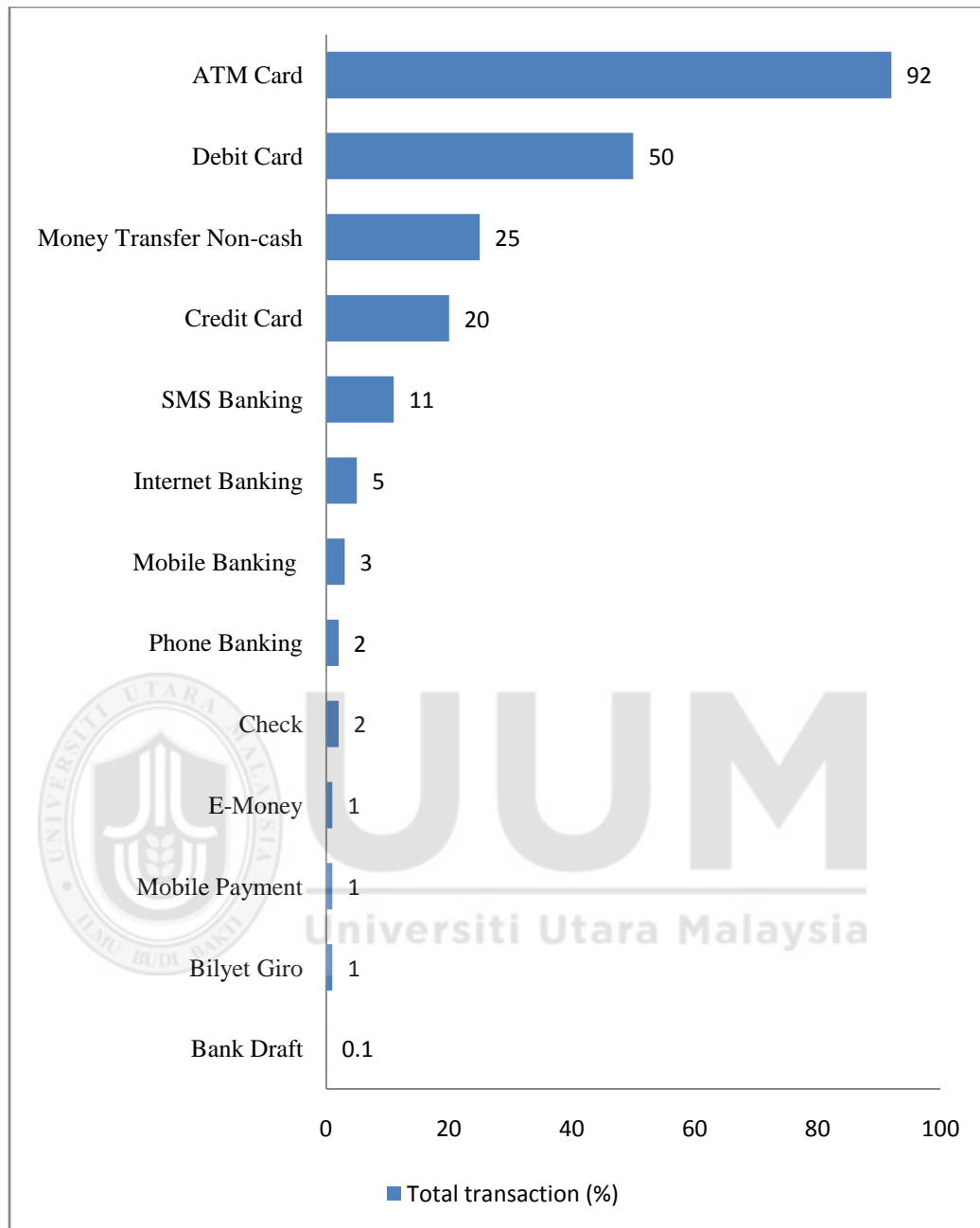


Figure 2.2  
*Survey of 12 cities conducted in 2011*  
 Source: Bank Indonesia (2013)

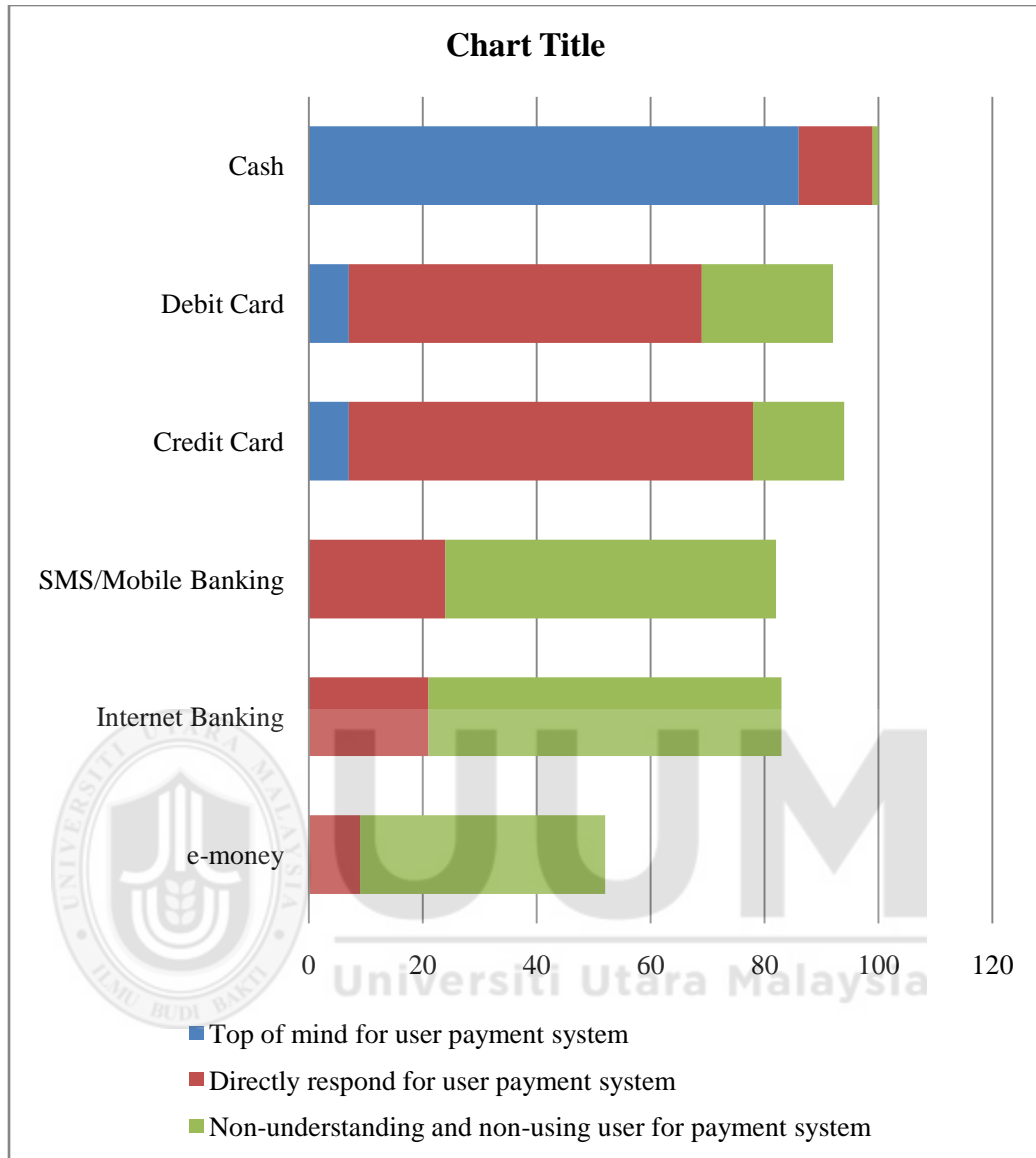


Figure 2.3

*Survey on academic community Universitas Indonesia (UI) in 2013*

Source: Bank Indonesia (2013)

The surveys that were conducted by Bank Indonesia are still in the general survey and a few studies have been done so far on mobile phone based e-money transaction. In regard to prior research discussing DTPB as the underpinning theory for the e-Money based mobile phone transaction, this

study also needs to adapt similar other research concepts such as mobile payment, mobile Banking, mobile commerce, Internet Banking, e-commerce, t-commerce, e-payment and social networking. All of them are subject to the strong theoretical framework, as they are the same area of applications related to this study.

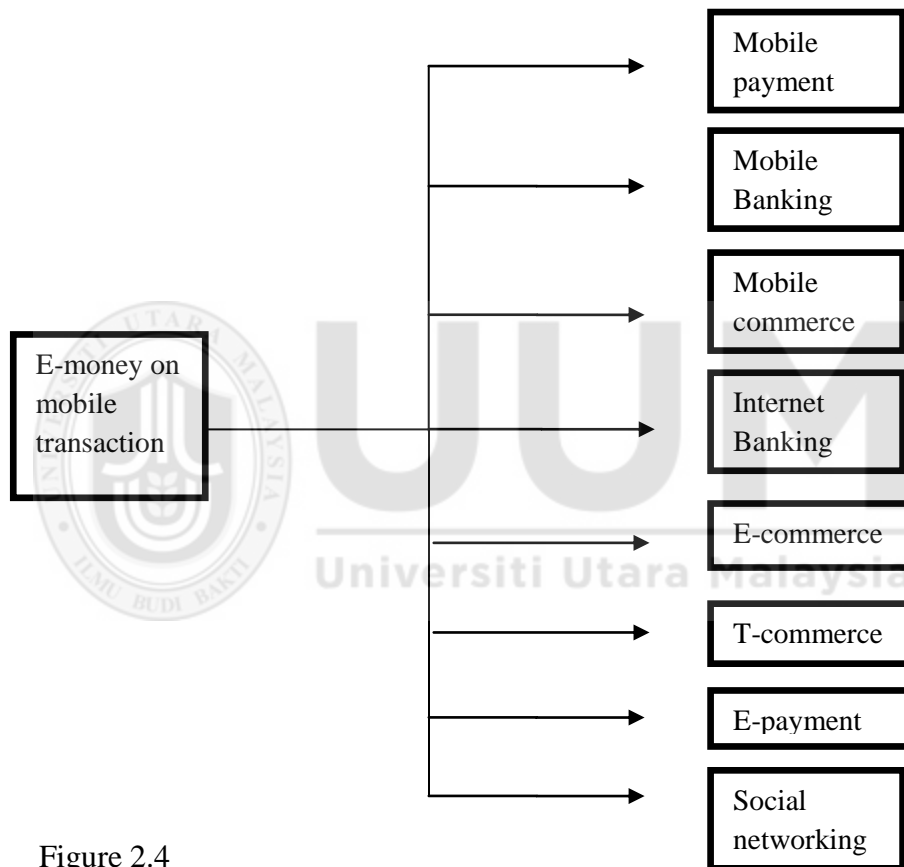


Figure 2.4

*Area related to the research*

The figure above reflects to what the previous studies have discussed about the theory of DTPB that is adapted to the study of mobile payment, mobile Banking, mobile commerce, Internet Banking, E-commerce, T-commerce, E-payment and social networking (Teo & Tan, 2000; Lim and



Dubinsky, 2005; Al-Muala, 2010; Pedersen & Nysveen, 2005; Almajali & Nik Mat, 2010; Chen, 2009; Lin, 2007; Fusilier & Durlabhji, 2005; Chu & Wu, 2005; George, 2004; Colman, 2002).

## **2.5 Summary**

This chapter explained about e-money, types of e-money and the comparison to other payment products. Area of research related to e-money is also explained. This chapter has reviewed the literature related to the study variables. The relationship between the study variables has been identified and discussed. The underpinning theories which explain all the variables are also discussed in this study. The theoretical framework of the study is formulated based on the Decomposed Theory of Planned Behaviour by Taylor and Todd (1995a), research problem as well as the review of the previous studies. Based on previous literature and the relationship among the constructs, this study eventually proposed the hypotheses.

## CHAPTER 3

### LITERATURE REVIEW

#### 3.1 Introduction

This chapter explains the underpinning theories which are the basis of this study and other related theories. Also, this literature intends to employ attitude as the antecedents (i.e. relative advantage, complexity), subjective norm (i.e. family, social culture influence), perceived behavioural control (i.e. self-confidence, resource facilitating condition), awareness, perceived risk and perceived security are discussed.

#### 3.2 Theoretical Underpinning Theory of E-money Mobile

##### 3.1.1 Decomposed Theory of Planned Behaviour (DTPB)

Decomposed Theory of Planned Behaviour (DTPB) was introduced by Taylor and Todd (1995a). This theory is continued in the study of e-filling tax in Taiwan to know the progress usefulness in the e-filling (Hsu & Chu, 2004). The digital inequality becomes the reason to utilize Decomposed of TPB. The issue found in e-money mobile is that the access proportion and acceptance user are equal. This is the strongest basis of psychology to explain the adoption needed to support the explanation. The theory is developed from two basic theories; Theory of reasoned action (TRA) (Fishbein & Ajzen, 1975) and Theory of planned behaviour (TPB) (Ajzen, 1991). The limitation TRA is that the behaviour is not under full

volitional control (Ajzen, 1985). The behaviour that is not consciously considered cannot be explained in TRA. Therefore, there is no provision in the model and it has less applicability (Shih & Fang, 2004; Wan et al., 2005). Meanwhile, the TPB model requires individual to be motivated to perform a certain behaviour. This assumption is kind of problematic in studying consumer behaviour (Taylor & Todd, 1995). Therefore, the Decomposed Theory of Planned Behaviour is the ideal grand theory for this study. It proposed the behavioural intention as the greatest predictor and is known as a product of these theories. Furthermore, it is also the extension of both the TRA and TPB that had been constructed and developed this theory by ensuring the detailed components. Taylor & Todd (1995), Ventakesh & Brown (2001) and Hsu & Chiu (2004) have broken or decomposed the TPB to describe the multidimensional. The importance of this theory brings the information of specific factors that influences technology acceptance. Besides, it also provides further managerial information that is useful for the decision maker. Decomposed of TPB had been separated into four blocks. The first block indicates the result of the behaviour. The second block describes the attitudinal belief structure. The third block showed the normative belief structure. And finally, the four blocks displays the behavioural control.

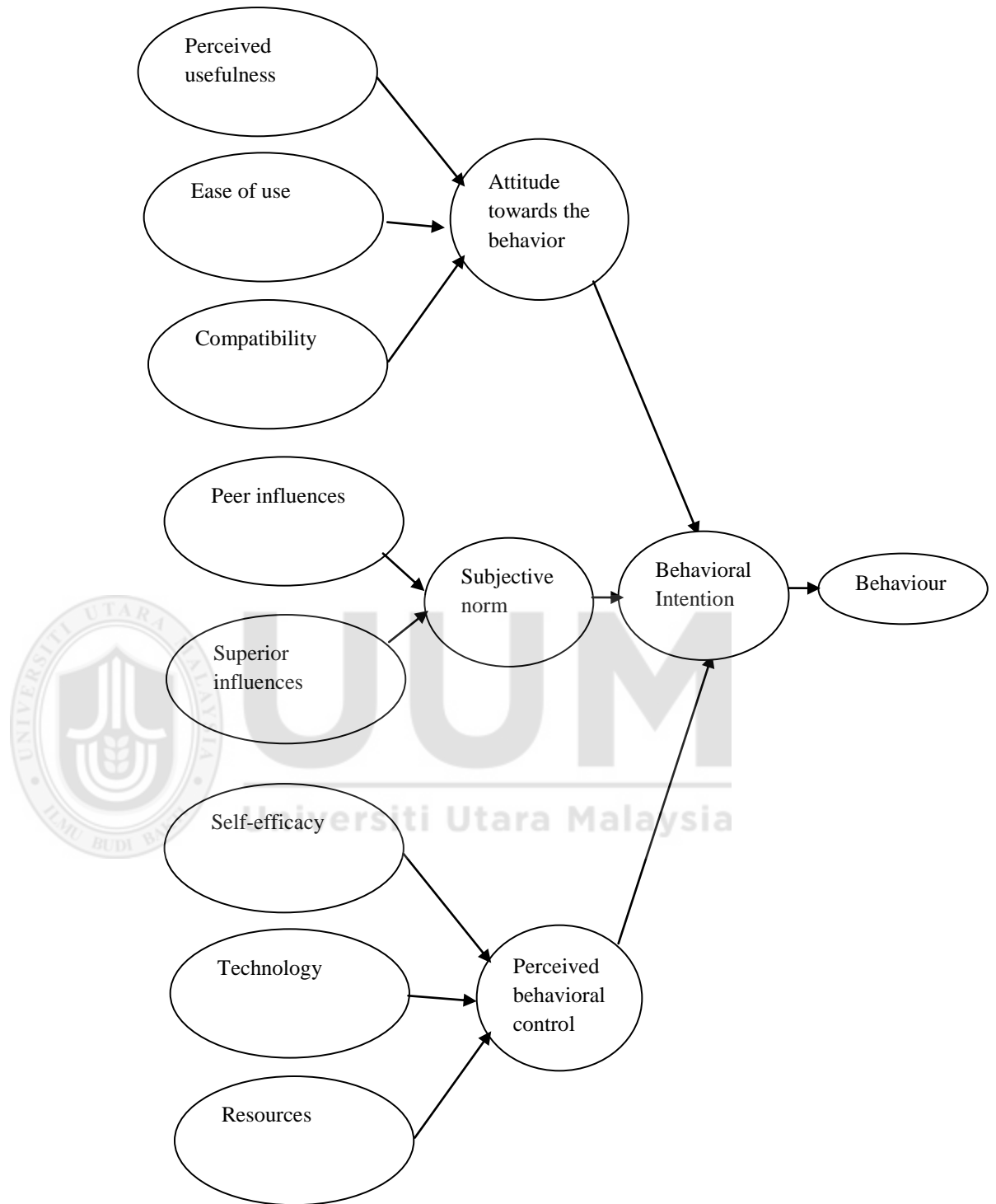


Figure 3.1

*Decomposed Theory of Planned Behavior (Taylor & Todd, 1995a)*

In figure 3.1 shown the attitudes is broken down into perceived usefulness or relative advantage, perceived ease of use or complexity, and compatibility while the subjective norms were equally penetrated to be peer's influence and superior's influence. Besides, perceived behavioural control is also broken down to be self-efficacy (self-confidence), resource facilitating conditions, and technology facilitation conditions (external control). This theory gives vivid detail and description of TPB. It investigates many elements and factors relating to behaviour. In a similar study, (Taylor and Todd, 1995c) in their empirical study investigated the decomposition of the TPB.

Several previous studies have used DTPB to investigate the adoption process of online trading within Hong Kong's brokers (Lau, 2002), to investigate the impact of internet banking adoption in Jordan (Al-Majali, 2010), to investigate the adoption of information technology (Chau and Hu, 2001) and much more. These shows that theory DTPB can be applied to many research backgrounds (Taylor and Todd 1995a, c). Therefore, the theory proposed attitude, subjective norm and perceived behavioural control to influence the intention to use a technology. Moreover, Taylor and Todd (1995a) extended them in decomposing variables to be attitudinal, normative, and perceived control beliefs in

constructs that were multi-dimensional. In conclusion, the DTPB is more precise and moderately increasing the behavioural intention than the theory of planned behaviour (Taylor & Todd, 1995a).

The DTPB was compared in two previous theories; TAM and TPB. They predicted information technology usage. These were used to investigate about 786 business students which used the computing resource centre for the purpose of technology. Taylor and Todd (1995a) also established that DTPB provided a better power of predictive while comparing between TAM and TPB. DTPB also explains the understanding of behavioural intention that had been a result in decomposing some variables; attitudinal, control, and social factors.

Furthermore, the hypothesis also investigated perceived usefulness that has a significant impact on attitude. Likewise, peer and superior significantly impact subjective norm, and lastly, self-efficacy and resource based facilitate conditions that are significant to perceive behavioural control. However the three variables namely attitude, subjective norm and perceived behavioural control have significant influence on behavioural intention. Another study used the same DTPB that was explored by Taylor and Todd (1995b) as a good power predictor to test variables; attitude and perceived behavioural control related to the TPB or the TRA. It discovered the use of

DTPB on consumer's intention to use VCR-Plus+™ to process and program a VCR for simplification which had similar results in the handled device.

In analysis paths, the hypothesis comes out with the results that show attitudinal decomposed factors; relative advantage, complexity, and compatibility which had a significant impact on attitude. Normative influence also has a significant impact on the subjective norm. For control variables which decompose factors; self-efficacy and facilitating conditions has a significant influence on perceived behavioural control. Lastly, attitude and subjective norm has a significant influence on intention but perceived behavioural control has no significant influence on intention.

Tan and Teo (2000) adapted the theory of DTPB by Taylor & Todd's (1995a) in factors to influence adoption of Internet banking in Singapore. The study discussed that attitude is decomposed by the relative advantage, complexity, trialability, compatibility (values, Internet experience, banking needs), and risk. Also stated that control variables are decomposed by self-efficacy, and facilitating conditions (availability of government support and availability of technology support) to the perceived behavioural control. The results showed that all attitudinal-decomposed factors except complexity and all control-decomposed factors except

availability of technology support have a significant influence on intention. However, the subjective norm has no significant influence on intention.

Table 3.1

*Previous studies related to DTPB and its variables*

Source	Influencing factors	Participants	Methodology
Liao et al (1999)	Attitude and perceived behavioral control	Staff in several companies in Hong Kong	Mail survey
Sathye (1999)	Security concerns, and awareness of service and its benefits	Personal (residents) and Business (firms) in major cities in Australia	Mail survey
Bhatteacherjee (2001)	Satisfaction and perceived usefulness	Online banking customers of one of the largest national banks in the U.S.	Online survey
Karjaluoto et al (2002)	Non-users: personal service. Non-users: banking expenses (cost), saves time (speed) and free from constraints of time and place (convenient). Old users: faster (speed), cheaper (cost), free from constraint of time and place (convenient), consistent standard of service (quality)	Consumers in Finland	Mail Questionnaire
Liao & Cheung (2002)	Accuracy, security, network speed, user-friendliness, user involvement and convenience	Web-users in Singapore	Survey
Ramayath et al (2002)	Security, availability of infrastructure, and complexity of technology	Individual in Malaysia	Personal Questionnaire
Suh & Han (2002)	Trust, attitude, perceived usefulness	Internet banking customers of five major banks in Korea	Online Survey
Gerrard & Cunningham (2003)	Convenience, complexity, PC proficient, compatibility, innovativeness	Adults employed in the downtown area in Singapore	Personal Questionnaire

Source: Nor, 2005



### **3.1.2 Supporting Theories Relates to Underpinning Theory**

The Decomposed Theory of Planned Behaviour (DTPB) developed comprises of various theories. The Theory Planned Behavioural (TPB) is one of the grand models that has been widely used to study the customer intentions and their behaviour (Al-Debei, 2013). Another theory that supports to examine consumers' intention to use e-Money in Indonesia is Theory of Acceptance Model (TAM). Fishbein and Ajzen, (1975); Ajzen and Fishbein (1980) as cited in Hernandez, et. al (2008) mentioned that Theory of Acceptance Model (TAM) is adapted by improvement of perceived usefulness and perceived ease of use which are the important factors that strongly influence the human behaviour that is adapted from Theory of Reasoned Action (TRA). There are many prior studies about TPB and TAM. The analysis of related research regarding the TPB and TAM is however shown in table 3.2 as follow.

Table 3.2

*Empirical TAM and TPB related studies*

Authors	Area	Behavioral Intention	Perceived Usefulness	Perceived Ease of Use	Attitude	Others
Jieun, Imsook, Munkee and Jaejeung (2005)	t-commerce	√	√	√	√	- Trust - Normative Belief - Subjective Norm
Yung & Jeff (2012)	mobile TV	√	√	√	√	- Subjective Norm
Hong-bumm, Taegoo and Sung (2009)	airline B2C e-Commerce	√	√	√	√	- e-trust - Subjective Norm
Hung (2004)	e-shopping	User Acceptance	√	√	√	- User Satisfaction - Perceived Information Quality - Perceived System Quality - Perceived Service Quality - Web Security and Access Costs
Se-Joon, James, and Kar (2006)	Mobile internet	Continued ITUsage Intention	√	√		- Satisfaction - Confirmation
Rachel, et. al (2013)	Online shopping behavior	√	√	√		- Cognitive involvement

Table 3.2 (Con't)

Authors	Area	Behavioral Intention	Perceived Usefulness	Perceived Ease of Use	Attitude	Others
Cheng, Lam, and Yeung (2006)	Internet banking	√	√	√	√	- Perceived Web Security
Nasri & Charfeddine (2012)	Internet Banking	√	√	√	√	- Security and privacy - Subjective norm - Self-efficacy - Government support - Technology support - Perceived behavioural control

Based on the table presented, there are three variables that are most considered to affect the e-money transaction; perceived usefulness, perceived ease of use and perceived behavioural control. Technology Acceptance Model (TAM) that is adapted in this study is basically an extension and adaptation of the theory of reasoned action (TRA) by Fishbein and Ajzen (1975). It was previously a model for user acceptance of information technology (Davis et al., 1989).

This model hypothesizes the consumers from perceived usefulness, perceived ease of use, and also an attitude to determine their effects on behavioural intention (Taylor and Todd, 1995). However, the application of this model in consumers' context is more appropriate to be the basis theory for the consumers' intention on e-money, while such study is primarily limited to e-commerce (Du et al., 2013), t-commerce (Yu et al.,

2005), mobile 3G, mobile chat services, mobile games (Ha et al, 2007; Kuo & Yen, 2009; Mark et al, 2009; Maneesoonthorn & Fortin, 2006; Nysveen et al., 2005), mobile Banking, (Gu et al , 2009), and many others. The TAM introduced by Davis (1986) is a theoretical framework to examine the user acceptance on new information technology (Nasri & Charfeddine, 2012).

Fishbein and Ajzen, (1975); Ajzen and Fishbein (1980) mentioned that TAM is adapted from Theory of Reasoned Action (TRA) by improving perceived usefulness and perceived ease of use as the important factors that strongly influence the human behaviour. Thus, TAM is a more powerful predictor of user acceptance of IT (Ventakesh, 1999). TAM is also extended to TAM-2 (Ventakesh & Davis, 2000) and TAM-3 (Ventakesh et al, 2008). In this study, the perceived usefulness and perceived ease of use are used as factors to evaluate the effect on consumers' intention to use e-Money in Indonesia.

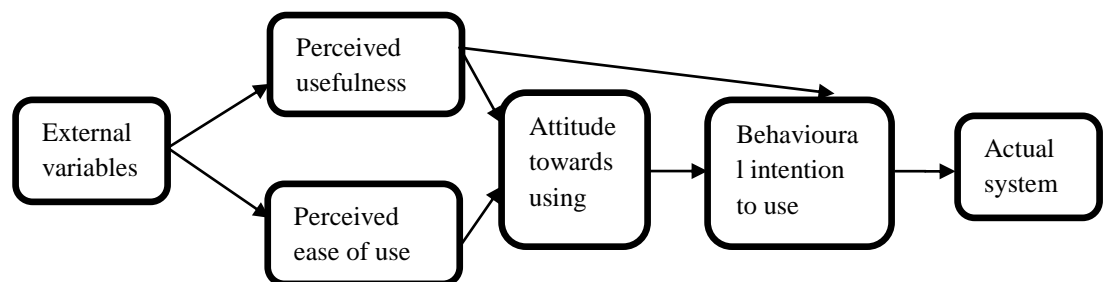


Figure 3.2

*Technology Acceptance Model (TAM)*

*Source: Davis et al (1989)*

Some of the results related to these studies on behavioural intention and the antecedents regarding TAM are shown in table 3.3 as follows.

Table 3.3

*Empirical TAM studies*

Authors	Area	Behavioural Intention	Perceived Usefulness	Perceived Ease of Use	Attitude	Others
Jieun, Imsook, Munkee and Jaejeung (2005)	t-commerce	√	√	√	√	- Trust - Normative Believe - Subjective Norm
Yung & Jeff (2012)	mobile TV	√	√	√	√	- Subjective Norm
Hong-bumm, Taegoo and Sung (2009)	airline B2C e-Commerce	√	√	√	√	- e-trust - Subjective Norm
Rachel, et. al (2013)	Online shopping behavior	√	√	√	√	- Cognitive involvement
Cheng, Lam, and Yeung (2006)	Internet banking	√	√	√	√	- Perceived Web Security

Otherwise, social influence, a basic variable in Unified Theory of Acceptance and Use of Technology (UTAUT), is also an extension of TAM and was developed by Ventakesh et al. (2003). The unified theory of acceptance and use of technology (UTAUT) are two new recent instruments that consist of theory of reasoned action (TRA), technology acceptance model (TAM), motivational model (MM), model of PC

utilization (MPCU), theory planned behavior (TPB/DTPB), combined TAM and TPB (C-TAM-TPB), social cognitive theory (SCT), and innovation diffusion theory (IDT).

In UTAUT, there are also four constructs which are a significant determinant of the user acceptance and usage behaviour. These constructs are performance expectancy, effort expectancy, social influence, and facilitating conditions. Also, there are three other constructs such as attitude towards using technology, self-efficacy, and anxiety that are not direct determinants of intention. It also uses three moderators, namely age, gender, experience and voluntariness of use (Ventakesh et al., 2003). The social influence is selected as another variable that affects the consumers' intention on e-money in Indonesia where diversity in the cultural and social environment makes it more appropriate for this study. Table 3.4 illustrates TAM and its extended models below.

Table 3.4

*TAM and its extended models*

No	TAM (Davis, 1989)	TAM-2 (Ventakesh & Davis, 2000)	TAM-3 (Ventakesh et al, 2008)	UTAUT (Ventakesh et al (2003)
1	Actual system used	Actual used	Use behavior	Actual used
2	Attitude towards using	Behavioural intention	Behaviour intention	Behaviour intention
3	Perceived usefulness	Perceived usefulness	Perceived usefulness	Performance expectancy
4	Perceived ease of use	Perceived ease of use	Perceived ease of use	Effort expectancy
5	-	Subjective norm	Subjective norm	Social influence
6	-	Image	Image	Facilitating conditions
7	-	Job relevance	Job relevance	Gender
8	-	Output quality	Output quality	Age
9	-	Results demonstrability	Results demonstrability	Experience
10	-		Computer self-efficacy	Voluntariness
11	-		Perception of external control	
12	-		Computer anxiety	
13	-		Computer playfulness	
14	-	-	Perceived enjoyment	-
15	-	-	Objective usability	-
16	-	-	Experience	-
17	-	-	Voluntariness	-
18	-	-	Perceived enjoyment	-
19	-	-	Objective usability	-
20	-	-	Experience	-
21	-	-	Voluntariness	-

Source: Shafinah et al (2013)

Other relevant factors that can influence consumers' intention on e-money in Indonesia are perceived risk and perceived security. In perceived risk, there is some dimensions or facet perceived risks that are adapted from previous research by Feathermen & Pavlou (2003). However, perceived security has been adapted by many authors (Rasmus & Peter, 2011; Nysveen, Pedersen, & Thorbjørnsen, 2005; Schierz, Schilke, & Wirtz, 2010; Chen, 2008).

### **3.2 Behavioral Intention**

Behavioral intention reflects the possibility of adopted action of an individual consumer to a specific objective (Ajzen & Driver, 1992; Sheeran & Orbell, 1999; Armitage & Corner, 2001; Ling, Wang & Hwang, 2010). The specific objective measures how the consumers will use the system in future, recommend to their relatives, promote it, and make contacts between two parties in the future transaction. Behavioral intentions describe how a person behave in a specified way (McKnight, Choudhury, & Kacmar, 2002; Casaló et al., 2010).

The behavioral intention has been discussed in earlier research regarding payment system and other technology acceptance, but the behavioral intention about e-money mobile is less studied in previous research. Adaptation from related area to e-money mobile is used to investigate the consumers' intention to use e-money mobile in Indonesia. The two prior factors, introduced by Davis (1989) to measure consumers' intention to use are, perceived usefulness and perceived ease of use. These factors do not fully explain behavioral intention.

Previous studies modified and added some more factors that are appropriate for the study under investigation (Al-Fahim, 2012). Many previous studies discussed potential users on behavioral intentions, where the potential users had their behavioral intentions to access a technology



or a new system (King and He, 2006) example; Tourists and Travelers (Casaló et al., 2010), facebook users (Lee et al., 2012).

In payment system, behavioral intention suggests that the Internet Banking is a major banking method and a potentially popular medium in electronic commerce (Crede, 1995; Ooi, 1999; Nasri & Charfeddine, 2012). It facilitates the customers by providing instant access to their accounts, which eliminates associated time and cost for visiting a bank in person (Martin & Ambrosio, 2003). Previous studies discussed on non-banks has financial markets that offer financial products and services which are being followed by many banks to adopt Internet banking (Mols, 1998; Sathye, 1999; Nasri & Charfeddine, 2012). A similar condition was revealed in a study where e-money mobile payment system is not only limited to the Banks but also driven by non-Banks such as telecommunications companies and retail companies (Bank Indonesia, 2013).

Following the above discussions, behavioral intention is an important concept that is already applied in many sectors to forecast consumers' intention to use a technological product and it has been proven successful in predicting the behaviour of accepting a new technology (Nasri & Charfeddine, 2012; Glass & Li, 2010; Chau and Hu, 2001; Gefen, 2000; Gefen & Straub, 2000; Igarria, Iivari, & Maragahh, 1995; Szajna, 1994). Behavioural and environmental factors also influence consumers'

intention to do the transaction, where the initial intentions typically complete valuable information exchange and confident expectations (Al-Gahtani, 2010; Hoyer and MacInnis, 2001).

Some studies investigated the intention to use the system of technology influenced by many factors/ antecedents and its applications (Kim, Kim, & Shin, 2009; Casaló et al., 2010) such as Internet adoption (Nasri, & Charfeddine, 2012; Moon & Kim, 2001), e-commerce acceptance (Hong-bumm, Taegoo and Sung, 2009; Gefen & Straub, 2000), travel sector and hospitality organizations (Casaló et al., 2010; Kim, Lee, & Law, 2008), instant messaging adoption (Glass & Li, 2010), on-line games (Hsu & Lu, 2004) and many others.

An earlier study on mobile payment discussed behavioral intentions of potential users. Schierz et al. (2010) conducted a study on mobile payment and consumer acceptance of mobile payment services. The data was collected with representative samples of 1447 Germany respondents who were able to use mobile applications. The result that was analyzed by using structural equation modeling software EQS showed that the degree to the mobile payment is reconcilable in existing values, behavioral formulations. It is experiences made the greatest impact on the intention to use mobile payment services. Thus, behavioral patterns really need to be considered for the people in adopting mobile payment services.

A study on mobile services acceptance conducted on a sample of 542 Dutch consumers by Lo'pez-Nicola's et al.(2008) found that behavioural

intention is subject to the advancement in 3G-related technologies. Another interesting discussion places the behavioral intention in the context of the airline industry that was conducted by Kim et al. (2009). This study explored that the consumers are capable of regulating their purchase intention based on other individuals' negativism or positivism to the website transactions, because the online consumers have expectations from the online seller in terms of willingness and capability for the reacting to the consumers' interests and honesty in the transactions when promised to deliver goods and/or services.

Chong et al. (2012) focused on the mobile commerce from a different perspective. They investigated the factors that can predict consumers' intention to adopt mobile commerce and compared them in two countries; Malaysia and China based on two different cultural settings with a total sample of 172 Malaysian and 222 Chinese consumers.

### **3.3 Decomposed of Attitudinal**

Ajzen (1991) defines that attitude toward the behavior reflects the extent that people have favorable or unfavorable evaluation or assessment of the behavior question. Attitude explored that the beliefs about certain behaviors to adopt an innovation come from individual beliefs that adopt the innovations and can lead to certain consequences (Ajzen & Fishbein, 1980). This indicates a positive or negative evaluation of individuals of conduct behavior. Ajzen (1991) recommends that attitude is a kind of beliefs about the behavior and

individual evaluation that is a result generated from that behavior. This refers to the theory of planned behavior, if an individual has more favorable attitudes toward a particular behavior, he will more likely intend to perform his behavior (Ajzen and Fishbein, 1980). On the other hand, for unfavorable attitudes of individuals towards a particular behavior, he will likely not intend to perform his behavior.

Intention to behavior's performance might occur if the individual has a positive evaluation of performance behavior. In other of the word, the more favorable an attitude is towards a particular behavior, the stronger the intention of the individual to adopt behaviors. Many studies have been carried out on the influence of attitude on intention to use the information technology. A study on the acceptance for reception word processing program by Davis et al. (1989) showed that attitudes have a significant influence on behavioral intentions. Mathieson (1991) found that the intention using a spreadsheet can be predicted by respondent's attitude towards it. The comparisons of TRA, TPB and DTPB, Taylor and Todd (1995a) showed that attitudes toward the center of computing resources positively affect the user's intention to use it.

Another study, the IT acceptance among senior executives of small businesses, Harrison et al. (1997) showed that attitudes toward IT positively affects the intention to adopt the technology. The positive

impact of attitude on intention was found in the study presented by Hu and Chau (1999) and Chang and Cheung (2001) about the acceptance of telemedicine and the World Wide Web, influence attitudes toward intention were also validated in internet banking domain. Liao et al. (1999) stated that the attitude in using Internet banking by customers significantly affect the intention to adopt the technology. Furthermore, Suh and Han (2002) found that online survey on Internet banking customers from five major banks in Korea come out with similar results.

Ajzen and Fishbein (1980) explained that attitude toward any concept is simply a person's general feeling of favorableness or unfavorableness for that concept. In the context of top management support, general managers are expected to have an uttermost feeling of favorableness or unfavorableness to support the information given. The project's technology will be greatly influenced by the organisational benefits of the project. Unlike other members of the organization, top manager is responsible and accountable for the overall success of the organization (Sanders and Carpenter, 2003), and compensation and incentives package of top managers are often tied directly to a great level of organization's objectives achieved (Gupta and Bailey, 2001). Therefore, top managers are expected to have the most favorable attitude towards projects that offers significant benefits to the organization.

Organizational benefits in the information technology projects serve as a base to decompose the attitude of a top manager to support specific projects (Mirani and Lederer, 1998). The benefits of information technology projects are classified as a strategic, transactional, or information, with a project that has the potential to offer a wide range of benefits (Weill, 1992; Turner and Lucas, 1985; Mirani and Lederer, 1998). Therefore, four special constructions: transactional benefits, strategic benefits, self-righteousness, and benefits information describe the effects of attitude towards the behavior.

Another study discussed in the Virtual World (VW) is used to realize various functions and activities that take advantage of extrinsic and intrinsic motivation to contribute to attitudes towards the use of this system (Verhagen, Feldberg, van den Hooff, Meents, & Merikivi, 2012). This system is assimilation as predictors are continually used in the theory of reasoned action with the use of variables; ease of use, attitude, social presence, playful, self-interference (Schwarz et al., 2012).

It allows us to pursue a theory-based on the decomposition of attitudes, control system and social influence. It investigates its influence on intentions to continue to use (Hsieh, Rai, & Keil, 2008; Pavlou & Fygenson, 2006; Taylor & Todd, 1995a, 1995b). It was

later improved by Shin (2009) and Schwarz et al. (2012) that there is a positive correlation between attitudes and behavioral intentions in Virtual Worlds.

The study in the relationship between attitudes and behavioral intentions has been discussed widely in many others areas, such as IT adoption, sociology, social psychology, and information systems. Also, the models of the variables that have were developed to examine the relationship between attitudes and behavioral intention are positive. In addition, the concept of attitude has received significant attention in the in the area of IT adoption and are frequently applied and used to describe or examine the IT adoption (Benbasat & Barki, 2007; Wixom & Todd, 2005).

Attitude has been tested in many theory and it becomes the key construct of some theories; theory of reasoned action (TRA), theory of planned behavior (TPB), technology acceptance model (TAM), and decomposed theory of planned behavior (DTPB) the unified theory of acceptance and use of technology (Ajzen, 1991; Davis, 1989; Fishbein & Ajzen, 1975; Taylor & Todd, 1995a, 1995b; Venkatesh et al.,2003). Therefore, attitude showed that the individual has positive or negative feelings towards his or her behaviour which affects his intention in performing the behavior (Fishbein & Ajzen, 1975; Fishbein, et al, 1980).

Unlike in IT adoption, some studies that examined the attitudes in the adoption of Internet banking showed that the relationship between them have positive influence towards internet banking services that reflects that there is a strong intention to adopt Internet banking services (Liao and Cheung, 2008; Nor & Pearson, 2008; Sukkar & Hasan, 2005). It has also been decomposed in such multidimensional confidence of the adoption of IT in the past two decades (Karahanna, Straub, & Chervany, 1999; Moore & Benbasat, 1991; Taylor & Todd, 1995a, 1995b).

### **3.3.1 Relative Advantage**

Relative advantage refers to the degree to which an innovation is perceived as providing more benefits than its predecessor (More & Benbasat, 1991). Relative advantage is analogous to the perceived usefulness (Davis, 1989; Taylor and Todd, 1995b; Davis, 1989). Perceived usefulness is defined as “the degree to which a person believes that using a particular system would enhance his or her job performance” (Davis, 1989). Perceived usefulness allows the user believe that the existing technology can yield positive relation of user performance. It can be a better factor to predict the consumer’s acceptance of the technology and can affect the behavior of information usage (Lin et. al, 2010; Al-Fahim, 2012). It implied that the construct perceived relative



advantage present is intuitive than the perceived benefits (Jeyaraj, Rottman, and Lacity, 2006; Taylor and Todd's, 1995a, 1995b). Many of the previous studies have tested perceived usefulness on consumers' acceptance to use a new technology on many variables. It has been reported that perceived usefulness supports and positively influence the intention to use online banking (Lee, 2009). In another study, the perceived usefulness has been found to have a positive and direct effect on the adoption of Internet Banking (Al-Fahim, 2012). Perceived usefulness has also been discussed in the acceptance of mobile TV in two countries: Korea and United States, considering the cross culture effect with the various position of factors. The effect of perceived usefulness was supported by an independent individual only in Korea, but rejected in United States. That is, perceived usefulness has a higher effect on the attitude in Korea than in the United States, however, perceived usefulness and purchase intention were not significant in Korea (Choi & Totten, 2012).

Another discussion on mobile commerce and mobile Internet stated that perceived usefulness is one of the five most important predictors of consumer's decision to adopt an IT technology and an important factor to determine its influence on the consumers is mobile commerce or the activities of mobile Internet (Jeyaraj et

al. 2006; Hsu and Lu 2004; Lu et al. 2005; Chong et al. 2010; Wei et al. 2009).

An earlier research on cross culture investigated the influence of perceived usefulness on Malaysian consumers and Chinese consumers (Chong et al., 2012). Although, most of the previous studies have confirmed positive influence of perceived usefulness on online purchase intentions (Chiu et al., 2005a, 2005b; Cheong & Park, 2005), such influence on behavioral intention has also been marked by some inconsistencies in some studies (Gentry & Calantone, 2002; Tsang et al, 2004). This necessitates further investigation and discussion as intended in this study with a view to examining the impact of perceived usefulness on potential consumers' intention to use e-money mobile.

Taylor & Todd (1995) in Yu, Ha, Choi & Rho (2005) mention that perceived usefulness is the strongest antecedent/ predictor of intention for the users who are unaware of the technology (inexperienced users) unlike the potential users (experienced), as prior experience or actual users result in less weight on perceived usefulness. Table 3.5 discusses the impact of perceived usefulness from previous studies.

Table 3.5

*Previous study on perceived usefulness*

<b>Researcher</b>	<b>Topic</b>	<b>Respondents</b>
Igbaria, Guimaraes & Davis (1995)	Micro computer	214 MBA
Iqbaria, Zinatelli, Cragg & Cavaye (1997)	Personal computing	358 user in small firms
Hsu & Lu (2004)	Online game	233 users
Gefen et al. (2003)	Online shopping	179 students
Wu & Wang (2005)	m-commerce	310 users
Tero et al. (1999)	WWW	1370 users
Liao, Shao, Wang & Chen (1999)	I-Banking	232 Web user

Source: Gu, Lee and Suh (2009)

**3.3.2**

**Complexity**

Complexity refers to the degree to which an innovation is considered relatively difficult to understand and use (Taylor & Todd, 1995). It is analogous to the consequences of perceived usefulness (Davis, 1989). Complexity is the corollary “ease of use” variables in TAM (Taylor and Todd, 1995b; Davis, 1989). It represents the degree to which an innovation is perceived to be difficult to understand, learn or operate. Besides, it also becomes innovative technologies that are perceived to be easier to use and less complex has a higher possibility of acceptance and use by potential users. Therefore, the complexity would be expected to have a negative relationship with attitude.

Complexity (and its corollary, ease of use) has been found to be an important factor in the technology adoption decision (Davis et al., 1989). However, perceived ease of use is defined as “the degree to which a person believes that using a particular system would be free of effort” (Davis, 1989).

Perceived ease of use describes how the users avoid a system considering the difficulty level and performance out of their effort while using the system. In perceived ease of use, a person’s acceptance of using the systems is proved by the free of the effort of the system (Davis et.al, 1989; Ventakesh, 2000). It has been proposed as one of the variables in technology acceptance model (TAM) that has been proved in many of the previous studies. Along with another variable, perceived usefulness, it has become key indicators affecting behavioral intention. Therefore, these two variables may not be fully analyzed for the behavioral intention, especially in most of the previous research discussing on acceptance of internet Banking.

In a study of Internet banking adoption, perceived ease of use has been used in much complete understanding and has been identified of the intentions of the adoption of internet banking (Nor & Pearson, 2008). Complexity is considered to be set of determinants construct because the perceived ease of use (PEOU)

on TAM is analogous to attribute complexity in IDT (Moore & Benbasat, 1991; Taylor & Todd, 1995a, 1995b).

The perceived ease of use assesses the consumers at the individual level to learn how they can apply the system effectively by taking greater advantages for their access (Du, Lu, Wu, Li & Li, 2013). The perceived ease of use describes that the system will be easily operated by the consumers. This concept evaluates how the consumers go through the system to operate it conveniently and understand the contents easily and quickly (Lin, Wang & Huang, 2010).

There are a few studies that found the effect of perceived ease of use on the technology acceptance in e-commerce Gefen and Straub (2000), on consumer use of the Internet Moon and Kim (2001). Venkatesh & Davis (2000) found that perceived ease of use had a direct effect on user acceptance of IT with a positive relationship, but there was no consistent result regarding the effect of perceived ease of use on IT (Shih, 2004).

The direct relationship on behavioral intention can be adapted from the findings in mobile Banking (Gu et al., 2009) that had predicted a positive effect of perceived ease of use on the behavioral intention of mobile Banking. Besides, perceived ease of use has been a dimension for innovation attributes that

examines an individual's (non-adopters) intention to adopt or continue the use of innovations (Sun & Jeyaraj, 2013). This study was conducted among the student at a Chinese University where the questionnaire was distributed and collected in three rounds. The result showed perceived ease of use as one of the dimensions for innovation attributes that was not significant. This means that the perceived ease of use affects the individual's (non-adopters) intention to adopt the innovation.

Other works compared the consumers' intention in different countries. Smith et al. (2013) investigated perceived ease of use on behavioral intention to use online shopping among the consumers in the United States, Germany, and Norway. In this work, the relationship or effect of perceived ease of use on behavioral intention to use online shopping was only supported by the consumers in the United States, not by the consumers in Germany and Norway. This result indicates that although perceived ease of use has been tested in many of the previous studies, relationship or effect of perceived ease of use on behavioral intention still remains inconsistent and arguably. Table 3.6 demonstrates some of the results from the previous studies on perceived ease of use.

Table 3.6

*Previous study on complexity and perceived ease of use*

<b>Researcher</b>	<b>Topic</b>	<b>Variable</b>
Riemenschneider et. al. (2003)	IT adoption decisions in small business	Complexity
Stockdale & Standing (2006)	SME e-commerce adoption initiatives	Complexity
Chang and Cheung (2001).	Determinants of the intention to use Internet/WWW at work	Complexity
Iqbaria, Zinatelli, Cragg & Cavaye (1997)	Personal computing	Perceived ease of use
Iqbaria, Guimaraes & Davis (1995)	Micro computer	Perceived ease of use
Suh & Han (2002)	I-Banking	Perceived ease of use

Source: Gu, Lee and Suh (2009)

### 3.4 Awareness

Awareness is the critical step for adopting new technology because it needs the consumers understanding to explore about products or services with their knowledge to avoid lack of information (Kotler et. al., 2004). It is the first step for the consumer to accept or reject an innovation (Rogers and Shoemaker, 1971 in Sathye, 1991).

The awareness reflects the individual the satisfaction associated with the product or service from problems that may arise due to less information relating to them (Walter, 1998). So, it is important for the consumers to know about the product or service that is offered to them

(Aminudin, 1999) because the process of making the consumers familiar with the information about the product or service is beneficial for future competition with the company. It can be from advertising, promotion and uniqueness (Shimp (1997), or some ways can be from recommendation, mass media (Asseal, 1995). For example, awareness of banking customers about products or services is very important to increase the benefit of industry and it can be some alternative that the industry offering to them (Sharon, 1999).

Another setting can be seen in the telecommunications industry where awareness on mobile devices is such an opportunity to make customers get more knowledge (Pousttchi, 2006; Nysveen et.al. 2005; Norris, 2007) for example from promotion (Lewison, 1996). Awareness had been tested in various backgrounds of studies. However, there is limited previous studied that tested awareness on consumers intention to use e-money product server based is mediated by perceived usefulness. Safeena et al (2010) discovered the consumer awareness on university student showed a positive impact on the intention to adopt internet banking.

Some studies discussed awareness of service in various setting. Sathye (1999) proposed awareness of service for Internet banking (IB) adoption in Australia and argued that awareness of service and its benefits has a significant influence on the intention of Internet banking



(IB). He also emphasized that the most relevant customer in the rapidly developed market of Internet Banking (IB) are the young, educated, and wealthy groups of customers. Some studies also discussed in different countries such as Tukey and Malaysia.

According to Polatoglu and Ekin (2001), the awareness level among consumers is the greater factor for more banks in Turkey that offer for Internet banking service that had been the higher number in Internet banking adoption. However in Malaysia, the actual use of consumers was only 23% have had some Internet banking experience even though the awareness level is high. As the result, Banks is necessary to create an advertising to attract the consumers on usefulness and ease of use on the website of Internet banking so that, they have an awareness of the products (Ramayah et. al, 2003). Furthermore, there is a surprising degree of lack of awareness among these customers in the UK with just a few users want to open their Internet accounts. The reason comes on surprising statistic on Banks that just only found 12 banks that offering on Internet banking service where this is less than 10 percent of banks that exist in the UK. (Jayawardhena & Foley, 2000).

### **3.5 Decomposed Subjective Norm**

Subjective norm is defined as the perception of the individual if the important he thinks that he should or should not do the relevant behavior (Fishbein & Ajzen, 1975). It is trusted that it is used to determine a set of normative beliefs that is accessible of expectations regarding important

reference (Ajzen, 1991). Besides, it is a function of how consumers with others references such family and friends see the behavior and are motivated to fulfill the conviction (Lim and Dubinsky, 2005).

Some meta-analysis has been deal with TRA, TAM, TPB, DTPB. Even though, subjective norms are weak predictors of behavior intentions (Armitage and Conner, 2001), but intention can be enhanced and influenced by only an identification of the attitude that means the subjective norm and their relative importance for many practical purposes such the effect of these norms on online shopping behavior (Ajzen,1991). Therefore, it represents the social influences on behavior that explored the perception individual's believe can perform a particular behavior (Fishbein & Ajzen, 1975).

Subjective norms defined “the person’s perception that most people who are important to him think he should or should not perform the behavior in question” (Fishbein & Ajzen 1975). It is related to intention because people have the perception to what others think they should do. This proved that norms either from the peer group play a strong part in influencing the individual; forcing the individual to comply with the dictates or the inclination of the group (Putit and Arnott, 2007).

Some empirical studies showed that subjective norms directly affect the actual behavior (AI-Majali, 2011; AI-Qeisi, 2009; Wen, 2008; Duds, Santhapparaj, Asirvatham, & Raman, 2007). The background of some countries such as in Jordan and Kuwait showed that there is no consistency in

the result whether positive effect to the intention or no effect on customers' intention (AI-Majali 2011; Rouibah, 2008). The reasons for this result is due to the areas of investigation, respondents, or background of location/ countries. The result in Malaysia and Singapore was investigated to be insignificant (Duda et al., 2007) and other findings supported this result by showing the relationship between subjective norm and Internet purchasing (George, 2004).

### **3.5.1 Social Cultural Influence**

Social influence is a person's perception that most people who are important to him/her think should or should not perform the behavior in question" (Fishbein, Ajzen, & Belief, 1975). However, these is different compared to the discussion of social influence in Technology Acceptance Model (TAM) from which the subjective norm is dropped (Davis, 1989). Further studies have reveals that social influence has a positive effect on perceived usefulness, but not on behavioral intention (Gefen & Straub, 1997; Hsu & Lu, 2004; Taylor & Todd, 1995; Ventakesh & Davis, 2000 cited in Gu, Lee & Suh, 2009). However, this result is not consistent, while social influence has no effect on perceived usefulness and behavioral intention of financial services involuntary context, because the reference groups do not affect the consumers' intention because of individual needs (Ventakesh & Davis, 2000; Gu, Lee & Suh, 2009).

Contrary to this result, this condition is more suitable to examine the consumers' intention to use e-money mobile in Indonesia, while the e-

money mobile is only at the stage of introduction and education to consumers (Bank Indonesia. 2014). Consequently, Ventakesh, Morris, Davis & Davis (2003) redefined social influence UTAUT-1 has a subjective norm in TRA, TAM/TAM-2, TPB/DTPB and C-TAM-TPB, social factor in MPCU, and image in IDT which is a degree to which an individual perceives the importance of others believe in using the new system.

As for UTAUT-1, the influence of social influence on behavioral intention is moderated by age, gender, voluntariness, and experience that showed a stronger effect for women, older workers, under conditions of mandatory use, and with limited experience (Ventakesh, Morris, Davis & Davis, 2003).

Furthermore, the UTAUT-2 as an extension of UTAUT-1 also tested social influence to the mobile Internet technology in Hongkong which showed that social influence has a significant effect on behavioral intentions (Ventakesh, Tong & Xu, 2012). Also, social influence was tested by using moderating; gender, age, and occupation in online Banking. The result showed no significant influence on social influence and behavioral intentions to use online Banking (Riffai, Grant, & Edgar, 2012). It has no consistent result to the prior study, while it has significance to the behavioral intentions (Ventakesh, Morris, Davis & Davis, 2003; Ventakesh, Tong & Xu, 2012).

Moreover, social influence was tested between the United States and Korea. The result surprisingly showed that there was no significant difference in the impact of social influence on the behavioral intentions between the United States and Korea, even the social influence surrounding a technology has a

positive impact on the users' intention to adopt the technology (Im, Hong & Kang, 2011).

The theory of social influence contains recommendations, suggestions, and referees' opinion that are important to the users affecting their intention to use some technology (Fuksa, 2013). However, social influence has less effect when it is tested on the users' intention to use mobile Internet (Fuksa, 2013). The result is different when social influence is tested on the users' intention to use e-Syariah portal that the users had agreed. The social influence has a strong influence on the intention to use e-Syariah portal (Yahya, Nadzar & Rahman, 2012). It has been improved by the findings in the activity based costing/management system where firm performance showed that social influence has a direct effect on the behavioral intention to use (Lee, Yen, Peng & Wu, 2010). Findings of social commerce acceptance also showed that social influence is the most significant influence on the behavioral intention towards social commerce acceptance (Gatautis & Medziausiene, 2014).

Another research finding revealed that social influence significantly affected behavioral intention to use ICT services (Alwahaishi & Snasel, 2012). In online ticket purchase for low-cost carriers showed that social influence positively affected behavioral intention to use low-cost carriers, e-commerce websites, such as online purchase (Escobar-Rodriguez & Carvajal-Trujillo, 2014). Otherwise, social influence has no significant influence on the users' intention to use the website of rural accommodation with online purchase

intention. It has the same result when the social influence is used with the moderator. In such case, innovativeness in information technologies does not moderate the impact of social influence on the purchase intention (Martin & Herrero, 2012).

Furthermore, there are plenty of studies that discussed social influence with moderating variables on the behavioral intention. Age and gender are tested as moderating variables between social influence and behavioral intention to use Internet Banking. However, the result is supported partially, since age and genders have no significant effect, it has only positive and significant effect on social influence and behavioral intention to use Internet Banking (Martins, Oliveira & Popovic, 2013). Besides, social influence was grouped as external variables to test user acceptance of 3G mobile telecommunication technologies. The result showed a positive effect of social influence on the behavioral intention of the users of 3G telecommunications services. It means that family and friend can entice the consumers to use 3G telecommunication services by their behaviors and manners (Wu, Tao, & Yang, 2008).

In addition, social influence contains many dependent variables. A study about user acceptance of software conducted on customers of China's e-commerce company has reported a direct positive impact on social influence on perceived usefulness of software as a service. It also has a direct positive influence on behavioral intention to use software as a service. The impact of social influence on behavioral intention is partly mediated by perceived

usefulness (Du, Lu, Wu, Li & Li, 2013). Another study on people to use information kiosk revealed that social influence has a significant impact on behavioral intention, but strongly for women than men. However, social influence is not affected by older or younger people to the behavioral intention to use information kiosk (Wang & Shih, 2009).

The social influence is also not significant on behavioral intention in virtual words. The absence of significance is not a surprising effect since much previous researches found it in a mandatory context (Guo & Barnes, 2011). However, social influence has the most salient effect on behavioral intention to adopt mobile banking, but this result differs when social influence is tested by using moderating variables. Age significantly moderated the relationship between social influence and behavioral intention, which was more salient for young people, but such relationship, was not significantly moderated by gender (Yu, 2012).

Another finding discussed on social influence to use smart card applications in Malaysia. The result showed that users were not affected by the social influence, while most of the Malaysians have MyKad and the government encourages the use of MyKad. However, the users were aware of MyKad driving license applications, but it was not affected by their peer groups as a social influence (Loo, Yeow & Chong, 2009). User acceptance and corporate intranet quality also tested social influence as a strong factor to influence behavioral intentions (Barner & Vidgen, 2012). It indicated that social influence is important to explain consumers' behavioral intentions. As

the consumers' adoption of information, social influence has salient factors to understand the collaborative service components (McKenna, Tuunanen & Gardner, 2013). The table 3.7 below shows several studies which examined the effect of social influence on behavioral intention.

Table 3.7

*Previous studies on the effect of social influence on behavioral intention*

<b>Author</b>	<b>Area</b>	<b>Country</b>	<b>Respondent</b>	<b>Dependent Variable</b>	<b>Result</b>
Chai & Pavlou (2002)	E-commerce	China	Internet Users	Behavioral intentions	Non significant relationship
Chai & Pavlou (2002)	E-commerce	USA	Internet Users	Behavioral intentions	Significant relationship
Chau & Ngai (2010)	Internet banking services	UK	University students	Behavioral intentions	Significant relationship
Esmaili et al (2011)	Internet Banking	Iran	Banks' customers	Behavioral intentions	Significant relationship
Park et al (2007)	Mobile technology	China	Internet users	Using mobile technology	Significant relationship
Wang & Shih (2009)	Information kiosks	Taiwan	Citizens	Behavioral intention	Significant relationship
Marchewka & Kostiwa (2007)	Management software	USA	Undergraduate and graduate students	Behavioral intention	Significant relationship

Source: Al Qasa, 2013

Furthermore, some studies have discussed on cultural differences (Smith, French, Chang and McNeill (2001) was explored in UK and China about the differences between the UK and China's users in terms of their "perception" and "preference". It becomes important components to explore cross-cultural and gender perception (Jagne, Smith, Duncker; Curzon 2004; Simon, 2001).



### 3.5.2 Family

The family is a key socio-economic unit in society and the nature of its organization greatly varies across nationalities (Alesina & Giuliano, 2007). Coleman (1988) argues that family ties can facilitate or inhibit social actions. A consumer's intention to use is also influenced by social factors, such as the groups to which the customer belongs, and social status. In a group, several individuals may interact to influence the purchase decision. The typical roles in such a group decision can be summarized as follows: Initiator-the person who first suggests or thinks of the idea of buying a particular brand or service, Influencer: A person whose view or advice influences the buying decision, Decider: The individual with the power and/or financial authority to make the ultimate choice regarding which brand to buy. Moreover, the family unit is usually considered to be the most important "purchasing" organization in society. It has been researched extensively.

Marketers are particularly interested in the roles and relative influence of the husband, wife, and children on the purchase of a large variety of brands and services. Moreover, the more closely-knit the group is, the greater the influence of group norms. As clearly shown by Chiason & Lovato (2001), the family has an impact on local brand purchase, where Morris & Venkatesh (2000) revealed the intention of workers to adopt and their purchase behavior of local brand is impacted by subjective norms/family, and these are the norms of the individual's peer group, or in other words,

their “local circle of influence”. Taylor & Todd (1995) posited that the more tightly-knitted (collectivist) societies, family, friends and peer groups (in a consumer context), and work colleagues and the organizational culture (in a business context), the more influencing the behavior is exhibited. This is especially true when it comes to immediate societal context (e.g.,nationality) as compared to global social norms.

Early important work by Banfield (1958) identified "amoral familism" as one of the main causes of Southern Italy’s underdevelopment, and Putnam (1993) and Fukuyama (1995) recognized that the lack of reciprocal trust is detrimental to development. Gambetta (1990) shows how a critical characteristic of the mafia "families" is that one can trust only family members and that the mafia family structure enforces trust in a society lacking it.

In Yemen, this is particularly true within the family. The family is considered as a group of parents and siblings, and from parents an individual acquires their idea of religion, politics, and economics, and a sense of personal ambition, self-worth, and love, like any other culture, but this is particularly obvious in Arab culture; for example, in Yemeni culture, the family stresses the presence of respect and modesty in the relationships between individuals in the family (Rouibah, 2008). Looking at the fact from the point of view of a business culture, based on a study in Yemen conducted by Qaid (2008), different businesses differ between different countries, for example, in Yemen, companies only work part-time, and the

author found the appearance of difficulties in industrial organizations, due to time constraints as the brand on capacity available is cut off.

This is further compounded by the studies that show the high influence of culture on consumer purchase intention; an intention that displays various perspectives in comparison to advanced countries. It has been proven that purchase intention tends to produce a perception that local brands have higher quality as compared to the imported ones (Dickerson, 1982; Herche, 1992). The opposite can be observed in developing economy; consumers are more inclined to believe that local brands are not as good as imported brands (Agbonifoh & Elimimian, 1999; Batra et al. 2000; Wang & Chen, 2004). Accordingly, this study examines the impacts of Yemeni consumer purchase behavior and cultural sensitivity on brand, and subsequently, an intention to purchase local brands (Barrett, 2008).

### **3.6 Decomposed Perceived Behavioral Control**

Perceived behavioral control reflects an individual perception and confidence to perform the behavior in question (Ajzen, 2006; Lee, 2009). It can influence the behavior directly or indirectly through behavioral intentions (Nasri & Charfeddine, 2009). The significant and positive influence of perceived behavioral control already exist in some previous research in the internet Banking (Al-Majali and Nik Mat, 2010; Jaruwachirathanakul & Fink, 2005; MdNor and Pearson, 2006), and also perception of volitional control or the perceived difficulty towards the behavior will affect intent (Chang, 1998). Unless control over a behavior exists, intentions will not be

sufficient as the predictor of the behavior (Sahni, 1994). Factors such as skills, abilities, time, and requisite information play a significant role in predicting and performing the behavior. The significant and positive effect of perceived behavioral control on individuals' behavioral intention has been supported by many studies in the Internet banking domain (e.g., Al-Majali and Nik Mat, 2010; Jaruwachirathanakul and Fink, 2005; MdNor and Pearson, 2006).

Perceived behavioral control (PBC) refers to an individual's perceptions of their ability to perform a given behavior (Ajzen, 1991). It arises from the subjective degree of control over a behavior performance when a person assesses how easy or difficult it would be to carry out that behavior (Ajzen, 2002). Thus, PBC is the banking consumer's subjective perception of how easy or difficult Internet banking operation from a bank's website would be. In general, PBC plays a vital role in IT adoption and the role of PBC on intention has been confirmed by early seminal work (Conner & Armitage, 1998; Taylor & Todd, 1995a, 1995b). In their meta-analysis review, Jeyaraj, Rottman, and Lacity (2006) discovered that PBC is a significant predictor in IT adoption. Therefore, prior studies have suggested a positive link between PBC and the intention to adopt technologies. The current study expects a higher perceived behavioral control in the context of Internet banking.

Perceived behavioral control can be reflected the factors that may hold up to the performance of the behavior. This definition encompasses two components. The first component is self-efficacy and is defined as an

individual's self-confidence in his or her ability to perform a behavior (Bandura, 1977; 1982). The second component is "facilitating conditions" and it reflects the availability of resources needed to engage in the behavior (Triandis, 1979). Studies conducted by Hill et al. (1986) establish the self-efficacy predicts intentions to use a wide range of technologically advanced products. Thus, an individual confident in having the skills in using the computer and the Internet is more inclined to adopt Internet banking. This is because the individual is comfortable in using the innovation (Teo & Tan, 2000).

Perceived behavioral control was positively associated with the purchase intentions of consumers on the Internet (Lim and Dubinsky, 2005). Besides, few studies found an insignificant relationship (Al-Muala, 2010; Pedersen & Nysveen, 2005) while some studies realised a significant relationship between perceived behavioral control and actual behavior (Almajali & Nik Mat, 2010; Chen, 2009; Gopi & Ramayah, 2007; Lin, 2007; Fusilier & Durlabhji, 2005; Chu & Wu, 2005; George, 2004).

### **3.6.1 Self-Confidence**

Self-confidence is defined as "a trust or assertion in oneself, believing in one's attitude, making a choice which may be referring to a general context or to a specific event or doings" (Colman, 2002). Self-confidence is analogous with self-efficacy in generally (Bandura's (1977, 1982, 1999, 1994; Pavlou & Fygenson, 2006; Taylor & Todd, 1995a, 1995b) perceived self-efficacy defined as "an individual's

beliefs about their capabilities to produce effects or designated levels of performance that exercise influence over events that affect their lives” (Bandura, 1994). There is important point need to be highlighted if a person has high self-efficacy, it means he is confident in their capabilities dealing with difficult tasks and attributes failure to insufficient effort or deficient knowledge and skills which are acquirable.

In contrast, a person with low self-efficacy views difficult tasks as personal threats and gives up quickly in situations involving difficulties (Bandura, 1994). Therefore, self-efficacy is considered an internal component and is expected to link to a person’s perception of behavioral control. He had explored that in the context of Internet banking, a potential Internet banking customer faces many unknown variables including an effort to learn how to operate bank provided software, problems when errors arise or making phone calls for technical assistance. It becomes strong reason that the higher confidence, the stronger perceived behavioral control, and person will have more intention to the adoption of technology. So, it becomes a key determinant of perceived behavior control (Ajzen, 1991, 2002).

Self-confidence is an important factor in predicting individual behavior and performance across various settings (e.g. Bandura et al., 1980; Sadri and Robertson, 1993). For example, it is used to predict behavior such as information technology usage (Taylor and Todd,

1995a; Venkatesh et al., 2003), technology adoption behavior (Compeau and Higgins, 1995; Venkatesh and Davis, 1996), internet usage between socio-economically advantaged and disadvantaged groups (Hsieh et al., 2008), and e-commerce adoption (Pavlou and Fygenson, 2006).

### **3.6.2 Resources Facilitating Condition**

Resources facilitating condition is reflected the degree of consumers trust that infrastructure of the organizational and it technical help them to use the system (Ventakesh et al., 2003). In this study, the consumers' intention to use e-money has generally accepted the system that is produced by the issuer as organizational context. Facilitating conditions relate to how consumers access, the cost of using the system and availability to use the system (Pan & Jordan-Marsh, 2010).

Facilitating conditions have been discussed in various studies with coming out with the inconsistent result, either significant or insignificant influence to the intention (Flannery and May 2000; Bourgeois, 1981). It also has been discussed in organizational level (Nohria and Gulati (1996; Cyert and March 1963) suggested that organizational slack is an important facilitator of innovative behavior in organizations. Availability of additional resources, the theory of planned behavior researchers has often studied as an important factor of perceived behavioral control individuals (Flannery and May 2000;

Pavlou and Fygenson, 2006; Song and Zahedi, 2005; Taylor and Todd, 1995a, 1995b, 1995c). Therefore, it is expected that the availability of organization's resources will influence the perceptual control of the top management to support information technology projects.

Another discussion reflects facilitating condition a technical support which helps information system department with difficulty and enables network availability in the support systems (i.e., knowledgeable colleagues, superiors, and support personnel) (Huang and Chuang, 2007). Facilitating conditions is a concept originally proposed by Triandis (1977) in the theory of interpersonal behavior. Facilitating conditions in Internet Banking embodies all the physical (time and money) and technical resources needed to establish an internet connection and realize the Internet Banking service (Hernandez and Mason, 2006).

Facilitating conditions are described as a concept similar to perceived behavioral control, San Martín and Herrero (2012) found that they failed to predict the intention to book a room online. Conditions facilitation both have a significant positive effect on the perception of behavioral control and have a stronger effect (To et al., 2008). Facilitating conditions reflect the availability of resources needed to engage in behavior (Triandis 1979). This refers to the ease of access to technology resources and infrastructure. Goh (1995) shows that, as



the supporting infrastructure becomes easy and available technology, internet commerce applications such as banking services will also become more feasible. As a result, Internet users will be expected to be more inclined to adopt Internet banking. In Singapore, It is well recognised that the local government is the main driving force in the diffusion of information technology (Gurbaxani et al 1990; Jussawalla et al 1992; Tan 1998; Toh and Low 1993).

### **3.7 Perceived Risks**

Perceived risk is described as how the consumers accept some risks if they purchase some products that can be associated with two main points of uncertainty and consequences (Schiffman and Kanuk, 2010:201). Perceived risk may affect the consumers' decision and their intention to reduce, avoid or postpone the system, especially among the inexperienced consumers (Jarvenpaa et al., 1999, Kim et al., 2009).

From the theory of consumers' perceived risk, uncertainty and unwillingness are the consequences of purchase that make consumers' perceived risk (Taylor, 1974; Dowling, Stealin, 1994). The consumers often look for some information before they buy the product in order to reduce the risk and avoid the mistakes on purchasing. For product sale in the website which includes online or telephone shopping, the customers need to be careful about the safety and security in terms of personal information, payment system, and others issues (Lim, 2003).

Many of the previous studies tested perceived risk in many different contexts such as online shopping, Business to Business (B2B), Business to Commerce (B2C), Internet Banking, and others. Peng Lu, et al. (2005) explored that perceived risk has indirect impacts on the intention of the consumers when they use an online application that is under potential security threats. Giovanis, et al. (2012) revealed that the perceived usefulness partially mediates the relationship between perceived ease of use and customers' intentions. This happens as an effect of the perceived security and privacy risk that also partially mediate the relationships between compatibility and customers' behavioral intentions. Lee (2009) showed that the intention of the consumer to use the online banking is affected by perceived risk, which mainly includes the security/privacy risk and financial risk, and such intention is positively affected by perceived benefit, attitude, and perceived usefulness.

Timothy (1998) explored that it is important to manage the risks of E-money as well as potential money laundering that identified security and regulation as the two variables influencing E-money transaction. However, Michelle (2004) also found same variables which are regulation and limited on three perceived risks factors that are an operational risk, compliance risks, and reputational risk. Nobuhiko (2009) discussed E-money and the law related to the future challenges that have to be focused on the security. Furthermore, Michael and Paul (2010) improved it as regulatory approaches for E-money

transaction to protect the customer's funds by using the security and perceived risks (operational risk, compliance risk, and reputational risk).

In conclusion, the E-money system has limited protection on card based E-money in spite of using PIN. Therefore, it is important to implement security features for the safe transaction in order to attract the consumers who have to accept some uncertainty risks (perceived risks) like the online Banking (Papadopoulos, 2007). This will protect the consumers from the big risk of E-crimes known as E-criminals' intelligence hackers that have more connection and channel to log into the consumer data (Al-hamami, Najadat, Wahhab, 2012). After the reviews of existing studies, there is a problem in classifying the perceived risk where many dimensions are examined in a different perspective. Table 3.8 describes the dimensions/facet of perceived risks that are most suited to be tested together with Technology Acceptance Model (TAM).

Table 3.8

*Descriptive for Dimensions/ Facet of Perceived Risk*

<b>Perceived risk facet</b>	<b>Description-Definition</b>
1. Performance risk	"The possibility of the product malfunctioning and not performing as it was designed and advertised and therefore failing to deliver the desired benefits" (Grewal et al., 1994)
2. Financial risk	"The potential monetary outlay associated with the initial purchase price as well as the subsequent maintenance cost of the product" (Grewal et al., 1994). The current financial services research context this facet to include the recurring potential for financial loss due to fraud
3. Time risk	Consumers may lose time when making a bad purchasing decision by wasting time researching and making purchase, learning how to use a product or service only to have to replace it if it does not perform to expectations
4. Psychological risk	The risk that the selection or performance of the procedure will have a negative effect on the consumer's peace of mind or self-perception (Mitchell, 1992). Potential loss of self-esteem (ego loss) from the frustration of not achieving a buying goal

Table 3.9 (Con't)

Perceived risk facet	Description-Definition
5. Social risk	Potential loss of status in one's social group as a result of adopting a product or service, looking foolish or untrendy
6. Privacy risk	The potential loss of control over personal information, such as when information about you is used without your knowledge or permission. The extreme case is where a consumer is "spoofed" meaning criminal uses their identity to perform fraudulent transactions
7. Overall risk	A general measure of perceived risk when all criteria are evaluated together

Source: Featherman and Pavlou (2003)

E-money mobile based innovation for payment system is also associated with the perceived risk that has gained significance in consumer study with a product or service (Lim, 2003; Mitchell, 1999; Schierz et al., 2010). As a tangible product, E-money mobile is more difficult to be evaluated because it has high potential loss related to the operational of transaction, personal information, and its privacy, this reason makes the system more risky to consumers to believe and accept it, (Gefen et al. 2003; Mitchell 1999; Schierz et al., 2010; Bauer et al., 2005b).

### 3.8 Perceived Security

Perceived security is defined as a degree of protection against some threats as consumers' perception (Yousafzai, Pallister & Foxall, 2003). Security has been stated as the greatest challenge in numerous studies that are, widely focused on electronic Banking (Furnell & Karweni, 1999; Bestavros, 2000; Aladwani, 2001; Yousafzai, Pallister & Foxall, 2003). Furthermore, security risk as privacy invasion for electronic services has been a crucial concern to the consumers, because the consumers come from zero experience on new

electronic devices and its services such as mobile payment (Lwin et al., 2007; Bauer et al., 2005a; Schierz et al., 2010). Additionally, security takes on consumers' concern on Internet payment whether it is secure and intercepted because the consumers possess a greater security awareness that will affect their intention to use the Internet services (Furnell & Karweni, 1999; Jones et al, 2000).

Security is the instrument to achieve protection and it comes with three characteristics such as integrity, availability, and confidentiality that are used in technical practice as solutions for destruction, disclosure, modification, denial of service, fraud, wastage, and abuse in managerial activity (Kalakota & Whinston, 1997; Gordon & Loeb, 2002). In online banking, the customers securely invest in their financial information. The security features on the Internet focus on safety and accuracy of the detail payment information during a transaction where the consumers have to seriously perceive the transaction cost as the transaction risk (Liao & Cheung, 2001).

By using E-money mobile, it helps customers to reduce money laundering and money smuggling. It is so advantageous for every country or regions that do not have enough protection on money laundering. So, E-money system can help the customer safeguard their account by doing more of a private transaction and it makes the system very difficult for the hackers to investigate. Besides, it records the details of the customer transactions and thus, maintains the privacy of the customer and account balance information.

This system has been developed internationally in unique currencies, so the customer does not need to be afraid of a transaction from country to country (Ping, 2004).

Each of them is provided with an account to access ID easily which they have to remember. This may create poor security habits if the customers are unable to remember and write the password, which in turn can be in an unauthorized hand resulting in account theft (French, 2012). The vulnerability of information in each customer account should be well in the focus of the organization because it only needs a security breach to cause potential loss of investment (Gordon & Loeb, 2002).

Security becomes an important factor that has the most influence on the intention of customers to use online payment. It has been seen in the previous research that security has been moderating the consumers' attitudes towards online purchasing (McCole, Ramsey, & Williams, 2010). In this research, two models were estimated. Model 1 examined the relationship between trust in the vendor, trust in the internet, and trust in third parties using experience, perceived channel risk, and age as control variables. The moderating variable involved privacy and security concerns and the dependent variable was the attitude towards online purchasing. All of the variables were significant, but it does not work in privacy and security concerns. This result revealed that privacy and security cannot be tested for a direct relationship between privacy and security concerns because it could mislead such concerns as moderating variable (Sharma et al., 1981).

Model 2 explained that the significance of variables was increased by 10% than that in Model 1. It is because of the fact that Model 2 provided privacy and security concerns as the moderator of the relationship between trust in the vendor, trust in the internet, and trust in third parties. As expected, all the variables were significant, but the only trust in third parties did not show a significant moderating effect. Analyses for this surprising result indicates that the privacy and security concerns claimed as partial support to the hypothesis. Probably, it would have expected that trust in third parties will be increased if privacy and security concerns were higher and it will predict the responses to the agents involving the exchange, regard on institutional trust, or reduce misappropriate by the hackers. However, the previous research on security and privacy showed the differentiation between them, but they still have the relationship toward the electronic technologies.

Privacy concerns have been found to unveil the lack of trust in e-commerce, e-health, e-recruitment, and social networking that directly affects the users. Besides, privacy is one of the dimensions of the e-commerce security. Security is a continuation of the privacy actions because it has been the principal concern to the customers and organizations when using e-commerce. So, it can be summarized that security is the most considerable factor that can render strong influence on the customer's intention (Niranjanamurthy & Chahar, 2013). Issues of security in the online transaction are becoming the core concerns that arise from the intention of consumers. It has put forward two aspects as solution strategy such as

technology and system that can improve and promote the environment for the E-commerce activities (Wen & Zhou Cited in Niranjnamurthy & Chahar, 2013). It was discussed in the airline industry in the South Korea that the intention of consumers on the airline product purchasing behaviors puts the security at the high-level consideration in the payment system of the airline product because the enterprises are extremely large in size (Kim et al., 2009).

Table 3.9

*Online Banking Future Challenge*

<b>Challenge</b>	<b>Rating of IT managers</b>	<b>Rating of senior management</b>	<b>Overall rank</b>
Internet security	1	3	1
Customers' trust	2	1	2
The speed of service delivery	4	2	3
Customers information privacy	3	6	4
Customers' awareness	5	9	5
Customers' of the service	6	10	6
Spread of Internet use	7	5	8
Spread of computer use	8	4	7
Difficulty of using online banking by some customers	12	7	9
Pricing of Internet on the country	10	8	10
Internet infrastructure in the country	11	12	11
Cost of maintaining the site	9	15	12
Lack of legal regulations	13	13	13
ISP monopoly	15	11	14
Difficulty of maintaining the site	14	14	15

Source: Aladwani (2001)

According to the table 3.10 above, security is the first factor that poses the most challenges towards the online transaction. The previous explanation is



also improved by the proposal of a model: e-trust for e-banking that explains how privacy and security will effect on the trust and proposed how it should be moderated with the customer's perception of trustworthiness of the bank (Yousafzai et al., 2003). Otherwise, perceived security and trust are explored by the relationship between perceived risk and trust that describes security as the moderating factor to make the customers trustful to use online services (Lim, 2003). Table 3.10 illustrates another research as below.

Table 3.10

*Previous study on perceived security*

<b>Variable</b>	<b>Authors(s)</b>	<b>Variable</b>	<b>Author(s)</b>
Security	Chang & Chen (2009), Delafrooz et al (2011), Gummerus, Liljander, Pura & Riel (2004), Kim et al (2010), Peikari (2010a), Ribbink et al (2004), Roca et al (2009), Kurt & Hacioglu (2010)	Third party seal	Belanger et al (2002), Kim & Benbasat (2010), Kim & Benbasat (2006), Kim et al (2008), Mahmood (2006), Peterson et al (2007)
Technical protection	Chellapa & Pavlou (2002), Kim et al (2010), Peikari (2010b,c)	Internally and externally	Bahmunziari et al (2009), Luo (2002)
Privacy statement	Belanger et al (2002), Li & Zhang (2009), Mahmood (2006), Peterson et al (2007)	Privacy seal	Hu et al (2010), Li & Zhang (2009), Mahmood (2006)
Security statement	Kim et al (2010), Peikari (2010c),	Authentication	Chellapa & Pavlou (2002), Peikari (2010b), Suh & Han (2003)
Encryption	Chellapa & Pavlou (2002), Peikari (2010b)	Security seal	Belanger et al (2002), Hu et al (2010), Li & Zhang (2009)

Source: Mahmood Hossein Shah, Hamid Reza Peikari and Norjaya M. Yasin (2013)

### 3.9 Previous Research

Many studies have examined behavioural intention in various background; factors affecting the adoption of Internet banking in Tunisia: An integration theory of acceptance model and theory of planned behaviour, Understanding the Internet banking adoption(Martins, Oliveira, & Popovič, 2013); A unified theory of acceptance and use of technology and perceived risk; Application Factors influencing the adoption of internet banking: An integration of TAM and TPB with perceived risk and perceived benefit (Nasri & Charfeddine, 2012), Technology Trust and E-Banking Adoption: The Mediating Effect of Customer Relationship Management Performance(Wahab, Noor, & Ali, 2009); The Impact of E-Commerce Security, and National Environment on Consumer adoption of Internet Banking in Malaysia and Singapore(Dauda, Santhapparaj, & Asirvatham, 2007), Trust considerations on attitudes toward online purchasing: The moderating effect of privacy and security concerns(McCole, Ramsey, & Williams, 2010).

The previous studies are hereby summarized in table 3.11 as follows.

Table 3.11

*Previous studies*

<b>Authors</b>	<b>Title</b>	<b>Independent</b>	<b>Dependent</b>	<b>Moderator</b>	<b>Findings</b>	<b>Conclusion</b>
(Nasri & Charfeddine, 2012)	Factors affecting the adoption of Internet banking in Tunisia: An integration theory of acceptance model and theory of planned behavior	PU	ITU	-	Significant +	Supported
		Attitude	ITU	-	Significant +	Supported
		PU	Attitude	-	Significant +	Supported
		PEOU	ITU	-	Significant +	Supported
		PEOU	PU	-	Significant +	Supported
		Security & Privacy	Attitude	-	Significant +	Supported
		Subjective norm	ITU	-	Significant +	Supported
		PBC	ITU	-	Significant +	Supported
		Self efficacy	PBC	-	Significant +	Supported
		Government support	PBC	-	Significant +	Supported
		Technology support	PBC	-	Significant +	Supported
(Martins, Oliveira, & Popovič, 2013)	Understanding the Internet banking adoption: A unified theory of acceptance and use of technology and perceived risk application	Performance expectancy	Behavior control	Age, gender	-Significant + - not significant with moderator	Partially Supported
		Effort expectancy	Behavior intention	Age, gender	-Significant + - not significant with moderator	Partially supported
		Social influence	Behavior intention	Age, gender	- Significant + - not significant (moderator)	Partially supported

Table 3.12 (Cont')

Authors	Title	Independent	Dependent	Moderator	Findings	Conclusion
(Martins, Oliveira, & Popovič, 2013)	Understanding the Internet banking adoption: A unified theory of acceptance and use of technology and perceived risk application	Facilitating conditions	Usage behavior	Age	Not significant	Not supported
		Behavioral intention	Usage behavior	-	Significant +	Supported
		Perceived risk	Seven risks	-	Significant +	Supported
		Perceived risk	Behavioral intention	-	Significant -	Supported
(Martins, Oliveira, & Popovič, 2013)	Understanding the Internet banking adoption: A unified theory of acceptance and use of technology and perceived risk application	Perceived risk	Performance expectancy	-	Significant -	Supported
		Effort expectancy	Perceived risk	-	Significant -	Supported
(Wahab, Noor, & Ali, 2009)	Technology Trust and E-Banking Adoption : The Mediating Effect of Customer Relationship Management Performance	Perceived of trust	E-Banking adoption	CRM Performance (Mediator)	Significant	Supported

Table 3.12 (Cont')

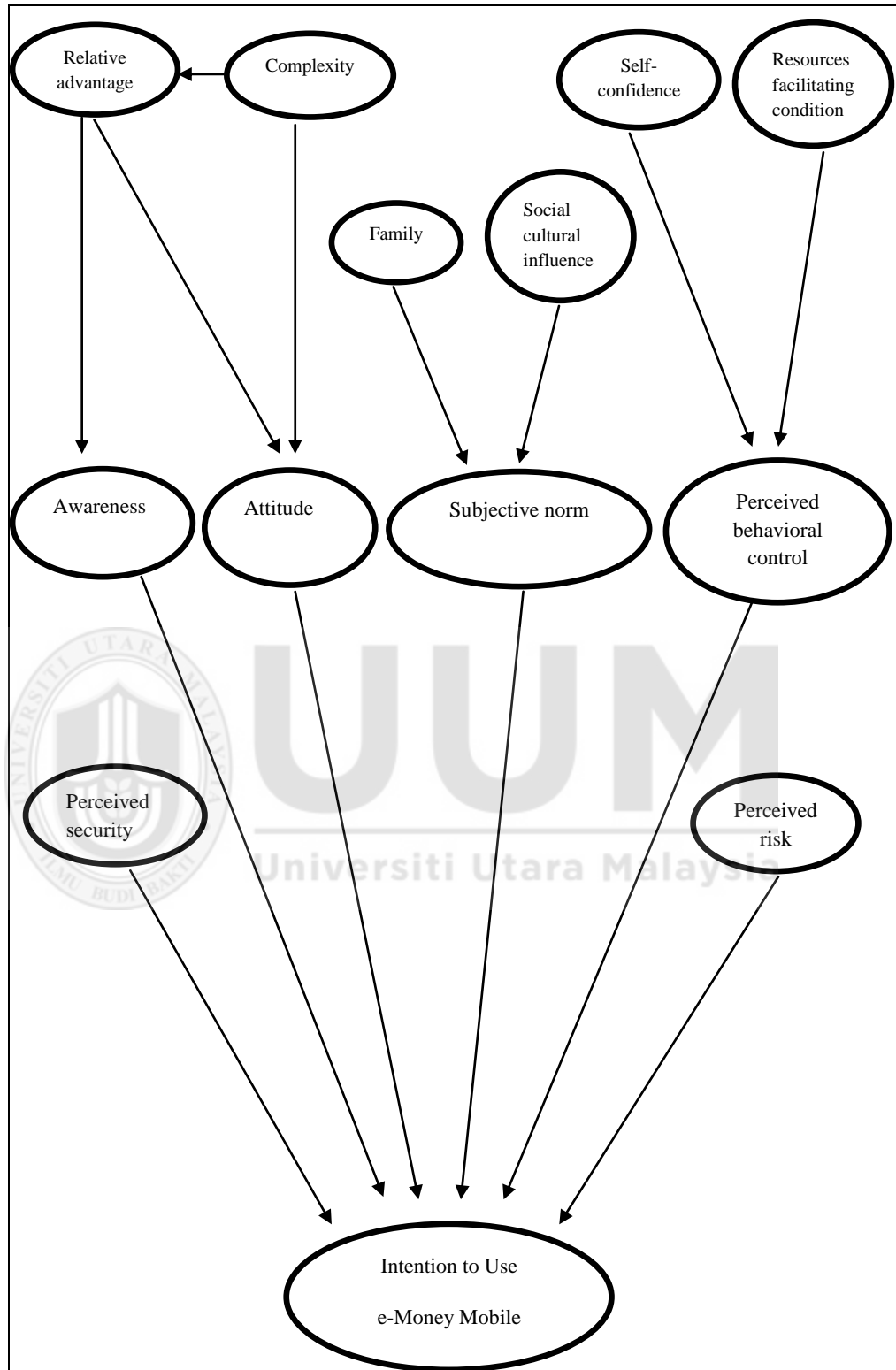
Authors	Title	Independent	Dependent	Moderator	Findings	Conclusion
(Lee, 2009)	Factors influencing the adoption of internet banking: An integration of TAM and TPB with perceived risk and perceived benefit	Performance risk	Attitude	-	Significant -	Supported
		Social risk	Subjective norm	-	Significant -	Supported
		Performance risk	PU	-	Significant -	Supported
		PEOU	PU	-	Significant -	Supported
		Social risk	Attitude	-	Not Significant	-
(Lee, 2009)	Factors influencing the adoption of internet banking: An integration of TAM and TPB with perceived risk and perceived benefit	Security risk	Attitude	-	Significant -	Supported
		Security risk	ITU	-	Significant -	Supported
		Financial risk	ITU	-	Significant -	Supported
		PU	ITU	-	Significant +	Supported
		Perceived benefit	ITU	-	Significant +	Supported
		Attitude	ITU	-	Significant +	Supported
		PBC	ITU	-	Significant +	Supported
		Subjective norm	ITU	-	Significant +	Supported
		PU	Attitude	-	Significant +	Supported
		PEOU	Attitude	-	Significant +	Supported
		Financial risk	Attitude	-	Significant -	Supported
Time risk	Attitude	-	Significant -	Supported		

Table 3.12 (Cont')

Authors	Title	Independent	Dependent	Moderator	Findings	Conclusion
(Dauda, Santhappa raj, & Asirvatham, 2007)	The Impact of E-Commerce Security, and National Environment on Consumer adoption of Internet Banking in Malaysia and Singapore	E-Commerce security a. Confidentially	Adoption of Internet Banking in Malaysia and Singapore Adoption of Internet Banking in Malaysia and Singapore Dependent	-	Not reliable	-
		b. Authentication		-	Not significant	-
		c. Data Integrity		-	Not reliable	-
		d. Non-repudiation		-	Significant	Supported partially
		e. Privacy		-	Not significant	-
		f. Trust		-	Significant	Supported partially
		National environmental factors: a. Relative advantage		-	Significant	Supported partially
		b. Internet experience		-	Significant	Supported
		c. Banking need		-	Significant	Supported
		d. Trial ability		-	Not significant	-
		e. Subjective norm		-	Not significant	-
f. Self-efficacy	-	Not significant	-			
h. Government support	-	Not significant	-			
(McCole, Ramsey, & Williams, 2010)	Trust considerations on attitudes toward online purchasing: The moderating effect of privacy and security concerns	Trust in Vendor	Privacy & Security	Attitude towards Online purchasing	Significant	Supported
		Trust in the Internet	Privacy & Security	Attitude towards Online purchasing	Significant	Supported
		Trust in third parties	Privacy & Security	Attitude towards Online purchasing	Not significant	-

### **3.10 Research Framework**

This study mainly focuses on the mobile phone users by examining their intention to use E-money mobile. The research framework for this study is primarily based on the Taylor and Todd's (1995a) decomposed theory of planned behaviour (DTPB) model. The decomposition approaches attitudinal beliefs, normative beliefs, and control beliefs into multi-dimensional belief constructs. This study uses DTPB model by including others factors of behavioural intention which are awareness, perceived security and perceived risk as a new construct. This study uses the decomposed theory of planned behaviour by Taylor and Todd (1995a) as a basis for determining the factors influencing consumers' intention to use e-money mobile in Indonesia. The research framework is illustrated in figure 3.3 as follow.



**Figure 3.3**  
**Research Model**



### **3.11 Hypothesis Development**

From the theoretical framework, there are 14 hypotheses formulated in this study. Previous empirical findings concerning the relationship among the variables are presented to support the hypotheses. The detail of the discussion on the relationship between the variables is discussed in the subsection below.

#### **3.11.1 Relationship between Attitude and Intention to Use e-Money Mobile**

Attitude refers to the positive or negative evaluation of individuals about a particular behaviour. The consequence of adopting innovations (behavioural beliefs) and evaluation of the consequences are generated by the significant individual beliefs by attitudes toward adopting an innovation. In this study, the attitude towards an intention to use e-money mobile is defined as positive or negative consumer evaluations. Individuals will have more intention to perform certain behaviours if they have a more positive evaluation of such behaviour. It could be argued that if the individual has a positive evaluation of the specific behaviour, the more possible for the individual to perform the certain behaviours.

Previous research discussed in the online shopping arrangement shows a positive relationship between attitude and intention of online shopping (Tan et al, 2010; Lee & Chen, 2010; Amorso &

Hunsinger, 2008; Lin, 2007). It was improved by Happening lao (2009) that found there is not a significant effect of attitudes towards online shopping intentions. In this line, if the consumer has a positive evaluation of intention to use e-money mobile, there is a greater chance in the consumer intention to use e-money mobile. The influence of attitude on intention to use have been demonstrated by numerous studies as in the field of information systems (Chang & Cheung, 2001; Chau & Hu, 2001; Davis et al, 1989, Harrison et al, 1997; Mathieson, 1991; Shim et al, 2001; Taylor & Todd, 1995a) and in area of Internet banking (Bhattacharjee, 2000; Khalil & Pearson, 2008; Liao et al, 1999; Shih and Fang, 2004; Suh & Han, 2002). A positive attitude about internet banking should be done before the technology can be accepted (Khalil and Pearson, 2008). If an individual forms positive attitudes towards e-money mobile, they will have a strong intention to use e-money mobile. Therefore, they are more likely to use it. Another study by Lu et al. (2009) explored that positive attitude affects behavioural intention to use instant messaging services.

Previous research has shown that the effects of attitudes toward behavioural intention, which in turn will affect the behaviour. Especially, the studies related to the field of e-money mobile was minimally discussed and more discussion in mobile services. For

example, some studies have been conducted and verified that the relationship between attitude and behavioural intention to use in mobile services (eg, Bauer et al, 2005; Bruner and Kumar, 2005; Hong et al, 2008; Hsu. et al, 2006; Nysveen et al., 2005). It also verified that the attitude has positively influenced behavioural intention to use (Rohm & Sultan, 2005; Kuo & Yen, 2009; Norizan, 2011; Schierz et al, 2010; Hsu et al, 2006 ; Khalil & Pearson, 2008; Lu et al., 2009; Nysveen, 2005; Rohm & Sultan, 2006; Scharl et al, 2004). Therefore, this study hypothesized that:

H<sub>1</sub>: Attitude positively affects the intention to use e-money mobile

### 3.11.2 **Relationship between Subjective Norm and Intention to Use e-Money Mobile**

The subjective norm in this study is that there are limited studies conducted in Indonesia concerning E-money mobile. Subjective norm reflects to the perceived pressure from people who think consumers are important to them. Subjective norm refers to other people's perceptions of the individual's opinions on whether he should do or not do a particular behaviour (Ajzen, 1991).

In particular, previous studies did not take numerous the subjective norm setting e-money mobile in Indonesia as a predictor of intentions. In addition, different findings in various backgrounds such e-banking, e-commerce, online shopping found no significant effect (Jarnail,

2012; Lee & Ngoc, 2010; Nik Mat & Sentosa, 2008) whereas another study found a significant effect (Pedersen & Nysveen, 2005; OK & Shon, 2006). In another study, Suntompithug and Khamalah (2010) described that higher levels of the subjective norm of online purchases should lead to a higher level of trust and intention to buy.

The influence of subjective norms on behaviour intention has been found in many studies with various contexts such adoption IT, mobile services. A study on the intention to adopt and continue to use the Microsoft Windows 3.1 between PC's users discussed that subjective norm has a significant effect on behavioural intentions (Karahanna et al., 1999). Other studies have also proved that subjective norm significantly has an effect on behavioural intention (Harrison et al, 1997; Lu et al., 2009; Jasman et al, 2005; Khalil & Pearson, 2008; Taylor & Todd, 1995a, 1995b; Venkatesh et al, 2000). More study on the acceptance of electronic brokers (e-broker) has also confirmed the relationship; subjective norm significant effect on intention (Bhattacharjee, 2000).

Subjective Norms have also been recognized to play an important role in determining the adoption of mobile technologies (Chong et al, 2010; Hsu et al, 2008; Scheirz et al, 2010). It was improved that subjective norm has a positive effect on behavioural intentions (Jayasingh and

Yeh, 2009; Shin et al., 2009). Therefore, the second hypothesis for this study can be summarized as:

H<sub>2</sub>: Subjective norm positively affects the intention to use e-money mobile

### **3.11.3 Relationship between Perceived Behavioural Control and Intention to Use e-Money Mobile**

Perceived behavioural control is the extent to which a person believes that he / she has been controlled by personal or external factors that may facilitate or hinder the performance of the behaviour (Ajzen, 1991). Perceived behavioural control refers to an individual's perception of the presence or absence of the necessary resources, or opportunities necessary to perform a behaviour (Ajzen and Madden, 1986). Perceived behavioural control describes users' perceptions if they have the necessary resources such as time and money (external factors), capabilities such as the ability, confidence, and self-efficacy (internal factors) to successfully perform the behaviour.

Some studies have discussed that there are no consistent findings regarding this relationship in which some studies have found a positive and significant effect (Jamil 2012; Tan et al, 2010; Lee & Ngoc, 2010; Amoroso & Hunsinger, 2009; Lin, 2007). Another study discovered that there is no significant relationship between perceived behavioural control and intention of online shopping (Suntompithug & Khamalah,

2010; laohapensang, 2009; Nik Mat & Sentosa, 2008). Many studies discussed in many countries; Malaysia, China, Kuwait, Jordan e.t.c are focused on internet banking or e-banking (Khalil & Pearson, 2008; Ramayah et al, 2009a, 2009b; Al-Majali 2011, Abu Shanab & Pearson, 2007).

Limited studies conducted in Indonesia settings e-money mobile shows that higher levels of perceived control online purchasing behaviour should lead to a higher level of trust and intention to buy (Suntornpithug and Khamalab, 2010). Some empirical studies have found an association between PCB and intentions (eg Chau & Hu, 2001; Lau, 2002; Shih and Fang, 2004). Other studies also show that perceived behavioural control is positively related to behavioural intentions (Harrison et al, 1997; Jasman et al, 2005; Khalil & Pearson, 2008; Lu et al, 2009; Mathieson, 1991; Taylor & Todd, 1995a, 1995b; Truong, 2009). In the context of mobile services, the study also verifies that perceived behavioural control positively influence behavioural intentions (Hsu et al, 2006; Lee, 2010; Pedersen, 2005; Quan et al, 2010; Shin et al, 2009). Therefore, the second hypothesis for this study can be summarized as:

H<sub>3</sub>: Perceived behavioural control positively affects the intention to use e-money mobile.

### **3.11.4 Relationship between Awareness and Intention to Use E-Money Mobile**

Awareness of E-money mobile is limited. A previous study conducted by Sathye (1999) identified that the use of online banking services is a fairly new experience for many people, low awareness of online banking is a major factor that caused the limited adoption of online banking with people. Ramsey et al (1992) showed that awareness is a key determinant in helping people to act more environmentally friendly.

In an empirical study of Australian consumers, Sathye (1999) found that consumers are not aware of the possibilities, advantages/disadvantages involved with online banking. Therefore, Pikkarainen (2004) have reported the amount of information the customer has about Internet banking and its benefits may have a critical impact on the adoption of internet banking.

Basically, users want to control the type of data collected, for what purpose, how long the data will be recorded, how and for what purpose the data are processed (Kobsa, 2001; Kobsa, 2002). Additionally, Howcroft et al (2002) found that lack of awareness of Internet banking services and benefits is the reason why the consumer are reluctant to use internet banking services. It states that the most important factor in encouraging the use of online banking is lower

cost and the increased level of service and that service is free of errors.

There are another study that showed the low level of awareness of such services in China. Trappey and Trappey (2001) found that in the Chinese e-commerce, that there is a lack of influence of the market. The awareness and attitude to change are discovered to influence the adoption of Internet banking such as in Malaysia (Suganthi et al., 2001). However, the consumers are not willing to accept that they do not have full control over their own behaviour. They want to control their own actions and determine the causes and consequences of their own actions and others (Baronas and Louis, 1988) but collecting and recording user data are without consumer awareness of their concerns (DePallo, 2000; Kobsa, 2001, 2002). Therefore, we propose the following hypothesis:

H<sub>4</sub>: Awareness positively affects the intention to use e-money mobile

### **3.11.5 Relationship Perceived Risk between and Intention to Use e-Money Mobile**

Im et al. (2008) stated that the perceived risks or uncertainties affect people's confidence in their decisions. Stone and Gronhaug (1993) conceptualization, this study defines the perceived risk of a subjective expectation of loss. Many studies have shown the effect of perceived risk on the intentions relating to consumer behaviour in areas such as electronic commerce (Crespo et al, 2009; Kim et al, 2008; Park &



June, 2003; Belkhamza & Syed Azizi, 2009), e-filling system (Anna & Bee, 2010), purchase tickets on-line (Kim et al., 2005), the purchase by mail order (Simpson & Lakner, 1993), and internet banking (eg Aldas-Manzano et al., 2009; Ozdemir & Trott, 2009).

Especially in the context of mobile services, a study by Kleijnen et al. (2004) concerning the adoption of mobile gaming verify that perceived risk is the most important factor in the adoption of mobile games. Numerous studies have applied perceived the risk to consumer behaviour studies and further identify the multi-dimensional nature of the perceived risk construct (e.g. Featherman & Pavlou, 2003; Forsythe & Shi, 2003; Park, Lee, & Ahn, 2004). As noted by Kim *et al.* (2008).

The significant influence of perceived risk on intention to use has also been verified in a number of studies in Internet banking related (e.g. Aldas-Manzano *et al.*, 2009; Anna & Bee, 2010; Ozdemir & Trott, 2009). This finding validates the work of earlier studies by Chen (2008), Kleijnen et al. (2004), Lee and Lee (2007), Luo et al. (2010) and Wu and Wang (2005) that acknowledged perceived risk has a negative direct influence on consumers' intention to use the technology. The finding also supports the need for further verification by Yang & Zhang (2009) on the impact of perceived risk in a mobile service context. This result may contribute in terms of validation on the

impact of perceived risk in mobile marketing acceptance study that significantly influence intention to use.

The significant result in this study implies that perceived risk is one of the important factors that determine consumers' intention to use mobile marketing services. The importance of perceived risk has been established in prior studies (see Dowling & Staelin, 1994; Kleijnen *et al.*, 2004; Mitchell 1992; Taylor 1974; Yang & Zhang, 2009) which declared that perceived risk is a key element of the buyer-seller relationship. Additionally, perceived risk plays a crucial and important role in determining adoption process in a mobile context (Kleijnen *et al.*, 2004; Li & Bai, 2010). Many studies that improved it have disclosed the significant and negative effects of perceived risk on intention (e.g. Chen, 2008; Lee & Lee, 2007; Luo *et al.*, 2010; Wu & Wang, 2005). As mentioned above, risk perception is believed to influence consumers' willingness to adopt e-money mobile as a new micropayment system. Therefore, the relationship between risk perception and behavioural intention to use e-money mobile is validated as a negative relationship.

The study, therefore, present hypothesizes:

H<sub>5</sub>: Perceived risk negatively affects the intention to use e-money mobile

### **3.11.6 Relationship between Perceived Security and Intention to Use e-Money Mobile**

Perceived security is defined as the extent where consumers trust the safety of Internet for the transmission of sensitive information for business transactions (Kim and Shim, 2002). The perceived security has been examined in a number of studies towards intentions with the positive relationship in various countries such as Turkey, Taiwan, United States etc. (Ozkan, et al., 2010; Yu, Chieh & Ling, 2005; Salisbury, *et al.*, 2001). The situation might not be the same as the Indonesian e-money mobile consumers. It makes them build their intention to use e-money mobile if security problems can be solved or minimized. The study, therefore, present hypothesizes:

H<sub>6</sub>: Perceived security positively affects the intention to use e-money mobile

### **3.11.7 Relationship between Awareness and Relative Advantage towards Intention to Use e-Money Mobile**

Awareness is directly and positively influenced by the level of perception of the medium's relative advantages to other media alternatives (Rambocas & Arjoon, 2012). Rogers (1999, 2003) explained that the adoption process has been defined as the process through which individual adopters pass from awareness to full acceptance of a new innovation. Sathye's (1999) highlighted that

many consumers were simply unaware of internet banking and its unique benefits.

Another study found that non-users are unaware of many of the relative advantages of internet banking such as the ability to print receipts (unavailable in phone banking) and the ability to store Bpay (Australian business account) identifiers for a range of companies to which bills would regularly be paid (for example, utilities, credit card payments) because some non-users cited the lack of awareness of benefits as the reason why they had not adopted internet banking and lack of awareness of the relative advantages (Lichtenstein & Williamson, 2006). Benefits were regarded as relative and were compared to a 'satisfying' (or 'status quo') decision with many non-users suggesting their banking needs were already being met (Franco & Klein, 1999).

Therefore, we propose the following hypothesis:

H<sub>7</sub>: Awareness positively affects the relative advantage towards intention to use e-money mobile

### **3.11.8 Relationship between Complexity and Relative Advantage towards Intention to Use e-Money Mobile**

Complexity is defined as the degree to which an innovation is perceived as relatively difficult to understand and use" (Rogers, 1983). It represents the degree to which an innovation is perceived to be difficult to understand, learn or operate. Besides, it also becomes

innovative technologies that are perceived to be easier to use and less complex and have a higher possibility of acceptance and use by potential users. Therefore, the complexity would be expected to have a negative relationship with attitude. Complexity (and its corollary, ease of use) has been found to be an important factor in the technology adoption decision (Davis et al., 1989). As the Internet is very user-friendly with its “point and click” interface, it is likely that potential customers may feel that Internet banking services are less complex to use, and hence are more likely to use them.

Relative advantage is described as perceived usefulness. It is positively influenced by perceived ease of use while holding other conditions equal, the easier it is to use a technology, the more useful it can be (Venkatesh, 2000). According to the meta-analysis by King & He (2006), the major effect of ease of use on BI is actually through perceived usefulness indirectly. Emotional factors can affect perceived ease of use (Saadé and Kira, 2006; Venkatesh, 2000) and is expected to have a significant impact on perceived usefulness. Therefore, Ease of use’ – or usability – was frequently cited and found closely linked to individual perceptions of complexity (Lichtenstein & Williamson, 2006).

Therefore, this study proposes the following hypothesis:

H<sub>8</sub>: Complexity negatively affects the relative advantage towards an intention to use e-money mobile.

### **3.11.9 Decomposed of Attitude towards Intention to Use e-Money Mobile**

#### **3.11.9.1 Relationship between Relative Advantage and Attitude towards**

##### **Intention to Use e-Money Mobile**

Relative advantage (perceived usefulness) is one of the best and most consistent predictors of innovation adoption (Khalil & Pearson, 2008; Plouffe *et al.*, 2001; Teo & Pok, 2003). It has been tested in various studies have proved that there is a positive relationship towards attitude (Al-Gathani & King, 1999; Hu *et al.*, 1999; Khalil & Pearson, 2008; Morris & Dhillon, 1997; Taylor & Todd, 1995a).

Specifically in mobile context, numerous studies have been conducted and have revealed the significant and positive relationship towards attitude (e.g. Cheong & Park, 2005; Gu *et al.*, 2009; Park & Chen, 2007; Teo & Pok, 2003; Lu *et al.*, 2009; Yaghoubi, 2011; Schierz *et al.*, 2010; Hong *et al.*, 2008; Hsu *et al.*, 2006; Pedersen, 2005). Therefore, this study proposes the following hypothesis:

H<sub>9</sub>: Relative advantage positively affects the attitude towards intention to use e-money mobile

#### **3.3.9.2 Relationship between Complexity and Attitude toward**

##### **Intention to Use e-Money Mobile**

The complexity is expected to have a negative relationship with attitude. Complexity is defined as the extent to which an innovation is regarded as relatively difficult to understand and use" (Rogers,

1983). Thus, the complexity (and its consequences, ease of use) has been found to be an important factor considered to be easier to use and less complex has a higher likelihood of acceptance and use of potential users. The effect of complexity (its corollary of perceived ease of use) on attitude has been established by various studies (e.g. Bhattacharjee, 2000; Karahanna *et al.*, 1999; Khalil & Pearson, 2008; Lau, 2002; Morris & Dhillon, 1997; Shih & Fang, 2004; Taylor & Todd, 1995a).

Shin *et al.* (2009) in determining the users' acceptance of Multimedia Messaging Services (MMS) also state that perceived ease of use has a positive influence on attitude towards MMS use intention. The significant and positive relationship between complexity and attitude has been verified in a number of mobile related studies (Cheong & Park, 2005; Hong *et al.*, 2008; Kuo & Yen, 2009; Park & Chen, 2007; Schierz *et al.*, 2010; Tsai, 2010).

Therefore, this study proposes the following hypothesis:

H<sub>10</sub>: Complexity negatively affects the attitude towards intention to use e-money mobile

### **3.11.10 Decomposed of Subjective Norm towards Intention to Use e-Money Mobile**

#### **3.11.10.1 Relationship between Social Cultural Influence, Family and Subjective Norm towards Intention to Use e-Money Mobile**

Culture usually points out the possible means of perception, thought, and action of human behaviour. According to Cyr (2004), culture is the level to which individuals disseminate values, beliefs, as well as behaviours. Another tested by Barber and Badre (1998) states that culture is an identifying element of a particular country and a way of differentiating their websites. A comparison in previous studies tested between Chinese and Indonesian users, Evers and Day (1997) looked into interface acceptance and concluded that Indonesian users placed a higher value on ease of use than functionality as opposed to Chinese users.

Syarief et al. (2003) found that there are significant differences between Indonesian and American users in the way they interpret different types of messages and the speed they interpret those messages. This is linked to intention, as it is perceived that people often behave based on how others think they should. Based on the study by Putit & Arnott (2007), studies using previous models of subjective norm, and equating it to the social environment, revealed that norms impact purchase behaviour of local brands. Subjective norms can be defined as, “the person’s perception that



most people who are important to him/her think he/she should not perform the behaviour under question” (Fishbein & Ajzen, 1975 cited in Margaret & Thompson, 2000). It also revealed beliefs to the group’s expectations.

The family is an institution or group’s perception that is viewed to be the most critical purchasing unit in society, based on several studies. Firms and industries are concerned with the actions that impact the husband, wife, and children in the direct purchasing of items on a daily basis. In light of the family, a customer’s purchase behaviour is viewed through the environment, as it is the deciding factors in gauging the level of changes in society; in other words, by group thinking.

The study by Chiason & Lovato (2001), family affects local brand purchase, while Morris & Venkatesh (2000) revealed that purchase intention of workers in choosing a format of purchase behaviour of local brands are influenced by subjective norms or their families; these are the norms of the family or the local circle of influence. Taylor & Todd (1995) emphasized on work colleagues and organizational culture. This is particularly true in the context of the immediate society as opposed to global social norms. Many studies have tested that family is positively respond to subjective norm limited to e-banking (Bhattacharjee, 2000; Hsu *et al.*, 2006; Khalil

and Pearson, 2008; Shin *et al.*, 2009; Jung & Kau, 2004; Al-Majali and Nik Kamariah, 2010; Chong *et al.*, 2010; Hong *et al.*, 2008).

Therefore, this study proposes the following hypothesis:

H<sub>11</sub>: Social cultural influence positively affects the subjective norm towards intention to use e-money mobile

H<sub>12</sub>: Family positively affects the subjective norm towards intention to use e-money mobile

### **3.11.11. Decomposed of Perceived Behavioral Control towards e-Money Mobile**

#### **3.11.11.1 Relationship between Self-confidence, Resources Facilitating Conditions and Perceived Behavioural Control towards Intention to Use e-Money Mobile**

Self-confidence (analogous self-efficacy in generally) reflects an individual's conviction in his or her ability to perform a behaviour (Taylor & Todd, 1995). Consistent with the original definition of perceived behavioural control, prior research investigating technology usage behaviour has shown self-efficacy, resource facilitating conditions, and technology facilitating conditions to be determinants of the perceived behavioural control (Taylor & Todd, 1995a). The individuals' internal perception of behavioural control reflects their self-confidence on the ability to perform the behaviour. People's beliefs in their efficacy will influence the

choice that they make. The individuals' external perception of behavioural control is concerned on the availability of resources (e.g. money, time and other resources) and technical compatibility that is needed in performing the behaviour. Concerning IT usage, the facilitating condition construct provides two dimensions for control beliefs which are related to resource factors such as time and money and relating to technology compatibility that may inhibit usage (Taylor & Todd, 1995a). With regard to the above and following the work by Taylor and Todd (1995a), this study present decomposes perceived behavioural control into self-efficacy as an internal factor, resource facilitating conditions and technology facilitating conditions as external factors. Self-efficacy is the belief that one has the capability to perform a specific behaviour. In this study, it is believed that individuals who have high self-confidence (i.e. self-efficacy) to execute mobile marketing services will perceive that they have the capability, which is high perceived behavioural control to use the technology. The higher their confidence in engaging in the mobile marketing services, the greater their perceived control over the behaviour.

Numerous studies have confirmed the effect of self-efficacy, resource facilitating conditions, and technology facilitating conditions on perceived behavioural control. A study by Taylor and Todd (1995a) has revealed that self-efficacy and resource-

based facilitating conditions (i.e. time and cost-related measures) are significant determinants of perceived behavioural control. In another study of intention to use VCR-Plus +™ by Taylor and Todd (1995b) have also discovered similar results, self-efficacy and facilitating conditions are significant determinants of perceived behavioural control.

Bhattacharjee (2000) conducted a study on intention to use e-brokerage, who also found that the control factors (Self-efficacy and resource facilitating conditions) a significant effect on perceived behavioural control. Lau (2002) has proved that resource facilitating condition and technology facilitating condition have positively affected perceived behavioural control. The significant role of self-efficacy on adoption of the technology can also be found in other studies (e.g. Shih & Fang, 2004; Vijayasathy, 2004; Wang *et al.*, 2003). It has proved the similar result, that is, self-efficacy has a positive effect on perceived behavioural control (Hsu *et al.*, 2006). A study by Khalil and Pearson (2008) discovered that self-efficacy and resource facilitating conditions have positively affected perceived behavioural control. Their study concluded that efficacy or confidence to use Internet banking might affect an individual's perception of behavioural control and in turn, would affect the intention to use the technology. Their study also suggests that external factors which are the availability

of resources can also affect an individual's perception of the ease or difficulty on intention to use Internet banking. Shin *et al.* (2009) conducted a study on acceptance of multimedia messaging services (MMS) and proved the relationship between self-efficacy, technology facilitating condition and perceived behavioural control. Their study has confirmed that self-efficacy and technology facilitating conditions have significant effects on perceived behavioural control.

As noted by Taylor and Todd (1995b), key facilitating conditions are the money, time and technology that are needed to make use of the innovation. Essentially, the absence of any of these facilitating conditions represents barriers to adoption and may hinder the formation of intention. In view of previous studies, this study present also hypothesizes that self-efficacy, resource facilitating condition and technology facilitating condition will affect perceived behavioural control. Therefore, the following hypotheses are proposed:

H<sub>13</sub>: Self-confidence positively affects the perceived behavioural control towards intention to use e-money mobile

H<sub>14</sub>: Resources facilitating conditions positively affects the perceived behavioural control towards intention to use e-money mobile

## Summary

This chapter discussed the underpinning theory to investigate the consumers' intention to use e-money mobile in Indonesia. The Decomposed Theory of Planned Behavior (DTPB) become the basic theory to support this study. Other studies that support this study are also discussed which includes; TRA, TAM, TPB, and UTAUT. This chapter, therefore, ended with a research framework.



## **CHAPTER 4**

### **METHODOLOGY**

#### **4.1 Introduction**

The decomposed theory of planned behaviour (DTPB) is the basis theory to investigate consumers' intention in using e-Money mobile as a micropayment transaction method. This chapter discusses in details the research framework, hypothesis, operational definitions, questionnaires design, and method for the collection of the questionnaires before interpreting them using statistical analysis.

#### **4.2 Research Design**

This study conducts a cross-sectional analysis in the time domain to measure all variables by examining a phenomenon, taking a cross-section of it one at a time and analysing that cross section carefully. A cross-sectional study is used because it finds the existent relationship in significant value (Rubin & Babbie, 2010). In the cross-sectional field, the researcher makes observations at one point of time and all other variables as possible are measured simultaneously (Yegidis, Weinbach & Myers, 2012). It explains the relationship between variations in one factor corresponding to variations in one or more other factors based on the correlation coefficient (Isaac & Micheal, 1990). The data are collected and analysed through a quantitative approach which would address the research problems, research questions, research objectives, and its hypothesis. Such quantitative approach will involve finding a value for this research (Sekaran & Bougie, 2010).

Quantitative analysis is defined as “the numerical representation and manipulation of observation for the purpose of describing and explaining the phenomena that those observations reflect” (Babbie, 2011). This technique presents the data in a numerical form suitable for statistical analyses. Quantitative approach interprets the data in numeric quantification and it deals with questions of what, where and why which are specific to explain the independent variables or predict the dependent variable (Thyer, 2010).

The quantitative approach also brings some weaknesses as it fails to reflect an intertwined human thought process and lacks the flexibility to modify the research design at any time (Yedigis & Weinbach, 1996; Rubin & Babbie, 2010). However, this research is suitable to be used with the quantitative method, which can test the hypothesis under consideration as adapted by other researchers. Also, quantitative approach takes on larger sample sizes which emphasize the numbers on nature of data and standardizes sampling and measurements. It verifies the cause or effect in general research procedures to adhere precisely to the data, which is collected in maximum objectivity and generalization (Rubin & Babbie, 2010, 2011).

This study uses survey method which is the most appropriate method towards the intention to using e-money mobile in Indonesia (Chellapa, 2002). Various previous studies that used DTPB as underpinning theory have discussed by using the survey method research areas such as mobile marketing services (Ismail, 2012), visit behavior (Muala, 2010), culture and language on the user acceptance of the media website (Ta’amneh, 2012). Therefore, the survey



method is the most appropriate method in this study due to the large number of population that is distributed efficient and inexpensive (Zikmund, 2000). The unit analysis for this study was mobile phone users aged 18-56. This method is administrated around shopping complex which is chosen due to its location within a central business activity (Bush & Hair, 1985; Gates & Solomon, 1982).

To present the study, a questionnaire, with questions and statements adapted from a prior study, is prepared after relating it with current framework and its hypothesis. However, the format for the questionnaire is important in terms of the wording or the question to be asked, because any misunderstanding of the terms and questions can lead to unintended responses affecting the data collection. Considering this effect, the questionnaires' guidelines suggest being very clear and easy for an understanding of the respondents. Besides, the questionnaire is advised not to take too long time and squeeze on several questions into a single line, because it affects the understanding of the respondents and focuses on the next questions.

In some situation, the respondents misinterpret the abbreviated questions. Moreover, it is essential not to spend too long time and focus on the first page of a questionnaire to have respondents' profile. It is rather important to quickly complete the important questions which represent all of the variables used in the framework and its hypothesis. It helps the researcher to reduce errors and abbreviation of questions (Rubin & Babbie, 2010).

The questionnaire (see Appendix 1) is adapted from previous researchers who did the test between factors affecting the behavioural intentions. This questionnaire is distributed to the respondents who use a mobile phone as a tool to avail e-money mobile transaction. The first section of the questionnaire presents the profile of the respondents to gather their personal information which includes gender, age, income/ month, educational level, job, city/ district and additional question to confirm the respondents' subscription or use of mobile phone.

The second section consists of five parts based on dependent and independent variables. Part one comprises of behavioural intention as an independent variable which is measured by 7 questions from question 1 to 7. Second part measures relative advantages as the first antecedent by 6 questions from question 8 to 13. Third part measures complexity by 6 questions from question 14 to 19. Fourth part measures perceived risk by 9 questions from question 20 to 28. Then, part 5 measures security by 7 questions from question 29 to 35. Part 6 measures social cultural influence by 12 questions from question 36 to 47. Part 7 measures awareness by 4 questions from question 48 to 51. Part 8 measures attitude by 3 questions from question 52 to 54. Part 9 measures subjective norm by 5 questions from question 55 to 59. Part 10 measures perceived behavioural control by 3 questions from question 60 to 62. Part 11 measures self-confidence by 3 questions from question 63 to 65. Part 12 measures resources facilitating condition by 3 questions from

question 66 to 68. Finally, the last part comprises of measures family by 3 questions from question 69 to 71.

For the second section, the questionnaire is provided with an instruction to cycle the respondents' choice which uses Likert-scale type. In the Likert scale, respondents require supplying their level of agreement on each item as intensity for their feeling. Besides, Likert-scale contains positive items and reversal items (Yegidis, Weinbach & Myres, 2012). The positive items present if the respondents have a high level of agreement on what they have selected. High level of the agreement reflects too high variable quantity to be measured and low level of agreement of their choice reflects too low variable quantity to be measured.

In contrary, reversal items reflect the respondent who has a high level of agreement which is presented as low variable quantity. It purposes to determine the respondents' answer to the questions in questionnaire honestly. To avoid careless response to the questions in questionnaire, this research conducts the questions in the questionnaire with reversal item on seven-point, ranging from (1) "strongly disagree" to (7) "strongly agree" that is adapted from the prior study and is presented in the framework and its hypothesis (see Appendix 1).

#### **4.4.1 Instrument of the Study**

The questionnaire is used as an instrument of the study that examines the relationship between variables such as relative advantages, complexity,

perceived risk, perceived security, attitude, subjective norm, awareness, perceived behavioural control, social cultural influence, family, self-confidence and resources facilitating condition on consumers' behavioural intention adapted by decomposed theory planned behaviour (DTPB) introduced by Davis et al (1989). The questionnaire consists of two parts, namely, part A and Part B.

Part A, describes the purpose of the study where all of the questions are related to the construct of the research; relative advantages, complexity, perceived risk, perceived security, attitude, subjective norm, awareness, perceived behavioral control, social cultural influence, family, self-confidence and resources facilitating condition that constitute 35 questions using a seven-point scale (from 1: strongly agree to 7: strongly disagree).

Part B, the questionnaire is developed to get the information relates to the consumers' intention to use e-Money mobile. The questionnaire is developed to get some demographic characteristics (gender, age, income per month, educational level, and job). The demographic characteristics are one of the important constructs to put in questionnaire because it has been used in similar studies such as relate to the attitude of consumer towards online purchasing (Wood, 2002). In addition, a question related to internet environment and online shopping like the primary use of the internet and online shopping experience and credit card with the type of payment on the internet has been included.

Many researchers have used and applied the seven-point numerical scale for data collection (e.g. Morgan & Hunt, 1994; Luck & Rubin, 1987; Ryu et al., 2007; Han, Hsu & Sheu, 2010). The numerical scale is presented in Table 4.1. The main advantage of a seven-point scale is its ability to detect smaller differences from respondents.

Table 4.1

*Seven-Point Numerical Scale*

<b>Scales</b>	Strongly Disagree	Somewhat Disagree	Disagree	Undecided	Agree	Somewhat Agree	Strongly Agree
<b>Items</b>	1	2	3	4	5	6	7

In this study, the Likert scale was used to measure the responses since this scale is widely used in marketing research and has been extensively tested in both marketing and social science (Garland, 1991). However, there is no clear rule that indicates the suitable number that should be used (one to five-point Likert scales or one to seven-point Likert scales). However, researchers indicate that a seven-point scale is just as good as any other scale (Fomell, 1992; Solnet, 2006). Therefore, to ensure consistency among the variables and to avoid confusion among respondents, all items were measured using one to seven-point Likert scale, which ranged from '1 "strongly disagree' to '7' 'strongly agree". Many researchers have used and applied the seven-point numerical scale for data collection (e.g. Morgan & Hunt, 1994; Luck & Rubin, 1987; Ryu et al., 2007; Han, Hsu & Sheu, 2010). The descriptions of the questionnaire consist of two parts, namely, part A and Part B are described in table 4.2 as follow.

Table 4.2

*Description of the items in questionnaire*

<b>Part</b>	<b>Factor measured</b>	<b>Scale</b>	<b>Total item</b>	<b>No item</b>
Part A	Information about research			
	Behavioral intention	Interval	7	1 to 7
	Relative advantage		6	8 to 13
	Complexity		6	14 to 19
	Perceived risk		9	20 to 28
	Perceived security		7	29 to 35
	Social cultural influence		12	36 to 47
	Awareness		4	48 to 51
	Attitude		3	52 to 54
	Subjective Norm		5	55 to 59
	Perceived Behavioral Control		3	60 to 62
	Self-Confidence		3	63 to 65
	Facilitating Conditions		3	66 to 68
	Family		3	69 to 71
Part B	Profile respondents and Information relates to the consumers' intention to use e-money mobile		Nominal	12

Part one comprises of behavioural intention as an independent variable which is measured by 7 questions from question 1 to 7. Second part measures relative advantages as the first antecedent by 6 questions from question 8 to 13. Third part measures complexity by 6 questions from question 14 to 19. Fourth part measures perceived risk by 9 questions from question 20 to 28. Then, part measures security by 7 questions from

question 29 to 35. Part measures social cultural influence by 12 questions from question 36 to 47. Part measures awareness by 4 questions from question 48 to 51. Part measures attitude by 3 questions from question 52 to 54. Part measures subjective norm by 5 questions from question 55 to 59. Part measures perceived behavioural control by 3 questions from question 60 to 62. Part measures self-confidence by 3 questions from question 63 to 65. Part measures resources facilitating condition by 3 questions from question 66 to 68. Finally, the last part comprises of measures family by 3 questions from question 69 to 71.

#### **4.4.1.1 Relative Advantage**

Relative advantage refers to the degree to which an innovation is perceived as providing more benefits than its predecessor (More & Benbasat, 1991). Relative advantage is analogous to the perceived usefulness (Davis, 1989). This variable used a seven-point scale (from strongly agree to strongly disagree). The items were adapted from Tan & Teo, (2000); Taylor and Todd, (1995b); and Davis, (1989) who reported the instruments' reliability more than 0.7. Each instrument is reliable and accepts the coefficient alpha (Nunnally, 1978).

Table 4.3

*Description of the questions in questionnaire*

Authors	Questions
Tan & Teo, 2000; Taylor and Todd, 1995b; Davis, 1989	<ol style="list-style-type: none"> <li>1. Using e-Money in mobile phone would enable me to accomplish tasks more quickly</li> <li>2. Using e-Money in mobile phone would improve my mobile phone performance</li> <li>3. Using e-Money in mobile phone would increase my productivity</li> <li>4. Using e-Money in mobile phone would enhance my effectiveness on mobile phone</li> <li>5. Using e-Money in mobile phone would make it easier to do on mobile phone</li> <li>6. I would find e-Money useful in mobile phone</li> </ol>

**4.4.1.2 Complexity**

Complexity refers to the degree to which an innovation is considered relatively difficult to understand and use (Taylor & Todd, 1995) it is analogous to the consequences of perceived usefulness (Davis, 1989). This variable used a seven-point scale (from strongly agree to strongly disagree). The items were adapted from Tan & Teo (2000); Laukkanen & Cruz (2009), Taylor and Todd (1995b); Fred D. Davis (1989) who reported the instruments's realibility more than 0.7. Each instrument is reliable and accepts the coefficient alpha (Nunnally, 1978).



Table 4.4

*Description of the Complexity questions in questionnaire*

Authors	Questions
Tan & Teo, 2000; Laukkanen & Cruz; 2009, Taylor and Todd, 1995b; Fred D. Davis, 1989	<ol style="list-style-type: none"> <li>1. Learning to operate e-Money in mobile phone would be easy for me</li> <li>2. I would find it easy to get e-Money in mobile phone to do what I want it to do</li> <li>3. My interaction with e-Money in mobile phone would be clear and understandable</li> <li>4. I would find e-Money in mobile phone to be flexible to interact with</li> <li>5. It would be easy for me to become skillful at using e-Money in mobile phone</li> <li>6. I would find e-Money in mobile phone easy to use</li> </ol>

**4.4.1.3 Perceived risk**

Perceived risk refers to the perceived sense of risk concerning disclosure of personal and financial information (Tan & Teo, 2000). The items were adapted from Mauricio S. Feathermana & Paul A. Pavlou (2003); Laukkanen & Cruz (2009); Ndubisi & Sinti (2006) who reported the instruments' reliability more than 0.7. Each instrument is reliable and accepts the coefficient alpha (Nunnally, 1978).

Table 4.5

*Description of the Perceived Risk questions in questionnaire*

Authors	Questions
Mauricio S. Featherman a & Paul A. Pavlou, 2003; Laukkanen & Cruz, 2009; Ndubisi & Sinti, 2006	<ol style="list-style-type: none"> <li>1. There are chances that I stand to lose money if I use the e-Money in mobile phone</li> <li>2. Using an e-Money in mobile phone services subjects my checking account to potential fraud</li> <li>3. My signing up for and using an e-Money in mobile phone would lead to a financial loss for me</li> <li>4. Using an e-Money in mobile phone services subjects my checking account to financial risk</li> <li>5. The e-Money in mobile phone might not perform well and create problems with my credit</li> <li>6. The security systems built into the e-Money in mobile phone are not strong enough to protect my checking account</li> <li>7. There is likelihood that there will be something wrong with the performance of the e-Money in mobile phone or that it will not work properly</li> <li>8. Considering the expected level of service performance of the e-Money in mobile phone for me to sign up for and use it would be</li> <li>9. e-Money in mobile phone may not perform well and process payments incorrectly</li> </ol>

**4.4.1.4 Social cultural influence**

The items were adapted from Viswanath Venkatesh, Michael G. Morris, Gordon B. Davis, & Fred D. Davis (2000) who reported the instruments's realibility more than 0.7. Each instrument is reliable and accepts the coefficient alpha (Nunnally, 1978).

Table 4.6

*Description of the Social Cultural questions in questionnaire*

Authors	Questions
Viswanath Venkatesh, Michael G. Morris, Gordon B. Davis, & Fred D. Davis (2000)	<ol style="list-style-type: none"> <li>1. Cultural and people who influence my behavior think that I should use e-Money in mobile phone</li> <li>2. Cultural and people who are important to me think that I should e-Money in mobile phone</li> <li>3. The cultural, relatives and friends have been helpful in the use of e-Money in mobile phone</li> <li>4. In general, the social and cultural environment has supported the use of e-Money in mobile phone</li> <li>5. If a relative were in financial difficulty to use e-money on mobile phone, I would help within my means</li> <li>6. I like sharing little things about e-money on mobile phone with my neighbor</li> <li>7. It annoys me when other people perform e-money on mobile phone better than I do</li> <li>8. I usually sacrifice my self-interest for the benefit to using e-money on mobile phone of my group</li> <li>9. I hate to disagree with others in my group about e-money on mobile phone</li> <li>10. When another people does transaction e-money on mobile phone better than I do, I get tense and provoked</li> <li>11. When I succeed on e-money on mobile phone, it is usually because of my abilities</li> <li>12. I prefer to be direct and forthright when discussing with people about e-money on mobile phone</li> </ol>

**4.4.1.5 Perceived security**

The items were adapted from Nykvist & Stalfors (2011); Nysveen et al. (2005); Schierz, et al. (2010); Chen (2008) who reported the instruments's realibility more than 0.7. Each instrument is reliable and accepts the coefficient alpha (Nunnally, 1978).

Table 4.7

*Description of the Security questions in questionnaire*

<b>Authors</b>	<b>Questions</b>
Nykvist & Stalfors, 2011; Nysveen et al., 2005; Schierz, et al., 2010; Chen, 2008	<ol style="list-style-type: none"> <li>1. The risk of an unauthorized e-Money in mobile phone overseeing the payment process low</li> <li>2. The risk of abuse of confidential information of e-Money in mobile phone is low when using mobile payment services</li> <li>3. I would find e-Money in mobile phone services secure in conducting my payment transactions</li> <li>4. The authorized username and password e-money on mobile phone are important</li> <li>5. I do not save my login number and password on the e-money on mobile phone</li> <li>6. I do not leave on mobile phone unattended, while connected to the e-money services</li> <li>7. Trust affects the demand for e-money on mobile phone services</li> </ol>

**4.4.3.6 Awareness**

The items were adapted from Safeena, Date, Kammani, and Hundewale (2012); Lin (2010); Rogers (1999), (2003); Sathye (1999) reported the instruments's realibility more than 0.7. Each instrument is reliable and accepts the coefficient alpha (Nunnally, 1978).

Table 4.8

*Description of the Awareness questions in questionnaire*

<b>Authors</b>	<b>Questions</b>
Safeena, Date, Kammani, and Hundewale, 2012; Lin, 2010; Rogers, 1999; 2003; Sathye, 1999	<ol style="list-style-type: none"> <li>1. I receive enough information about electronic money in mobile phone</li> <li>2. I receive enough information about the benefits electronic money in mobile phone</li> <li>3. I receive enough information of using electronic money in mobile phone</li> <li>4. I never received information about electronic money on the mobile phone.</li> </ol>

#### 4.4.3.7 Attitude

The items were adapted from Karjaluoto et al. (2002); Sandland (2000); Suganthi et al. (2001); Ajzen (1991); Davis et al (1989); Al-Debei et al, (2013) who reported the instruments's realibility more than 0.7. Each instrument is reliable and accepts the coefficient alpha (Nunnally, 1978).

Table 4.9

*Description of the attitude questions in questionnaire*

Authors	Questions
Karjaluoto et al., 2002; Sandland, 2000; Suganthi et al., 2001; Ajzen, 1991; Davis et, 1989; Al-Debei et al, 2013	<ol style="list-style-type: none"><li>1. I have positive opinion in electronic money on mobile phone</li><li>2. I think continuance usage electronic money on mobile phone is good for me</li><li>3. I think continuance usage electronic money on mobile phone is appropriate for me</li></ol>

#### 4.4.3.8 Subjective Norm

The items were adapted from Tan & Teo (2000); Davis et al. (1989); Miller, 2005; Azmi et al. (2010); Dholakia et al (2004) who reported the instruments's realibility more than 0.7. Each instrument is reliable and accepts the coefficient alpha (Nunnally, 1978).

Table 4.10

*Description of the Subjective Norm questions in questionnaire*

<b>Authors</b>	<b>Questions</b>
Tan & Teo, 2000; Davis et al., 1989; Miller, 2005; Azmi et al., 2010; Dholakia et al, 2004	<ol style="list-style-type: none"> <li>1. People who influence my behavior think that I should use electronic money in mobile phone</li> <li>2. People who are important to me think that I should use electronic money in mobile phone</li> <li>3. People whose opinions I value think I should use electronic money in mobile phone</li> <li>4. People who are close to me think that I should use electronic money in mobile phone</li> <li>5. People who influence my decisions think that I should use electronic money in mobile phone</li> </ol>

**4.4.3.9 Perceived Behavioural Control**

The items were adapted from Tan & Teo (2000); Chen (2007); Kang et al. (2006); Miller (2005); Armitage et al (1999); Al-Debei et al, (2013) who reported the instruments's realibility more than 0.7. Each instrument is reliable and accepts the coefficient alpha (Nunnally, 1978).

Table 4.11

*Description of the Behavioural Control questions in questionnaire*

<b>Authors</b>	<b>Questions</b>
Tan & Teo, 2000; Chen, 2007; Kang et al., 2006; Miller, 2005; Armitage et al, 1999; Al-Debei et al, 2013	<ol style="list-style-type: none"> <li>1. I will be able to use the e-money in my mobile so well when in payment transaction</li> <li>2. Using e-money in mobile is entirely within my control</li> <li>3. I have the resources, knowledge, and ability to use e-money in my mobile</li> </ol>

#### 4.4.3.10 Self-Confidence

The items were adapted from Taylor & Todd (1995); Miller (2005) who reported the instruments's realibility more than 0.7. Each instrument is reliable and accepts the coefficient alpha (Nunnally, 1978).

Table 4.12

*Description of the Self Confidence questions in questionnaire*

Authors	Questions
Taylor & Todd, 1995; Miller, 2005	<ol style="list-style-type: none"> <li>1. I am confident of using electronic money in mobile phone even if there is no one around to show me how to use it</li> <li>2. I am confident of using electronic money on mobile phone even if I have never used it before</li> <li>3. I am confident of using electronic money on mobile phone if I have only the online instructions for reference</li> </ol>

#### 4.4.3.11 Resources Facilitating Conditions

The items were adapted from Taylor & Todd (1995); Tan & Teo (2000) who reported the instruments's realibility more than 0.7. Each instrument is reliable and accepts the coefficient alpha (Nunnally, 1978).

Table 4.13

*Description of the Facilitating Conditions questions in questionnaire*

Authors	Questions
Taylor & Todd, 1995; Tan & Teo, 2000	<ol style="list-style-type: none"> <li>1. The resources needed to use electronic money in mobile phone are available to me</li> <li>2. I could easily get access to the resources that are needed to use electronic money in mobile phone</li> <li>3. I have sufficient resources to use electronic money in mobile phone</li> </ol>

#### 4.4.3.12 Family

The items were adapted from Vermier & Verbeke (2008); Rhodes, Blanchard, and Matheson (2006) who reported the instruments' reliability more than 0.7. Each instrument is reliable and accepts the coefficient alpha (Nunnally, 1978).

Table 4.14

*Description of the Family Related questions in questionnaire*

Authors	Questions
Vermier & Verbeke, 2008; Rhodes, Blanchard, and Matheson, 2006	<ol style="list-style-type: none"><li>1. I use electronic money in mobile phone because my family uses it</li><li>2. I will have to use electronic money in mobile phone if my family has already used it</li><li>3. I have to use electronic money in mobile phone because my family thinks I should use it</li></ol>

#### 4.3.3.13 Intention to Use

The items were adapted from Ja-Chul Gu, Sang-Chul Lee & Yung-Ho Suh (2009); Carolina Lopez-Nicolas, Francisco J. Molina-Castillo, Harry Bouwman (2008) who reported the instruments' reliability more than 0.7. Each instrument is reliable and accepts the coefficient alpha (Nunnally, 1978).



Table 4.15

*Description of the Intention to Use questions in questionnaire*

Authors	Questions
Carolina Lopez-Nicolas, Francisco J. Molina-Castillo, Harry Bouwman, 2008; Ja-Chul Gu, Sang-Chul Lee & Yung-Ho Suh, 2009)	<ol style="list-style-type: none"> <li>1. I intend to use e-Money in mobile phone continuously in the future</li> <li>2. I will recommend others to use e-Money based in mobile phone</li> <li>3. I will frequently use e-Money in mobile phone in the future</li> <li>4. I will definitively keep using advanced mobile services on e-money transaction payment.</li> <li>5. I expect to be using advanced mobile services on e-money transaction payment in the future as well</li> <li>6. I expect that advanced mobile services on e-money transaction payment will make everything easier in the future</li> <li>7. I think other should use advanced mobile services as well on e-money transaction payment</li> </ol>

#### 4.5 Operational Definition

An operational definition is defined as “the operations, or indicators, we will use to determine the quantity or attribute we observe about a particular variable” (Rubin & Babbie, 2011). According to the definition, operational definition reflects the meaning of variables that are used to measure the hypothesis of the study. The operational definition transforms all the variables in the study perceivable or perceived. Cooper & Schindler (2011) stated that operational definition is explained as a term of criteria that are used for specific measurements. All of the terms for testing have to be standardized. To state the operational definitions, researchers have to determine the way to choose the measurement based on the purpose of the study, because it is critical to treat the abstract ideas in order to provide more understanding of the

concepts of measurements. Besides, it is mostly used to define the relationship found within theories and its hypothesis.

An operational definition reflects more on nominal than real. Nominal specifies how the term is simply assigned to a term without any interruption or claim. A nominal usually represents more on consensus, or convention referring to a particular term that is needed to be used (Babbie, 2011). So, the operational definition achieves maximum clarity regarding what a concept means in the context of a given study. Consequently, the operational definitions are assigned to learn precisely how the concept to be measured, because the understanding of the operational definition will then be interesting for the finding, which will eventually add more benefits to the purpose of the study. The definitions of variables in this study are as follows:

Table 4.16

*Operational Definitions*

No	Variable	Name Definition
1	Intention to use	An individual's subjective probability of performing specific behaviour (Ajzen, 1985; Ajzen & Fishbein, 1980)
2	Attitude	Attitude as the individual's positive or negative feelings about performing a behaviour (Ajzen, 1991)
3	Subjective norm	The person's perception of the social pressure for him/her to perform or not to perform the behaviour (Ajzen, & Fishbein,1980)
4	Perceived behavioural control	The person's perception of their ability to perform the behaviour (Ajzen, 1988).
5	Awareness	Understanding whether the customer is aware or not aware of the service itself and its benefits (Sathye, 1999)
6	Perceived risk	Consumer's perceptions of the uncertainty and adverse consequences associated with buying a product (or service) (Cunningham, 1967)

Table 4.16 (Con't)

No	Variable	Name Definition
7	Perceived security	Perceived security is conceptualized as the extent to which consumers believe that the internet is secure for transmitting sensitive information for business transactions (Kim & Shim, 2002).
8	Relative Advantage	The extent to which a person views an innovation as offering an advantage over previous ways of performing the same task (Taylor & Todd, 1995).
9	Complexity	The degree to which an innovation is considered relatively difficult to understand and use (Taylor & Todd, 1995).
10	Social Cultural influence	The degree that people perceived the importance of using new technology by others beliefs and disseminate values, beliefs as well as behaviours (Venkatesh et al.,2003; Cyr, 2004)
11	Family	The influence of pressure from known (family) to perform the behaviour (Ng & Rahim,2005)
12	Self-confidence	An individual's self-conviction in his or her ability to perform a behaviour (Taylor & Todd, 1995)
13	Facilitating Conditions	The impact of technical and organizational infrastructure to back the usage of online banking that contains user's ability, knowledge, and resources (Venkatesh et al., 2003)

#### 4.6 Measurement of Variable

The measurement in the quantitative method is designed precisely. The techniques develop data to bring it into a form of numbers which move from ideas of abstract or all variables into specific techniques of data collection and precise numerical information as a representative for ideas of abstract (Neuman & Kreuger, 2003). To know the degree of precision on all variables that is believed to be measured, there are 4 levels of measurement such as nominal level, ordinal level, interval level, and ratio level (Yegidis & Weinbach, 1996). The following table 4.17 describes the comparisons between 4 measurement levels.

Table 4.17

*Characteristics of the 4-Level Measurement*

Level	Different categories	Ranked	Distance between categories measured	True zero
Nominal	Yes	-	-	-
Ordinal	Yes	Yes	-	-
Interval	Yes	Yes	Yes	-
Level	Different categories	Ranked	Distance between categories measured	True zero
Ratio	Yes	Yes	Yes	Yes

Source: Neuman & Kreuger, 2003

Based on the comparison in table 4.17, nominal scale, ordinal scale, and ratio scale are more appropriate to measure all the variables in this study. Nominal scale is defined as “A variable whose attributes have only the characteristics of exhaustiveness and mutual exclusiveness” (Babbie, 2011). The attribute composing the variable in this study is gender which consists of female and male as profile respondents in the questionnaire. In ordinal scale, the attributes are more logically ranked and the variables of this type are a social class, race, client satisfaction, and the ordinal scale is also called Likert scale (Rubin & Babbie, 2011).

The attributes composing the variable in this study are educational level and jobs following the profile respondents in the questionnaire. For ratio scale, the attributes composing variable need to be structural in characteristic and

accept for zero-based point (Babbie, 2011). In this study, age and income per month are measured into ratio scale. The following table 4.18 describes construct and measurement levels in the questionnaire part 1 as respondents' profile.

Table 4.18

*Description of the 4-Level Measurement and Variables in Respondents' profile*

<b>Level</b>	<b>Gender</b>	<b>Age</b>	<b>Income per month</b>	<b>Educations level</b>	<b>jobs</b>
Nominal	Yes	-	-	-	-
Ordinal	-	-	-	Yes	Yes
Interval	-	-	-	-	-
Ratio	-	Yes	Yes	-	-

All constructs are tested through validity and reliability test. Each instrument will be considered reliable if it can measure what it wants to measure (Nunnally, 1978). All of the items are initially developed in English, but it will be translated into Indonesian with slight modifications from many transactions, such as E-commerce, Internet Banking, World-Wide-Web context to suit the context of e-money transactions (Gu, Lee & Suh, 2009; Martins, 2013). The questionnaires are distributed with the help of representatives. The scales of items are measured using seven-point of ordinal scale or also called Likert scales.

## **4.7 Sampling**

This section discusses population, sample size, sampling frame, and questionnaire distributions.

### **4.7.1 Population**

The population is defined as “researcher specifies the unit being sampled, the geographical location, and the temporal boundaries of the population” (Neuman & Kreuger, 2003). The population has to be found precisely from a more specific pool of case because it is difficult to accurately pinpoint and is more in an abstract concept. According to Sekaran and Bougie (2010), the population is a group of people, events, or thing that can be investigated. It needs the researcher to operate a list of the population with a close approximation to all population. Referring to this study, the population is all people in Indonesia who have and use mobile phones. However, it is infeasible to measure on all of the members. Therefore, a sample can represent the data that is collected and studied (Babbie, 2011).

### **4.7.2 Sample Size**

A sample determines a representative portion of the target population which can consist of people, events or records with desire information and answer questions for measurement (Cooper & Schindler, 2011). All the people within the sample of this study reside in Padang, Indonesia. The sample of this study is the population in Indonesia who possesses and uses mobile phones in Padang, Indonesia. As the total population in Padang is 833562

the minimum sample size for a population more than 1,000,000 that is appropriate to this study is 384 (Krejcie & Morgan, 1970).

The questionnaires might be returned completely is around 30% from distributed (Montgomery, 1989). Therefore, to anticipate the lack of response, the total numbers of questionnaires were distributed among 1300 people, which is larger than the recommended sample size. Techniques sampling uses multistage cluster sampling and systematic random sampling (Babbie, 2011). It takes some data of district area in Padang city. The respondents are selected with technique random in some urban villages around shopping complex. Thus, every 641 shopping complex from listing is selected to be a sample ( $833562/1300$ ).

#### **4.7.3 Sampling Frame**

In this study, the questionnaires were distributed among 1300 respondents of this sample to get a more accurate prediction about consumers' intentions to use e-Money mobile in Indonesia. However, there is no list of consumers who have the intention to use e-Money in Indonesia and the sample is used in large scale social surveys as it is difficult to find the proper sampling frame. Therefore, for some populations that cannot construct explicit sampling frame, the multistage cluster sampling is the most appropriate sampling technique to construct a frame by cluster (area, organizational, etc) (Chocran, 1977). Besides, this technique helps for cost considerations (save cost and times). The description of district area is as below.

Table 4.19

*List of District of area in Padang 2013*

No.	Cluster I	Cluster II	
	Sub-district	Code of Urban Villages	Name of Urban Villages
1	Northern Padang	01	Gunung Pangilun
		02	Ulak Karang Selatan
		03	Ulak Karang Utara
		04	Eastern Air Tawar
		05	Western Air Tawar
		06	Alai Parak Kopi
		07	Lolong Belanti
2	Western Padang	01	Belakang Tangsi
		02	Olo
		03	Ujung Gurun
		04	Berok Nipah
		05	Kampung Pondok
		06	Kampung Jao
		07	Purus
		08	Padang Pasir
		09	Rimbo Kaluang
		10	Flamboyan Baru
3	Eastern Padang	01	Sawah
		02	Ganting Parak Gadang
		03	Eastern Parak Gadang
		04	Kubu Marapalam
		05	Kubu Dalam Parak Karakah
		06	Andalas
		07	Simpang Haru
		08	Eastern Sawahan
		09	Jati Baru
		10	Jati



Table 4.19 (Con't)

No.	Cluster I	Cluster II	
	Sub-district	Code of Urban Villages	Name of Urban Villages
4	Southern Padang	01	Air Manis
		02	Bukik Gado-gado
		03	Batang Arau
		04	Seberang Palinggam
		05	Pasa Gadang
		06	Belakang Pondok
		07	Alang Laweh
		08	Taluak Bayua
		09	Rawang
		10	Mato Aie
		11	Seberang Padang
		12	Ranah Parak Rumbio
5	Nanggalo	01	Tabing Banda Gadang
		02	Gurun Lawas
		03	Kampung Olo
		04	Kampung Lapai
		05	Surau Gadang
		06	Kurao Gadang
6	Kuranji	01	Anduring
		02	Pasar Ambacang
		03	Lubuk Lintah
		04	Ampang
		05	Kalumbuk
		06	Korong Gadang
		05	Kalumbuk
		06	Korong Gadang
		07	Kuranji
		08	Gunung Sarik
09	Sungai Sapih		
7	Pauh	01	Pisang
		02	Binuang Kampung Dalam
		03	Piai Tengah
		05	Kapalo koto
		06	Koto Luar
		07	Lambung Bukit
		08	Southern Limau Manis
		09	Limau Manis
		8	Lubuk Begalung
02	Pampangan Nan XX		
03	Koto Baru Nan XX		
04	Tanjung Aur Nan XX		
05	Gurun Lawas Nan XX		
06	Banuaran Nan XX		
07	Lubuk Begalung Nan XX		
08	Cengkeh Nan XX		
09	Gates Nan XX		

Table 4.19 (Con't)

No.	Cluster I Sub-district	Cluster II	Name of Urban Villages
		Code of Urban Villages	
		11	Kampung Jua Nan XX
		12	Parak Laweh Pulau Air Nan XX
		13	Pitameh Tanjung Saba Nan XX
		14	Batung Taba Nan XX
9	Lubuk Kilangan	01	Tarantang
		02	Beringin
		03	Batu Gadang
		04	Indarung
		05	Padang Besi
		06	Koto Lalang
		07	Bandar Buat
10	Koto Tengah	01	Dadok Tunggul Hitam
		02	Air Pacah
		03	Lubuk Minturun Sungai Lareh
		04	Bungo Pasang
		05	Parupuk Tabing
		06	Batang Kabung Ganting
		07	Lubuk Buaya
		08	Padang Sarai
		09	Koto Panjang Ikua Koto
		10	Pasir Nan Tigo
		11	Koto Pulai
		12	Balai Gadang
		13	Batipuh Panjang
11	Bungus Teluk Kabung	01	Southern Teluk Kabung
		02	Southern Bungus
		03	Central Teluk Kabung
		04	Northern Teluk Kabung
		05	Eastern Bungus
		06	Western Bungus

Sources: [disperindagtamben.padang.go.id](http://disperindagtamben.padang.go.id), 2013

The technique of multistage cluster sampling is laid out from primary clusters (sample randomly). The primary cluster is cluster I. In the cluster 1, the sub-district is selected randomly. Then, it is continued with layout secondary clusters (sample randomly). The secondary cluster is cluster II. In the cluster II, the urban villages are selected randomly. After that, the systematic random sampling is selected from the data of total shopping

centre within cluster II (urban villages). The respondents are selected with technique systematic random sampling in some urban villages around shopping complex. Thus, every 641 respondent in shopping complex from listing is selected to be a sample (833562/1300). These are total shopping centre in each sub-district as follow.

Table 4.20

*Total shopping center in Padang 2013*

No	Sub-district	Total Shopping Center
1	Northern Padang	1350
2	Western Padang	2125
3	Eastern Padang	2008
4	Southern Padang	962
5	Nanggalo	1093
6	Kuranji	1279
7	Pauh	885
8	Lubuk Begalung	1076
9	Lubuk Kilangan	919
10	Koto Tengah	1485
11	Bungus Teluk Kabung	426
	Total	13608

Sources: [disperindagtamben.padang.go.id](http://disperindagtamben.padang.go.id), 2013

The details cluster and systematic sampling are presented in the figure as follow.

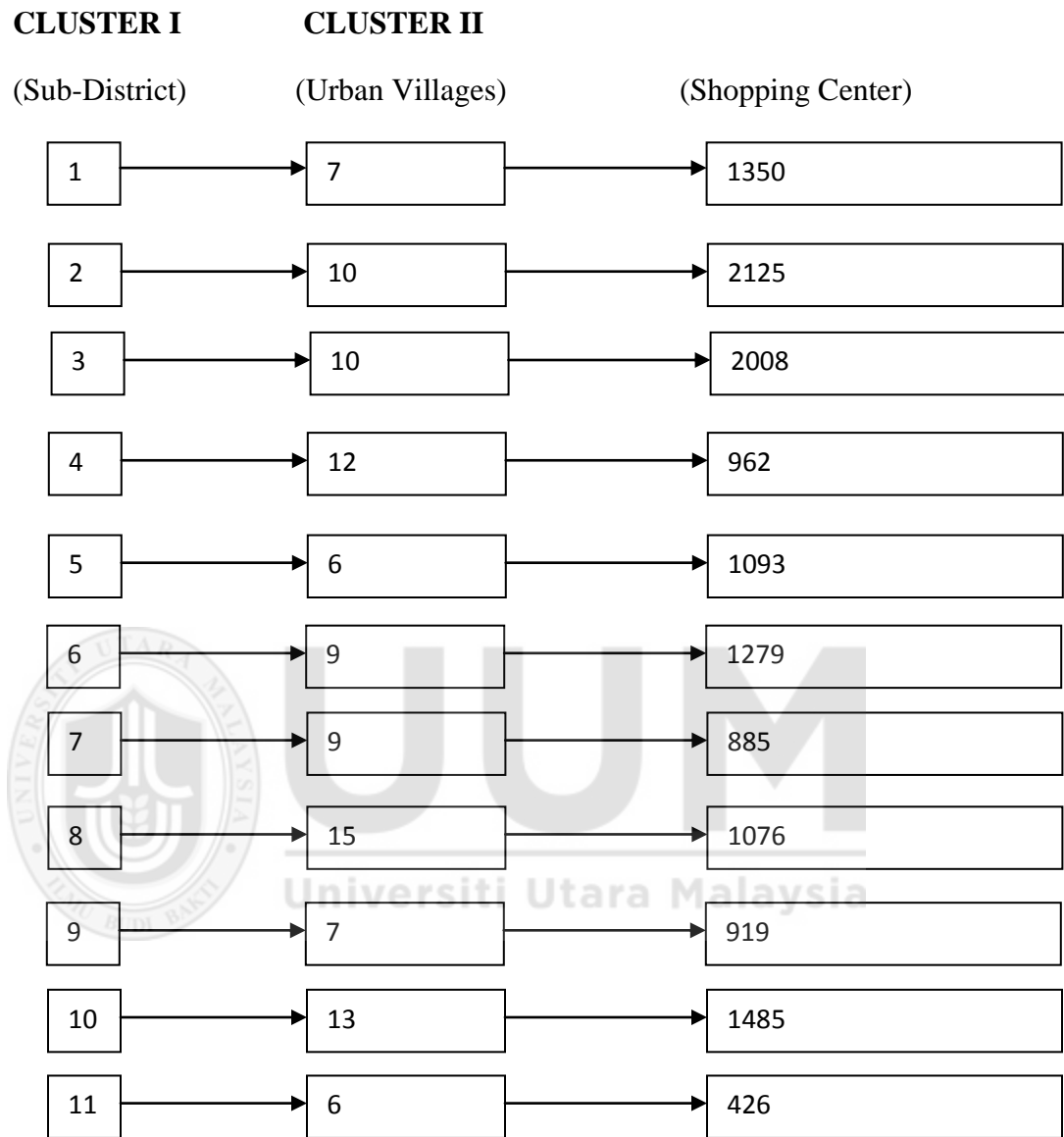


Figure 4.1

*Cluster and systematic sampling*

The respondents are selected for all of the area in cluster II that consist of many shopping complexes with technique systematic random sampling. Thus, every 641 shopping complex from listing is selected to

be a sample (833562/1300). Therefore, this study uses mall-intercept as a method to collect data by personal interviews where the questionnaire is administered to several areas (Bush & Hair, 1985). The advantage of using mall intercept to collect data is that the respondents can easily meet in a central location that helps in collecting higher quality data, as it avoids subjective interview to the respondents saving cost and time (Bush & Hair, 1985). To avoid bias responses of mall intercept, the technique distributing questionnaire is looking for the shoppers who want to leave the store or have finished their shopping. However, the shopping complex that is integrated to this study refers to the minimarket and departmental stores in Padang. The data is gathered responses from about 1300 respondents with age ranging from 18 years to above 56 years old. It takes a sample every 5 shopper who left the shopping complex. In this case, the distribution of the questionnaire determines for three times a day; morning, lunchtime, and afternoon over a week of sick days and also over a two-week of distributing period to reduce self and subjective selections (Preez, 2001). This way helps to reduce the respondent's bias on the data (Bush & Hair, 1985). It is collected in Padang because the field workers are trained in this city. The researcher has to make sure that the respondent has a mobile phone to approach for the purpose of this study to investigate the consumers' intention to use e-Money mobile through their mobile phone access.

#### 4.8 Data Collection

A data is defined as “the facts presented to the researcher from the study’s environment” (Cooper & Schindler, 2011). In data collection, there are a lot of methods that can be used as techniques to collect data such as survey, interviews, observations, and many others (Halim, 2012). Cooper & Schindler (2011) stated the researcher need to consider four things related to the characteristic of data before gathering the data. These are:

1. The data would be characterized by abstractness, where the data are metaphorical than real because sometimes a data that needs be investigated can be hard to access. For example, if the study needs to get the data related to the “cause”, but only the effect of it may be recorded.
2. The data is processed by senses. Regard to sensory experiences that consistently produce the same result. Such consistent data may be verified as trustworthy.
3. Elusiveness is captured for the data because it can be complicated by the speed at which the events occur and the time-bound nature of observation. That is, opinions, preferences, and attitudes may vary with the passage of time from one to another.
4. Finally, the data has to reflect the closeness and truthfulness to the phenomenon.

Hence, primary and secondary data are used as data sources in this study. Primary data is the first data directly acquired from the source and the

secondary data has at least one level of interpretation inserted between the event and its recording (Cooper & Schindler, 2006, 2011).

By conducting survey method, more socioeconomic variables can be included in the questionnaire. This data includes the consumers' intention to use e-money located in Padang, Indonesia. For the purpose of this study, a cross-sectional study is the most appropriate method for data collection. It is because this research is a descriptive study using a questionnaire to collect data from respondents in a large scale survey. Besides, this research addresses the problem of using snapshot time to make generalizations in the social study (Babbie, 2011). In the cross-sectional field, the researcher makes observations at one point of time and as possible all variables are measured simultaneously (Yegidis, Weinbach & Myers, 2012). The study that conducts cross-sectional in the time domain to measure all variables examine a phenomenon by taking a cross section of it at one time and analyzing that cross section carefully because a cross-sectional study finds a relationship existed in significant value (Rubin & Babbie, 2010).

Therefore, this study uses mall-intercept as a method to collect data by personal interviews where the questionnaire is administrated to several areas (Bush & Hair, 1985). The advantage of using mall intercept to collect data is that the respondents can easily meet in a central location that helps in collecting higher quality data, as it avoids subjective interview to the respondents saving cost and time (Bush & Hair, 1985). The "mall-intercept"

method existed in the early 1960's, but it had been more popular in 1970's and 1980's.

This method is administrated around shopping complex which is chosen due to its location within a central business activity (Bush & Hair, 1985; Gates & Solomon, 1982). Besides, the result from surveying might be more accurate when the researcher gets the information direct from the respondents and their response and can prove the mall shopper results distorted of polling mall intercept (Lautman, Edwards, & Farrell, 1981; Dupont, 1987). However, the method "mall-intercept" has been used and adapted in several studies related to technology and consumers (Jones & Sinclair, 2011) and this method is one of the variations from the store-intercept which is very famous to study the consumers sciences (Preez, 2003) and the data should be close and can reduce the synthetic influences (Bush & Hair, 1985; Dillon, Lautman, Edwards, & Farrell, 1981; Dupont, 1987; Madden & Firtle, 1994; Hester, 1989; Loudon & Della Bitta, 1993).

This method is the most useful referring to the situation in this study where the researcher needs to reach a targeted sample quickly without focusing on proportionality sampling or proper sampling frame as a concern. To study consumers' intention to use e-money by using a mobile phone, it is easy to identify, but enumerating all of them would be nearly impractical. Besides, many consumers who have the intention to use e-money mobile by using a mobile phone can be visible in certain areas, but it would not be feasible to



reach, define, and sample all of them (Rubin & Babbie, 2010). Thus, the researchers may collect data sufficiently to present their purposes and select the sample based on some appropriate characteristics of the sample members (Zikmund, 2000). Therefore, all people in Padang, Indonesia are well suited for the purpose of this study due to various reasons.

First, the structural of society in Padang is well-known as traders in Indonesia. This place is the biggest place in Sumatera Island and had to be the harbor city since 19 decades. In one line, Pasar Raya Padang is central of trading in Padang city. The intensity of society to use cash is high. Hedonistic and consumptive lifestyles already possess some of the residents of this city. Wear branded clothing, personal care salon, hang out in cafes, and eating style fast food have become parts of the daily life of people who have gone up to the intermediate level and above (padangekspres, 2014). It is supported with the existing shopping complex in Padang about 13608. It is classified as big number for existing shopping complex (disperindagtamben padang 2013).

Secondly, these are many schools, institution and universities (public and private) in Padang. To attract the society to move into e-money mobile, the central Bank of Indonesia brings the program of the introduction of e-money to some universities in Indonesia. One of public university chosen by Bank Indonesia to pilot test e-money transaction in 2013 was Andalas University. It was started with campus environment and continues to the society.

Thirdly, these are various kind of public transportation in Padang. From the traditional public transport that used equine until modern public transport such flight, bus, train, angkot and ojek. Angkot is a small van in Padang had become the unique public transport followed the trend of automotive modifications such decoration interior, and exterior until accessories have to be updated. Every van can pick up 10-15 passengers per trip. Besides, ojek is a motorcycle services delivery. For those public transportations are now on focus for e-money introduction to using especially e-mobile. The frequency of society to use the money for micropayment transaction is high. The government is going to work hard for this transforms of micropayment transaction (Bank Indonesia, 2013).

Finally, Padang city received a best national level award based on the investigation of BPSK Assessment Team (Consumer Dispute Settlement Board) consisting of eight people from Universities, the National Consumer Protection Agency, Consumer Foundation, Board Arbitrate National Indonesia (BANI) and Director of Empowerment consumers as well as elements of the Ministry of Commerce in 2012. BPSK (Consumer Dispute Settlement Board), from 2006 to 2011, completed approximately 157 cases which are generally derived from the leasing of motor vehicles, property, PLN, Telkomsel and banking ([disperindagtamben.padang.go.id](http://disperindagtamben.padang.go.id), 2014). It makes Padang an appropriate selection for this research. Besides, it is an advantage to know and understand the consumers' intention to use e-money

mobile from different points of view, and the result can be generalized to a large number of people.

Therefore, a sample that selects about 1300 respondents in Padang as the centre of the city for representing the population society in Sumatera Barat of 4,846,909 and overall Indonesia's population of 237,641,326 in 2010. The findings of this study can be generalized to a larger population. Furthermore, Padang is one of the spots for international tourism with the celebration of different international events. Based on this phenomenon, it is suitable to make this location potentially accessible, less expensive, and easy to distribute the questionnaire to a large number of them. In addition, the quality of answering the questionnaire is often better with this segment.

#### **4.9 Data Collection Procedures**

The procedure that is adopted in this study is based on "mall-intercept", where the data is collected from the respondents around shopping complex. This method is used to avoid using convenience sampling (Hossain & Prybutok, 2008; Ramayah & Ma'ruf, 2002; Kazi, 2013), where it called as a bit dirty and cheap method when doing research, because it is difficult to specific and bias, Robson (1993), difficult to achieve the criteria clearly, and appears similar and more subjective (Farrokhi & Mahmoudi-Hamidabad, 2012). Besides, the technique of mall intercept allows the researcher to get some information by interviewing the respondents personally in the shopping centres.

Referring to these reasons, the method of mall intercept is more appropriate to this study; because all consumers can be approached without a proper sampling frame to get their responses by distributing the questionnaire at the stores. In this technique, the respondents are selected based on how long they stay to represent the behavior of the shoppers because it improves the quality and accuracy of the data that can be addressed to be true for a random sample (Bush and Hair, 1985; Nowell and Stanley, 1991).

To avoid bias responses of mall intercept, the technique distributing questionnaire is looking for the shoppers who want to leave the store or have finished their shopping. However, the shopping complex that is integrated to this study refers to the minimarket and departmental stores in Padang. The data is gathered responses from about 1300 respondents with age ranging from 18 years to above 56 years old. In this case, the distribution of the questionnaire determines for three times a day; morning, lunchtime, and afternoon over a week of sick days and also over a two-week of distributing period to reduce self and subjective selections (Preez, 2001). This way helps to reduce the respondent's bias on the data (Bush & Hair, 1985). It is collected in Padang because the field workers are trained in this city. The researcher has to make sure that the respondent has a mobile phone to approach for the purpose of this study to investigate the consumers' intention to use e-Money mobile through their mobile phone access.

#### **4.10 Technique of Data Analysis**

Data that is collected has to be tested and evaluated to prove the theoretical framework and its hypothesis by using SPSS-statistical software (Version 18 and Smart PLS 2.0 M3) because they are more flexible. The first step in this analysis is the screening of data which sorts out the data that is not completely filled or not appropriately needed (Sekaran, 2003). In data screening, the data entry errors are identified. Then, it examines to meet the appropriate statistical data format by looking for missing data. Besides, it involves normality, reliability, and validity test along with multicollinearity and heteroscedasticity. Factor analysis, correlation, and regression are used to test the relationship between independent and dependent variables in this study. If two or more factors are formed, each factor has to be tested using Pearson Product Moment.

##### **4.10.1 Data Screening**

Data screening is the first step that verifies the collected data by avoiding missing value during data entry. In data screening, data processes involve a number to ensure that the characteristic of data has no negative effect on the result (Al Aqsa, 2013). This step is important to eliminate errors that are investable. It helps to clean the data or in simple form, it is called possible-code cleaning (Rubin & Babbie, 2010). The possible code cleaning can check errors in the data entered from some computer programs. Another way, the computer programs are exactly designed to test illegitimate codes in files of data, but cannot check it during data entry.

#### 4.10.2 Missing Data

Data missing is defined as “information from a participant or case that is not available for one or more variables of interest” (Cooper & Schindler, 2011).

The missing data often happens because of some conditions that can appear from the respondents, researcher or other factors. Missing data can be caused by respondents due to lack of seriousness and focus while addressing the questionnaire. They may skip the questions and fail to understand the items of the questionnaire. Other factors include a potential change in the instrument or design, corrupted files or researcher errors during data collection. Checking on the data source and large chunks of data are the first required steps before investing the study by using the existing data (Rubin & Babbie, 2010).

Cooper & Schindler (2011) stated that these are two-step processes to handle missing data as follows:

1. Explore on the formula of missing data to know the procedure for missing data, which can be identified by a probability of values for the missing data rather than observing.
2. Select missing data with its technique

Al Aqsa (2013) mentioned that many researchers had discussed the issue of missing with many approaches. Data needs to be complete for all variables that will be analyzed. It needs valid data to solve the cases. Then, the cases need to be excluded when the missing data needs to be analyzed

specifically. In that case, the sample mean is very important to change the missing value, because if data has too many missing values, it makes it hard to get good findings and analysis. This study conducts the questionnaire by a pointed Likert scale ranging 1- strongly disagree to 7- strongly agree. The questionnaires are tested on a pilot test from 30 to 40 respondents. After that, the data was thoroughly checked to find whether answers were within the range of 1 to 7 for all 1300 respondents. However, the respondents should not skip the answering on profile information questions that relate to their age, income, or other.

#### **4.10.3 Reliability and Validity Test**

Most of the measurements utilized in this study were adapted from past established instruments. Using established instruments increases the reliability of the measures employed and avoids the enormous time and effort that would be invested in instrument development. Also, as recommended by Straub (1989), utilizing existing and validated scales enables future comparison with other research.

Most of these measurements have been utilized in business transactions and information system setting. These instruments have been modified to suit the online shopping setting. All measures selected have been reported as having an adequate reliability reading of above .60 (Nunnally, 1970). The reliability refers to consistency and repeatability of the measurements (Singh, 2013). This test links the concept to the measurements quality. Coefficient alpha is the better estimate of the overall reliability of the

instrument that summarizes the result by generating the average correlation among all pair items (Yegidis, Weinbach & Myers, 2012). The reliability tests the Cronbach alpha. The score in every construct should be greater than 0.6 to make it reliable or if the score is 0.6 and above, every construct is accepted for the study (Nunally, 1967).

Table 4.21

*Result Reliability and Validity*

No	Variables	Cronbach's Alpha	N of Items	Item Deleted
1	Intention to Use	.841	7	Nil
2	Relative Advantage	.881	6	Nil
3	Complexity	.831	6	Nil
4	Perceived Risk	.837	9	Nil
5	Security	.752	7	Nil
6	Social-cultural influence	.738	12	Nil
7	Awareness	.725	4	Nil
8	Attitude	.802	3	Nil
9	Subjective Norm	.870	5	Nil
10	Perceived Behavioral Control	.722	3	Nil
11	Self-confidence	.861	3	Nil
12	Facilitating Conditions	.788	3	Nil
13	Family	.746	3	Nil

#### 4.10.4 Factor analysis

Factor analysis is defined as “a general term for several specific computational techniques used to examine patterns of relationship amongst select variables” (Cooper & Schindler, 2011). The purpose of factor analysis can be summarized for the whole information starting from the large number of variables to smaller and simpler number of factors (Zikmund, 2000).



In this method, the number of variables is reduced from a larger to simplify the subsequent analyses. The processing of data reduction follows to the relationships or inter-correlations between variables and correlation matrix. This approach is called principal component analysis (PCA). Otherwise, the variables are transformed into a smaller number of variables that can be represented by the original set of variables or it can be a new set of composite variables. The linear combinations of variables deliver credit to the variance in the data (Cooper & Schindler, 2011).

Factor loading helps to analyse the correlation between original variables and the factor because each factor loading measures each importance factor (Zikmund, 2000). It follows the explanation of total variance that is equivalent to the  $R^2$  in multiple regressions. A percentage of total variance from the original variables is explained in each factor. Factor score represents the calculated value from each factor as subsequent analysis. Besides, the rotation factors are the most important step in factor analysis, where the position has to be reached by turning the reference axes of that originated factors with orthogonal rotation, but the retain of reference axes is not approached to 90-degree angle (Hair et al., 1987).

The factors need to be rotated until the factors are subsequent, similar, and more residual to all variance. (Hair et al., 1987) explained some criteria for the factor loading to be significant:

1. Factor loadings that are greater than  $\pm 0.30$  are classified to be significant, those greater than  $\pm 0.40$  are more important, and those equal or greater than  $\pm 0.50$  are very significant.
2. Each factor loading has to represent balances between a basic variable and its factor. Besides, the correlation of a significance level has to be similar to its interpretation of correlation coefficients, where loading factors at least  $\pm 0.19$  and  $\pm 0.26$  are recommended on 5 and 1 percent level of significance as a representative for 100 samples. As a representative for 200 samples, loading factors at least  $\pm 0.14$  and  $\pm 0.18$  are recommended on 5 and 1 percent level of significance. As a representative for 300 samples, s loading factors at least  $\pm 0.11$  and  $\pm 0.15$  are recommended on 5 and 1 percent level of significant.
3. If the specific factor is not considered from method 1 and method 2, the analysis should increase the level of significance for an acceptable level of loading.

Table 4.22

*Result of KMO and Bartlett's Test*

No	Variables	KMO and Bartlett's Test		
1	Intention to Use	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.825
		Bartlett's Test of Sphericity	Approx. Chi-Square	304.963
			Df	21
			Sig.	.000
2	Relative Advantages	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.845
		Bartlett's Test of Sphericity	Approx. Chi-Square	319.024
			Df	15
			Sig.	.000
3	Complexity	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.801
		Bartlett's Test of Sphericity	Approx. Chi-Square	213.272
			Df	15
			Sig.	.000
4	Perceived Risk	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.785
		Bartlett's Test of Sphericity	Approx. Chi-Square	384.883
			Df	36
			Sig.	.000

Table 4.22 (Cont')

No	Variables	KMO and Bartlett's Test		
5	Perceived Security	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.778
		Bartlett's Test of Sphericity	Approx. Chi-Square	233.033
			Df	21
			Sig.	.000
6	Social-Cultural Influence	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.664
		Bartlett's Test of Sphericity	Approx. Chi-Square	333.169
			Df	66
			Sig.	.000
7	Awareness	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.685
		Bartlett's Test of Sphericity	Approx. Chi-Square	90.008
			Df	6
			Sig.	.000
8	Attitude	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.642
		Bartlett's Test of Sphericity	Approx. Chi-Square	122.577
			Df	3
			Sig.	.000
9	Subjective Norm	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.807
		Bartlett's Test of Sphericity	Approx. Chi-Square	249.947
			Df	10
			Sig.	.000

Table 4.22 (Cont')

No	Variables	KMO and Bartlett's Test		
10	Perceived Behavioral Control	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.615
		Bartlett's Test of Sphericity	Approx. Chi-Square	70.601
			Df	3
			Sig.	.000
11	Self-Confidence	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.724
		Bartlett's Test of Sphericity	Approx. Chi-Square	138.054
			Df	3
			Sig.	.000
12	Facilitating Conditions	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.697
		Bartlett's Test of Sphericity	Approx. Chi-Square	86.575
			Df	3
			Sig.	.000
13	Family	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.628
		Bartlett's Test of Sphericity	Approx. Chi-Square	81.115
			Df	3
			Sig.	.000

#### 4.10.5 Techniques of Data Analysis

Quantitative data obtained from questionnaires were analyzed using different analysis techniques. Analyses of the data in this study use two software are the Statistical Package Social Sciences (SPSS) version 18.0 and SmartPLS 2.0 M3. Data analysis methods have been based on research

questions and the characteristics of the variable (Hair et al., 2013; Byrne, 2001; Babbie, 2011). This analysis purposes to reach the reliability in data analysis and hypothesis testing. These various tests carry out some steps such; screening and missing data, normality test, and non-respondents bias test. Furthermore, these are some tests conducted are the reliability and validity test, the goodness of fit, descriptive statistics, correlation, and regression analysis. All of the variables were analysed by followed steps statistically.

#### **4.10.5.1 PLS Structural Equation Modelling Approach**

PLS is a general method that can be used to estimate the model of causal relationships consists of paths latent constructs. It is used to measured complexity model (Bollen, 1989; Joreskog, 1973; Ringle, Wende, and Will 2005; Hair et. al, 2010). The measurement model and structural model are two models needs to be described in the model of PLS (Lewis & Thompson, 2006; Hair et. al., 2010, Henseler, Ringle, & Sinkovics, 2009).

In the model of measurement, it examines the connectivity between the manifest variables (MV) with its latent variables (LVs). Different with structural model, it tests between the endogenous LVs to LVs or the inner measurement model is referred to a model outer. The inner and outer model of PLS path. These are some reasons this study employs the PLS technique. Firstly, PLS path modelling becomes more appropriate for real-

world applications and more advantageous to use when models are complex (Petter et al., 2007; Andreev et al., 2009; Roberts et al., 2010; Jarvis et al., 2003; Cao & Zhang, 2011; Inman et al., 2011; Jarvis et al., 2003; Diamantopoulos & Winklhofer, 2001; Fornell & Bookstein, 1982; Hulland, 1999). The assumptions of PLS technique bring strong benefit to estimating complex models (Petter et al., 2007; Gefen & Straub, 2005; Mathieson et al., 2001; Andreev et al., 2009; Akter *et al.*, 2011; Bollen & Davis, 2009; Winklhofer, 2001). The current study examined relationships among 13 variables which are relative advantages, complexity, awareness, attitude, subjective norm, social-cultural influence, self-confidence, facilitating conditions, family, perceived behavioural control, perceived risk, perceived security and intention to use, in the structural model and therefore employ the use of PLS-SEM techniques appropriate to better predictions. Secondly, The PLS parameter estimates better reveal the strength and direction (i.e., positive vs. negative) of the relationships among variables compared to correlation coefficients. PLS avoids parameters estimation biases common in regression analysis (Calantone, Graham, and Mintu-Wimsatt (1998). Thirdly, PLS-SEM offers more meaningful and valid results, while other methods of analysis such as software package used for statistical analysis (SPSS) often result in less clear conclusions and would require several separate analyses (Bollen, 1989).

Mostly in studies of social science, the normality has important factor that relate to data the normal data is not necessary for PLS path modeling (Chin, 1998a; Chung & Lee, 2001; Andreev et al., 2009; Ahuja et al., 2003; Rosenzweig, 2009; Geisser, 1975; Stone, 1974). This technique is strongly powerful in areas of social and behavioral studies to test the relationship between variables (Tabachnick & Fidel, 2007). The Smart-PLS path modelling in measurement assesses the constructs for the validity and reliability result. Furthermore, the structural model explains bivariate correlation and regressions analyses. In addition, a test of algorithm and bootstrapping in PLS mechanism to examine those 12 variables effect to intention to use e-money mobile.

These are many previous studies conducted investigation used Smart-PLS path (McKnight et al., 2002; Klein & Rai, 2009; Fornell & Bookstein, 1982; Joreskog & Wold, 1982; Lohmoller, 1989; Swink et al., 2007; Bollen & Davis, 2009; Diamantopoulos & Winklhofer, 2001; Diamantopoulos & Winklhofer, 2001; Petter et al., 2007; Gefen & Straub, 2005; Mathieson et al., 2001; Andreev et al., 2009; Falk & Miller, 1992).

#### **4.10.5.2 Steps of PLS Analysis**

The Smart-PLS has to save data in “.csv or comma delimited” file format. It is kind of the type of file format that accepted and usable to run the software smart-PLS. The step is as follows:

1. The Convergent Validity is greater than 0.7 (Fornell & Larcker, 1981)



2. Cut-off values composite reliability is 0.7 (Fornell & Larcker, 1981; Hair et al, 2010).
3. To confirm the convergent validity of the model outside, the values of average variance extracted (AVE) should not least 0.5 to avoid sufficient convergence of the construct (Barclay et al., 1995).
4. The discriminant validity is the square root of the average variance extracted (AVE) for all construct (Compeau, Higgins, and Huff, 1999; Larcker Fornell, 1981)
5. The Goodness of Fit Models is looked by the average commonality and the average R2 for endogenous constructs (Wetzels, Odekerken-Schroder & Van open, 2009).
6. Structure significance in Bootstrapping with 5000 samples and 579 cases.

#### **4.11 Summary**

This chapter explained clearly methodology research design, sampling technique, instrument development, and technique of analysis data.

## CHAPTER 5

### FINDINGS

#### 5.1 Introduction

This chapter presents the result of the data analyses. The presentation of this chapter is explained as follows. Firstly, the profile of respondents would be highlighted based on demographic characteristics. It is then followed by the test of response bias on early and late response. Secondly, this study discusses the descriptive analysis of the variables and the normality testing. This study employed the Partial Least Squares Structural Equation Modeling (PLS-SEM) to examine the outer measurement model before the inner structural model assessment and hypotheses testing.

The goodness of the outer model related to the constructs of this study namely decomposed attitude (compatibility and relative advantage), decomposed subjective norm (social cultural influence and family) and decomposed perceived behavioral control (self-confidence and resources facilitating), awareness of service, perceived risk and perceived security. Next, the quality of the structural model is examined through the construct validity. Finally, the findings of the hypotheses testing procedures are reported by analyzes the structural model.

#### 5.2 Response rate

A total of 1300 questionnaires were distributed to mobile user in shopping centre. Out of 1300 questionnaires, 760 questionnaires were returned. Of this,

540 responses were found to be non-usable. Specifically, 181 questionnaires were incomplete. These are no cases for outliers. As suggested by Coakes and Steed (2003) proposed the sample size should be 20 times more or at least 5 times more than variables. Hair *et al.* (2010) also suggested that the minimum sample size for SEM analysis approach is about 200 respondents. Hence, the sample size of 579 appears to be adequate for statistical analysis compare to 13 variables used in this study. The response rate obtained was also comparable to several studies using mall intercepts method which distributed to user mobile around shopping centre as the study sample.

Table 5.1

*Questionnaire Distribution and Decisions*

Item	Frequency	Percentage %
Distributed questionnaires	1300	100
Returned questionnaires	760	59
Rejected questionnaires	540	41
Retained questionnaires	579	76

### 5.3 Demographic Distribution of the Respondents

The data collected using the survey questionnaire over the period of three months from October 2014 to December 2014. The final collected data sample includes 760 participants from all shopping centers. The demographic variables have been categorized into five categories, which are gender, age, income, educational qualifications, and job. In Table 4.2, the respondents who respond to this study from male are 256 which represent 44.2%, and female

are 323 with 55.8%. The respondents who respond to this study from age 18-25 are 399 which represent 68.9%, age 26-30 are 46 which represent 7.9%, age 31-35 are 54 which represent 9.3%, age 36-40 are 35 which represent 6%, age 41-45 are 17 which represent 2.9%, age 46-50 are 15 which represent 2.6%, age 51-55 are 12 which represent 2.1%, and age >56 are 1 which represent 0.1%. In terms of Income per month, the respondents who have income  $0 < \text{IDR } 500.000$  are 198 which represent 34.2%, income  $\text{IDR } 500.000\text{-IDR } 1.000.000$  are 192 which represent 33.2%, income  $\text{IDR } 1.000.000\text{-IDR } 1.500.000$  are 57 which represent 9.8%, income  $> \text{IDR } 1.500.000$  are 132 which represent 22.8%.

The majority of the respondents are holding undergraduate qualification about 457 which represents 75.5%, then followed by senior high school qualifications are 78 which represents 13.5%, college degree qualifications are 30 which represents 5.2%, postgraduate qualifications are 25 which represents 4.3%, junior high school qualifications are 5 which represents 0.9%, and elementary school qualifications are 4 which represents 0.7%. In terms of jobs of the respondents, majority of them are students about 327 which represents 56.5, then followed by civil servant about 129 which represents 22.3%, entrepreneurs about 75 which represents 13%, others about 30 which represents 5.2%, and private servant about 18 which represents 3.1%.

Table 5.2

*Profile of Respondents (N = 579)*

Item	N	Percentage (%)
<b>Gender</b>		
Male	256	44.2
Female	323	55.8
<b>Age</b>		
18- 25	399	68.9
26 – 30	46	7.9
31 – 35	54	9.3
36 – 40	35	6.0
41- 45	17	2.9
46 – 50	15	2.6
51 – 55	12	2.1
>56	1	0.2
<b>Income per month</b>		
0 < IDR 500.000	198	34.2
IDR 500.000-IDR 1.000.000	192	33.2
IDR 1.000.000-IDR 1.500.000	57	9.8
> IDR1.500.000	132	22.8
<b>Educational Qualification</b>		
SD	4	0.7
SMP	5	0.9
<b>Educational Qualification</b>		
SMU/SMK	78	13.5
D1-D3	30	5.2
S1	437	75.5
S2/S3	25	4.3
<b>Jobs</b>		
Civil Servant	129	22.3
Private Servant	18	3.1
Entrepreneurs	75	13.0
Students	327	56.5
Others	30	5.2

#### **5.4 Test of Non-Response Bias**

This study employed a survey questionnaire as a tool of data collection. However, the questionnaire was self-administrated but it was necessary to conduct the non-response bias for some reasons. Some respondents responded only after many visits and reminders, and the data collection period occurred in between October 2014 to December 2014. It is also supported by Matteson, Ivancevich, and Smith (1984), as is the case in any study relying on voluntarily participation, there is always the possibility that respondents and non-respondents differ in some significant manner. An alternative test of non-response bias was conducted because of the difficulty associated with the identification of non-respondents' characteristics in anonymous research. The chi-square test was conducted for categorical variables such as gender, age, income level, education level and current job to examine whether the responses received from participants who responded late (i.e. after a two-week period) significantly differed from those who responded earlier (i.e. within the two weeks). A period of two weeks was chosen as the benchmark to differentiate between the early and the late responses.

The time period is assumed to be sufficient for the respondents to complete the questionnaires. Furthermore, Armstrong and Overton (1977) stated that non-respondents were believed to have similar characteristics to late respondents. This procedure involves breaking the sample into early responses (that is, returns received within two weeks after distribution) and

late responses (those returns received after two weeks of distribution) and then conducting chi-square test on the demographic characteristics of the respondents. There were 539 respondents classified as early responses, while the remaining 39 responses were categorized as late responses. Descriptive Statistics for Early and Late Respondents is attached in Appendix 1 (Table 5.3).

Heterocedasticity happens when the variances are not same and rejected in one of general estimation that needs to be diagnosed using residual plot in multiple regression (Hair et al., 1998). This is one of the classic assumptions before to test structural model. If heteroscedasticity is detected, it means that the analysis of the data will be more complicated, because it is assumed that the variance has to be equal (homoroscedasticity).

Using the independent samples t-test for equality of means, results indicate that the group mean and standard deviation for early responses and late responses are apparently not different. As shown in table 5.4, the t-test results demonstrate that there is no significant difference between early responses and late responses based on the variables respectively. Thus, results indicate that while these items are statistically different, the differences are quite small and not significant to affect the overall results. T-test results for Non-Response Bias is attached in Appendix 1 (Table 5.4).

## 5.5 Descriptive Statistics

A descriptive analysis for data is conducted to describe intention to use, relative advantage, complexity, perceived risk, perceived security, social cultural influence, awareness of service, attitude, subjective norm, perceived behavioral control, self-confidence, resources facilitating and family from the respondents' perspective. In Table 5.4 (refer Appendix 1), the mean, standard deviation, minimum and maximum of the constructs were reported. These results showed the implementation level of each variable reflected the consumers' intention to use e-money mobile.

As tabulated in Table 5.5 (refer Appendix 1), the minimum value of all the constructs was 1.00 and the maximum value was 7.00 which represent the Likert scale used in this study. The same data showed that attitude had 5.1549 as the maximum mean value and perceived risk had 4.0520 as the minimum mean value. Among other social cultural influence had 1.30993 with the lowest standard deviation and subjective norm had 1.93433 with the highest standard deviation. These results clearly indicated that consumers highly focused and emphasized on attitude in accomplishing consumers' intention to use e-money mobile. The lowest standard deviation value indicated that consumers were not significantly different in their intention to use e-money mobile. Descriptive Statistics of the Constructs is attached in Appendix 1 (Table 5.5).



## 5.6 The Rationale behind Choosing PLS SEM for this Study

The purpose of this study is to investigate the relationships among latent variables; therefore the latent analysis technique was the suitable option. The following assumptions have been tested in SPSS before choosing the technique of the analysis.

### 5.6.1 The Assumption of Normality

Normality test is used to prove the normal distribution of data. Normal distribution or normal curve is defined as “a systematical, bell-shaped distribution that describes the expected probability distribution of many chance occurrences” (Zikmund, 2000). The standardization of the normal curve is needed for the theoretical distribution that is mostly useful in inferential statistic.

Zikmund (2000) explained several characteristics for specific normal distribution:

1. The normal curve is symmetrical about its mean
2. The mean of normal curve can identify its highest point/mode and vertical line symmetrically
3. The normal curve has an infinite number of cases/continuous distribution and the area under the curve has a probability density equal to 1
4. The standardized normal curve has a mean of zero and a standard deviation of 1

The normal distribution of data is the purpose of the normality test, because the normal curve is essential for chance errors in the model (Roscoe, 1975). The skewness and kurtosis are two items that need to be verified to make sure that the data is distributed normally.

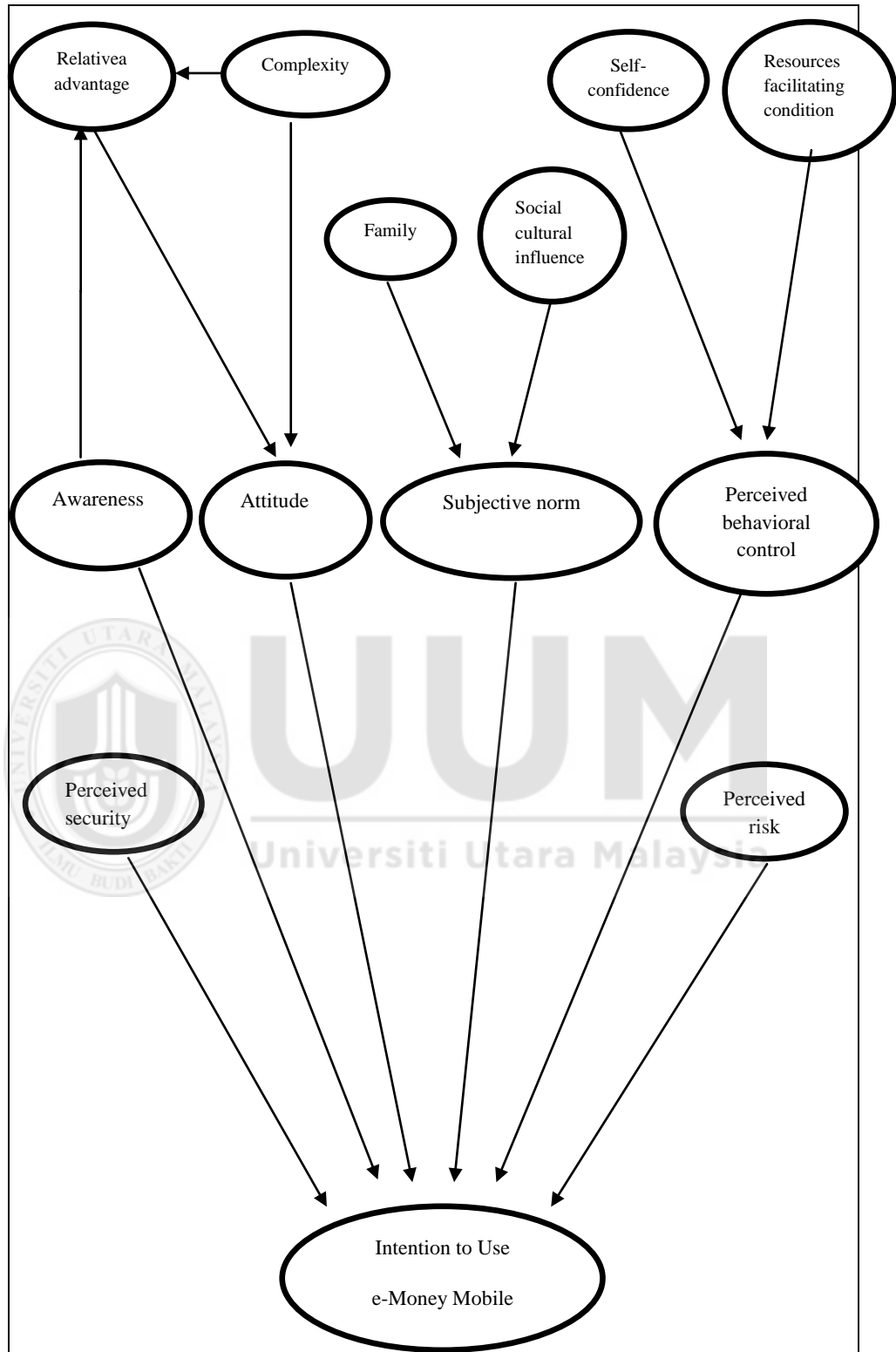
The normality employed to show the symmetrical curve that has the greatest frequency of scores towards extremes in the small and middle frequencies (Pallant, 2005). To do so, some researches such as Kline (1998) and Pallant (2005) suggested assessing the normal distribution of scores for the independent and dependent variables through examining their skewness and kurtosis values. In social sciences, the nature of the constructs has many scales and measures may results skewed positively or negatively (Pallant, 2005). In addition, kurtosis is also a score for measuring distribution that represents the degree to which observations around the central mean are gathered. According to Hair *et al.* (2006) the values of skewness outside the range of +1 to -1 are substantially skewed distribution. Similarly, the values of kurtosis are to range from +1 to -1 which are acceptable based on the below table 5.6. Based on discussion above, the results show that some of values in skewness deviate from being normally distributed. Therefore, to be able to handle nor-normal and skewed data to test the hypothesized relationships, this study employed PLS Structural Equation Modeling that is the distribution free statistical modeling

technique (Chin, 1998). The data is presented in Appendix 1 (Table 5.6).

### **5.6.2 Testing the Measurement, Outer, Model Using PLS Approach**

Before testing the study's hypotheses, the measurement model, outer model, was assessed through the Partial Least Squares Structural Equation Modeling (PLS-SEM) technique. To achieve that, this study followed the two steps approach suggested by Anderson and Gerbing (1988). Figure 5.1 shows the model of this study with structural dimensions as follows.





**Figure 5.1**  
**Research Model**

### 5.6.3 Test of Linearity

Linearity testing locates the association of independent variables with dependent variable which predicts the hypotheses' right direction; therefore, the positive values indicate the relationship is considered positive. Based on the suggestion of Hair *et al.* (2006), the partial regression plot was used for each variable when there is more than one independent variable to guarantee the best representation in the equation. To achieve this purpose, the normal P-P plot of regression standardized residual plot was imposed for independent variables on dependent variable. The results showed that the normal distribution was achieved. In Appendix 1, the graph of the output for linearity test is attached.

### 5.6.4 Multicollinearity Test

Multicollinearity is used where the study has more than two independent variables that are highly correlated which can destroy the effect of multiple regressions (Cooper & Schindler, 2011). This test can be run by SPSS software where it is valuable to find whether the model has correlation between independent variables. If there is a correlation, it may have the problem of multicollinearity. To get the valid data regardless of the multicollinearity problem, it needs to detect the variable inflation factor (VIF) with an assumption that the VIF value of each predictor ranges between 0 and 1. If the value VIF of each predictor is 0, it is an excellent

correlation. If the value VIF of each predictor is 1, each predictor has no correlation with other predictor (Hair et al., 1987).

The test of multicollinearity among variables is highly recommended before beginning of testing the proposed model (Hair et al., 2010). It indicates to the existence of relapse of in the correlation matrix in which the independent variable is high and significantly correlated with another independent variable. In addition, the revelation of multicollinearity can be detected when the correlation value is more than 0.90 (Hair et al., 2010). The test of multicollinearity is facilitated by examining the variance influence factor (VIF) and the tolerance value. Moreover, the value of the VIF is the amount of variability of the selected independent variable which is explained by other independent variables whereas the tolerance is the inverse of VIF (Hair et al., 2010). The VIF and tolerance values cut-off pointes are 10 and 0.10 respectively which indicates that VIF closer to 1.00 represents little or no multicollinearity.

Table 5.7 shows that the three models highlight collinearity statistics for all independent variables. The strength of all the correlations was below 0.90, thus, indicating no serious multicollinearity (Hair et al., 2010). Additionally, VIF values range between 1 and 2.851, whereas tolerance values range between 0.351 and 0.687. Therefore, the results reported that there is no violation of multicollinearity assumption. The data is presented in Appendix 1 (Table 5.7).

## **5.7 Testing the Goodness of the Measurements**

The goodness of the measures of this study was examined by employing Factor Analysis using SPSS version 18.0 to identify the factors underlying the variables (in chapter 5) and utilized the Partial Least Square Structural Equation Modeling using SmartPLS 2.0 M3 to set up the construct validity of the measures that will be discussed in the following sections.

### **5.7.1 The Construct Validity**

According to Hair *et al.* (2010), the construct validity can be examined through the content validity, convergent validity, and discriminant validity.

### **5.7.2 The Content Validity**

The content validity refers to the degree to which the items proposed to measure a construct can suitably measure the concept that designed to be measured (Hair *et al.*, 2010). As recommended by Straub (1989), utilizing existing and validated scales enables future comparison with other research. In other words, the items that designed to measure a construct should be higher loaded on their respective than their loading on other constructs. Therefore, through comprehensive review of the previous studies in literature review, this can be insured of how items were generated.

Based on the analysis of factor analysis, all items were correctly assigned to their constructs. The Table 5.8 (refer Appendix 1) showed the content validity of the measure used as explained in two ways. Firstly, there are high loading in the items on their respective constructs when compared to other

constructs. Secondly, the loading of the items were significantly loading on their respective constructs assuring the content validity of the measures employed in this study as illustrated in Chow and Chan (2008). The data is presented in Appendix 1 (Table 5.8).

### 5.7.3 The Convergent Validity Analysis

The convergent validity is the degree to which a group of variables converge in measuring a specific concept (Hair *et al.*, 2010). As suggested by Hair *et al.* (2010), to establish the convergent validity, three criteria should be tested simultaneously, namely the factor loadings, composite reliability (CR), and average variance extracted (AVE). Hence, the loading of all items were examined where all items have loading more than 0.7 which is an acceptable level according to the multivariate analysis literature (Hair *et al.*, 2010). Table 5.9 indicates that all the factors' loading were significant at the 0.01 level of significance.

The second criterion to test convergent validity is the composite reliability which refers the degree to which a set of items consistently indicate the latent construct (Hair *et al.*, 2010). In Table 5.9, the values of Cronbach Alpha and Composite Reliability were examined. The values of Cronbach Alpha ranged from 0.715 to 0.945 and the Composite Reliability ranged from 0.883 to 0.956 which exceeds the recommended level of 0.7 (Fornell & Larcker,



1981; Hair *et al.*, 2010). Therefore, these results confirm the convergent validity of the outer model.

Furthermore, the values of the average variance extracted (AVE) were examined to confirm the convergent validity of the outer model. AVE reflects the average of variance extracted among a group of items in relation to the variance shared with the errors of measurement. In other words, AVE measures the variance captured by indicators in relation to the variance assignable to the measurement errors. Hence, if the value of AVE is at least 0.5, so these set of items have an adequate convergence in measuring the concern construct (Barclay *et al.*, 1995). In the study, AVE values range between 0.565 and 0.878 that indicate a good level of construct validity of the measures used (Barclay *et al.*, 1995). The data is presented in Appendix 1 (Table 5.9).

#### **7.4 The Discriminant Validity Analysis**

For more confirmation about construct validity of the outer model, it is very important to establish the discriminant validity. Therefore, before testing the hypotheses through the path analysis, discriminant validity testing is a mandatory. Its measures show the degree to which items differentiate among constructs. In other words, the discriminant validity shows that items used different constructs do not overlap. In addition, the discriminant validity of the measures shared variance between each construct and, therefore, should be greater than the variance shared among

distinct constructs (Compeau, Higgins, & Huff, 1999). For the purpose of this study, the discriminant validity of the measures was confirmed by employing the method of Fornell and Larcker (1981). As explained in Table 5.10, the square root of AVE for all constructs was replaced at the diagonal elements of the correlation matrix. The discriminant validity of the outer model for this study was confirmed where the diagonal elements in the table were higher than the other elements of the column and row in which they are located. As a result of the above testing for construct validity of the outer model, it is assumed that the obtained results pertaining to the hypotheses testing should be reliable and valid. The data is presented in Appendix 1 (Table 5.10).

#### **5.7.5 Global Fit Measure (GoF)**

Before presenting the results of the structural model, where preliminary analysis regarding global fit measure (GoF) is presented. Results from this analysis help the current analysis by providing validating conclusions about the PLS structural model and providing positive signal for global application of the model. Global fit measure (GoF) for the PLS path modelling is defined as the geometric mean of the average communality (outer measurement model) and the average R squared ( $R^2$ ) for the endogenous constructs (Tenenhaus, Amato, Esposito, & Vinzi, 2004). Hence, GoF becomes an index for validating the PLS model globally using the performance of both measurement and structural models. More precisely, it is used to assess the overall fit of the model (Tenenhaus *et al.*, 2005), thus,

the closer the GoF index to 1, the better the fit of the model under consideration.

To support the validity of the current PLS models, GoF value has been estimated according to the guidelines suggested by Wetzels, Odekerken-Schröder, and Oppen (2009). Specifically, GoF for the models was calculated using the following formula:

$$GOF = \sqrt{\bar{R}^2 \times (AVE)}$$

To guide for ascertaining the adequacy of global PLS model validity accurately, Wetzels *et al.* (2009) have provided baseline values as follows: (a) 0.1 equals to small, (b) 0.25 equals to medium and finally (c) 0.36 equals to large. The calculated GoF is 0.21, thus indicating the evidence of adequate global PLS model validity (Wetzels *et al.*, 2009). The data is presented in Appendix 1 (Table 5.11).

## 5.8 Structural Model

This section presents results of the structural model and tests of hypotheses for the study. Specifically, the section is concerned with testing of the hypotheses related to the main and mediating effects. Therefore, PLS path approach multiple regressions are conducted for the main effects. Furthermore, using the PLS bootstrapping output, the effects of mediating are calculated. However, before presenting the main and mediating effects, or test of the hypotheses, the hypotheses are restated to reflect all constructs of the model.

### 5.8.1 Restatement of the Hypotheses

Before analysis of the results and test of the hypotheses, this section presents restated hypotheses to reflect changes in the composition of constructs' measurements experienced after confirmatory factor analysis conducted earlier. The restatement of the hypothesis is presented in table 5.12.

Table 5.12

*Restatement of the Hypotheses*

No	Hypothesis Statement
H1	Attitude positively affects the intention to use e-money mobile
H2	Subjective norm positively affects the intention to use e-money mobile
H3	Perceived behavioral control positively affects the intention to use e-money mobile
H4	Awareness positively affects the intention to use e-money mobile
H5	Perceived risk negatively affects the intention to use e-money mobile
H6	Perceived security positively affects the intention to use e-money mobile
H7	Awareness positively affects the relative advantage towards intention to use e-money mobile
H8	Complexity negatively affects the relative advantage towards intention to use e-money mobile
H9	Relative advantage positively affects the attitude towards intention to use e-money mobile
H10	Complexity negatively affects the attitude towards intention to use e-money mobile
H11	Social cultural influence positively affects the subjective norm towards intention to use e-money mobile
H12	Family has positively affects the subjective norm towards intention to use e-money mobile
H13	Self-confidence positively affects the perceived behavioral control towards intention to use e-money mobile
H14	Resources facilitating conditions positively affects the perceived behavioral control towards intention to use e-money mobile

Based on above restatement of hypothesis, to find whether the variables are used in this study supported or rejected, the results of the structural model are presented in Appendix 1 (Table 5.13).

### **5.8.2 Effect Size**

According to Cohen's (1988) criterion, the effect size is less than 0.02 are less (0.02=small, 0.15=medium, 0.35=high). In Table 5.14, the effective size of all variables are more than 0.1, however some other are less and considered as small. In the other table 5.14 (Appendix 1), the interaction was large between relative advantage and complexity, and between self-confidence and perceived behavioral control.

## **5.9 Summary of the Findings**

This study employs Partial Least Squares Structural Equation Modeling (PLS-SEM) as the technique of analysis. In this chapter, an elaborate treatment of the PLS-SEM mechanism analysis technique was given for the reason that PLS is a new analysis technique in construction. Before testing the model of this research, rigorous steps were followed to establish the reliability and validity of the outer model as a standard reporting in SEM data analysis. After proving the validity and reliability of the measurement model, the hypothesized relationships were tested. After examining the hypothesized relationships between constructs, the predictive power of the model was examined and reported followed by

testing the goodness of the overall model which was confirmed. The last procedure was examining the structural model and the results were reported in details. The follows table 5.15 shows the results of the tested hypothesis.

Table 5.15

*Summary of the Results*

<b>Hypothesis</b>	<b>Statement</b>	<b>Decision</b>
H1	Attitude positively affects the intention to use e-money mobile	supported
H2	Subjective norm positively affects the intention to use e-money mobile	supported
H3	Perceived behavioral control positively affects the intention to use e-money mobile	supported
H4	Awareness positively affects the intention to use e-money mobile	rejected
H5	Perceived risk negatively affects the intention to use e-money mobile	supported
H6	Perceived security positively affects the intention to use e-money mobile	supported
H7	Awareness positively affects the relative advantage towards intention to use e-money mobile	supported
H8	Complexity negatively affects the relative advantage towards intention to use e-money mobile	supported
H9	Relative advantage positively affects the attitude towards intention to use e-money mobile	supported
H10	Complexity negatively affects the attitude towards intention to use e-money mobile	supported
H11	Social cultural influence positively affects the subjective norm towards intention to use e-money mobile	supported
H12	Family has positively affects the subjective norm towards intention to use e-money mobile	supported
H13	Self-confidence positively affects the perceived behavioral control towards intention to use e-money mobile	supported
H14	Resources facilitating conditions positively affects the perceived behavioral control towards intention to use e-money mobile	supported

## CHAPTER 6

### DISCUSSION AND CONCLUSION

#### 6.1 Introduction

This chapter discusses the findings of the study based on the research questions and research objectives as stated in chapter one. It includes discussion on the theoretical and managerial implications, limitations and suggestions for future research while the chapter ends with the study conclusion.

#### 6.2 Recapitulation of the Study Findings

The study investigates the antecedents of intention to use e-money mobile with focuses on positive effect between attitude, awareness of services, subjective norm, perceived behavioural control, perceived risk and perceived security with the intention to use. It also investigates the positive effect between antecedents of attitude (complexity and relative advantage) with attitude, awareness with relative advantage, antecedents of subjective norm (family and social cultural influence) with the subjective norm, and antecedents of perceived behavioural control (self-confidence and resources facilitating conditions) with perceived behavioural control.

The first objective of this study is to investigate attitude influences intention to use e-money mobile. The second objective of the study is to determine subjective norm influences intention to use e-money mobile. The third objective of the study is to investigate awareness influences intention to use e-

money mobile. The fourth objective of the study is to determine perceived behavioural control influences intention to use e-money mobile. The fifth objective of the study is to investigate perceived risk influences intention to use e-money mobile. The sixth objective of the study is to determine perceived security influences intention to use e-money mobile. The seventh objective of the study is to identify the antecedent factors that influence attitude towards an intention to use e-money mobile. The eighth objective of the study is to identify the antecedent factors that influence subjective norm towards an intention to use e-money mobile. Ninth objective of this study is to identify the antecedent factors that influence perceived behavioural control towards an intention to use e-money mobile. The tenth objective of this study is to investigate complexity influences relative advantage towards an intention to use e-money mobile. Finally, the objective of this study is to determine awareness influences relative advantage towards an intention to use e-money mobile.

Revisiting the study's objectives, this study is commenced to seek answers to some research questions:

- i. Does attitude influence intention to use e-money mobile?
- ii. Does subjective norm influence intention to use e-money mobile?
- iii. Does awareness influence intention to use e-money mobile?
- iv. Does perceived behavioural control influence intention to use e-money mobile?
- v. Does perceived risk influence intention to use e-money mobile?



- vi. Does perceived security influence intention to use e-money mobile?
- vii. What are the antecedent factors that influence attitude towards an intention to use e-money mobile?
- viii. What are the antecedent factors that influence subjective towards an intention to use e-money mobile?
- ix. What are the antecedent factors that influence perceived behavioural control towards an intention to use e-money mobile?
- x. Does complexity influence relative advantage towards an intention to use e-money mobile?
- xi. Does awareness influence relative advantage towards an intention to use e-money mobile?

With regards to the eleven research question, the structural equation modeling analysis undertaken discovers that out of fourteen hypotheses tested, only one hypothesis is not supported. The hypothesis is effect awareness on intention to use e-money mobile. Otherwise, the fourth hypothesis found that awareness has a positive impact on the relative advantage. The other hypotheses have shown a significant positive impact on intention to use e-money mobile which comprises antecedents of attitude (complexity and relative advantage), antecedents of subjective norm (social cultural influence and family), antecedents of perceived behavioural control (self-confidence and resource facilitating conditions), antecedents of relative advantage (complexity and awareness), perceived risk, and perceived security at significant level of  $p < 0.001$ .

### **6.3 Discussion**

As mentioned above, this study is to examine factors that influence consumers' intention to use e-money mobile in Indonesia. This study utilizes the decomposed theory of planned behaviour (DTPB) by Taylor and Todd (1995a) as a basis for developing the research framework. The theory hypothesizes three factors (attitude, perceived behavioural control, and subjective norm) positively affects consumers intention to use e-money mobile. The DTPB then decomposes the three factors into specific beliefs. This study adds awareness, perceived security and perceived risk as new construct and its antecedent factors into the model and examines its influence on behavioural intention. Investigation and examination of these beliefs are anticipated to provide a better understanding of the antecedent's factors that influence technology adoption (Taylor & Todd, 1995a). Mobile users in Padang Indonesia were used in this study. Discussions focus on research questions as well as research objectives with hypotheses posited in this study.

#### **6.3.1 The Relationship between Attitudes, Subjective Norm, Perceived Behavioural Control, Perceived Risk and Intention to Use e-Money Mobile**

The research question examines whether attitude, awareness, subjective norm, perceived behavioural control, perceived risk and perceived security influence intention to use e-money mobile. The objective is to investigate the relationship between attitude, awareness of service,

subjective norm, perceived behavioural control, perceived risk and security influence intention to use e-money mobile. The research questions and objectives are discussed. Detail discussion of these hypotheses will be discussed as follows:

### **6.3.1.1 The Relationship between Attitude and Intention to Use e-Money Mobile**

To answer the research question that examines whether attitude influence intention to use e-money mobile, the discussion below is elaborated on findings of the study based on research hypotheses. Attitude describes an individual's positive or negative evaluation about performing a particular behaviour. Positive attitude towards consumers' behaviour refers to how they develop an intention to carry out that behaviour (Ajzen, 1991). In this study, consumers' attitude towards using e-money mobile refers to individual's evaluation positive or negative towards an intention to use e-money mobile. Attitude has long been shown to influence behavioural intentions (Ajzen & Fishbein, 1980).

As expected, attitude was found to have a significant positive effect on the intention to use e-money mobile. The result of this study found that the individuals have a positive attitude about behaviour, the more intention for them to perform that behavior

(Taylor & Todd, 1995a). Therefore, the greater consumers have positive attitude using e-money mobile, the higher their intention to use e-money mobile. So, the more negative the attitude, the weaker the behavioural intention to use e-money mobile. This finding is consistent with previous empirical studies (Schierz *et al.*, 2010; Norazah, 2011; Khalil & Pearson, 2008; Chang & Cheung, 2001; Bauer *et al.*, 2005; Tsai, 2010; Bruner and Kumar, 2005; Hong *et al.*, 2008; Hsu *et al.*, 2006; Suh & Han, 2002).

These studies conclude if the consumers have a positive attitude towards using the services, it directs to the intention to use e-money mobile. The significant results of this study imply that a positive influence of e-money mobile by individual to lead their intention to use the technology. It is because the customer receives some benefits toward their intention to use e-money mobile for transaction payment. The customers' value is high when cost using e-money mobile is less than the value they receipt. Besides, it indicates that attitude is a good predictor and become an important factor influencing the intention to use e-money by mobile users. It has been explained in ABC Model that the strength with which an attitude is held is often a good predictor of behavior. The stronger the attitude the more likely it should affect behavior.

ABC Model of attitudes is also known as a tri-component model of attitudes (Solomon, 2011, 1994; Schiffman & Kanuk, 2007, 2000; Webb, 2010). Attitudes structure can be described in terms of three components. It is presented in Figure 6.1 as follows.

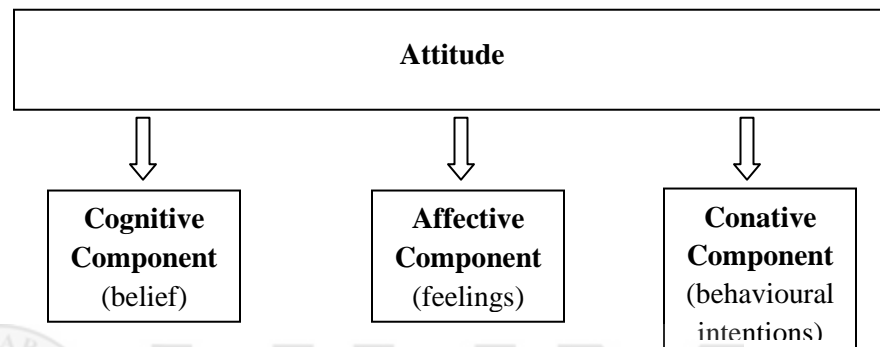


Figure 6.1  
*The Tri-components Model of Attitudes*

Source: Engel, Blackwell and Miniard (2010)

i. Affective (Feelings)

This involves a person's feelings / emotions about the attitude object. Besides, it becomes the way for the consumer to feel the object of attitude. The feeling can be positive or negative.

ii. Behavioral (Conative)

The way attitude influence action and behaviour. The consumers' intention is involved for doing something related to the object of attitude.

### iii. Cognitive (Beliefs)

This involves a person's belief / knowledge about an attitude object. The consumers are belief to the object of attitude. The consumers have a belief towards idea, event, person, activity or object.

Many authors have implemented the ABC Model of Attitudes in their studies. This model has closely involved the consumers' attitudes by determined their knowing, feeling, and doing (Solomon, 1994). For the marketers, attitudes bring some information and messages from the consumers, but the sources need to be carefully considered to maintain credibility, expertise, attractiveness and trustworthiness (Webb, 2010). The result also suggests that the formation of a positive attitude towards using e-money mobile user has to take place before the technology can be accepted.

In addition, the affect component for potential consumers' intent to use e-money mobile is started with feelings like or live at e-money mobile. It reflects the positive or favorable attitude towards e-money mobile. Then, when the consumers got some opinions and give them some advantages from e-money mobile, called cognitions components. If they go and use e-money to get the real advantages, it is called behavioral intentions.

The significant results between attitude and intention to use support Kim *et al.* (2009) that attitude is the main variable which should be included in the model when examining the technology acceptance of individuals. Moreover, the significant positive result of attitude and intention to use signify that the intention to use e-money mobile user could be enhanced by stimulating favorable attitude. It can be developed from kind of value customers have been gotten. A favorable attitude can be reflected in the positive attitude of customers towards the object. Therefore, the more the attitude is favorable, the greater the behavioral intention towards using e-money mobile.

As discussed in this chapter, the decomposition of attitude discloses that two factors significantly affect attitude (i.e. complexity, and relative advantage). Mobile service providers can utilize these factors to build a positive attitude of using e-money mobile amongst the customers. In order to form a positive attitude about the technology, e-money mobile need to focus more on the attention to these factors which as greater understanding of these factors might facilitate the formation of positive attitudes which then led to high intention to use the technology (Khalil & Pearson, 2008). Therefore, issuers should be aware of the importance of consumers' attitude since attitude plays an important role in stimulating their intention towards using a technology. Greater awareness of the importance of

this factor can assist practitioners in focusing the communications strategy on persuading the customers to use the product or services.

According to Schiffman & Kanuk (2007), to create persuasive communications the marketers need to influence consumption behavior. It reflects the interrelationship among persuasions' factors are perception, experience, and memory. Perception is the process by which these stimuli are selected, organized, and interpreted (Solomon, 1994). The process interpretation to stimuli the consumers is organized as follow.

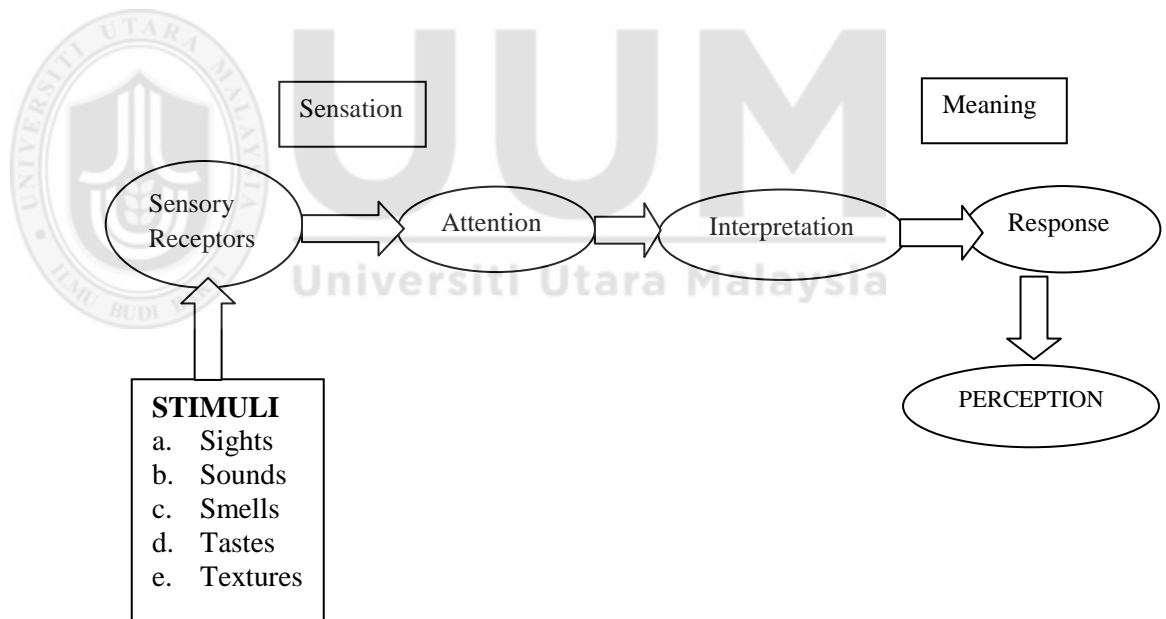


Figure 6.2

*An overview of the Perceptual Process*

Source: Solomon (1994)



In e-money mobile, the perceptual process started from the mobile device issuer which is an organization that has responsibilities to develop e-money mobile in Indonesia stimuli the potential consumers with the various promotional campaign (e.g. Newspaper, Magazines, television, Radio, Internet, Direct Mail, Direct Marketing). All of them can be sensory inputs which functioned to recall what consumers receive to response the products (Solomon, 1994). Then, it is continued with the attention that needs consumers' focus on stimuli in exposure range. If the consumers can decide what things mean is they can interpret the stimuli.

For the experiences, e-money mobile can practice the strategy of positioning to the potential consumers who use a mobile phone. Positioning is defined as how the product is perceived in the minds of consumers and customers (Webb, 2010). Product characteristic and marketing communications have the influence to the positioning. It is because the consumers have a talk, emotional response, and attitudes to the products. A positioning strategy that can be applied in e-money mobile is a perception on the basis of product attributes and benefits. It brings their experiences on particularly strong in one area. It means e-money mobile is perceived by most as a micropayment transactions. Memory relates to what consumers had learnt about products and services, the way their trust make purchase decisions. It has the possibility that internal memory combined with

external memory while the process of memory is pictured in Figure 6.3.

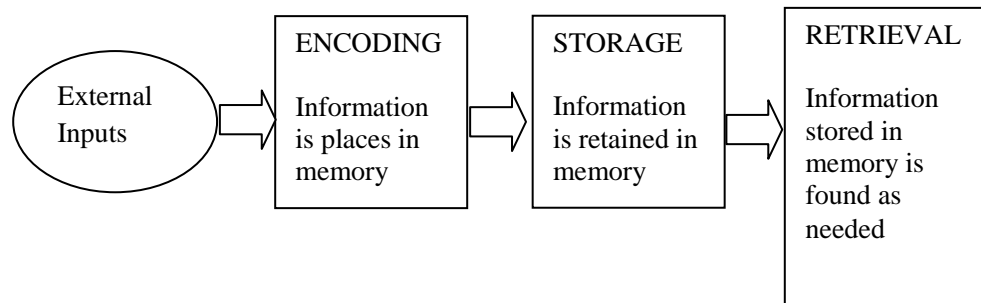


Figure 6.3

*The Memory Process*

Source: Solomon (1994)

This process in e-money mobile regards to the memory process from input sensory to the encoding stage. It puts some information is entered to be recognized. Then, all of the information is mass up as knowledge that is integrated into memory until it needed. Likewise, when consumers can access to what desire information, was retrieval stage.

Furthermore, in developing successful e-money mobile transaction, it requires the issuers to identify and focus on the right product for the right target market. Therefore, it is essential for issuers to have customers' profiles that hold more positive attitude towards using e-money mobile. Since youth segment is the most targeted segment by mobile service providers, keeping the profile of their product or

service preferences can help the companies to bring down marketing costs and enhance efficiency rather than carrying out mass mobile marketing programmers (Barutcu, 2007).

### **6.3.1.2 Decomposed Attitude: The Relationship between Relative Advantage and Complexity and Attitude in Case of the Intention to Use e-Money Mobile**

#### **6.3.1.2.1 The Relationship between Relative Advantage and Attitude e-Money Mobile**

To answer the research question that examines whether relative advantage as one of the antecedent factors that influence attitude.

The hypothesis of antecedents of attitude being discussed on the effect of relative advantage on attitude. Relative advantage is

analogous as perceived usefulness that refers to as an individual's perception that usage of technology will improve performance (Davis, 1989). In this study context, relative advantage refers to how consumers perceive that by using e-money mobile that will provide benefits to them in their daily lives. As hypothesized, relative advantage is found to have a significant positive effect on attitude. This result is consistent with previous research on information system acceptance (e.g. Al-Gathani & King, 1999; Horton *et al.*, 2001; Morris & Dillon, 1997; Taylor & Todd, 1995a) which found that relative advantage has a significant direct positive effect on attitude.

Furthermore, the effect of relative advantage on attitude has also been found in several studies (e.g. Bhattacharjee, 2000; Khalil & Pearson, 2008; Plouffe *et al.*, 2001).

The positive relationship between relative advantage and attitude in this study is consistent with previous findings of Cheong and Park (2005), Hsu *et al.* (2006), Park and Chen (2007), Schierz *et al.* (2010), and Teo and Pok (2003) who reported that relative advantage had significant direct positive influence on attitude. This is congruent with other studies that perceived relative advantage have a positive effect on user's intention to a new technology (Jeyaraj, Rottman, and Lacity, 2006; Nor and Pearson, 2008; Taylor and Todd, 1995a).

The significant effect of relative advantage on attitude implies that in order to form the individuals' positive attitude towards using the technology, they need to be formed first by the benefit of using the technology before individuals start using e-money mobile. There are various benefits of using e-money mobile.

According to Joshi (2005) described the consumer response hierarchy models by using 4 principles (attention, interest, desire, action), called 'AIDA' Model. 'AIDA' Model is using to give effect to the consumer, so they award to the product. It will make them interest and follow that product based on their desiring.

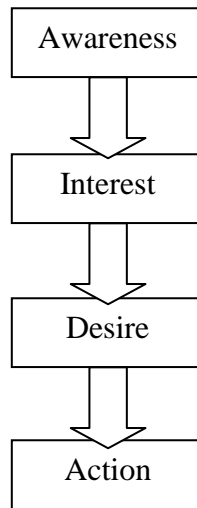


Figure 6.4

*The AIDA Model*

Source: Joshi (2005)

The AIDA model can be applied in e-money mobile as below:

i. Attention

The first step the practitioners need to do is catch the consumers' attention. It is a crucial part which makes lose profit immediately if they have lost attention the potential consumers. When they can achieve it, means a commercial ad of the e-money mobile has been promoted. In this case, the ad is launched by the issuers to attract the potential consumers' attention in term name, logo or other attributes used. The potential consumers' attention can make a great benefit for the organization. For example, the strategy of

using a celebrity as brand ambassador to promote can improve the profit of organizations would be gotten, called celebrity endorsement. So, the practitioners need to identify the potential consumers that have strong reason to use e-money mobile.

ii. Interest

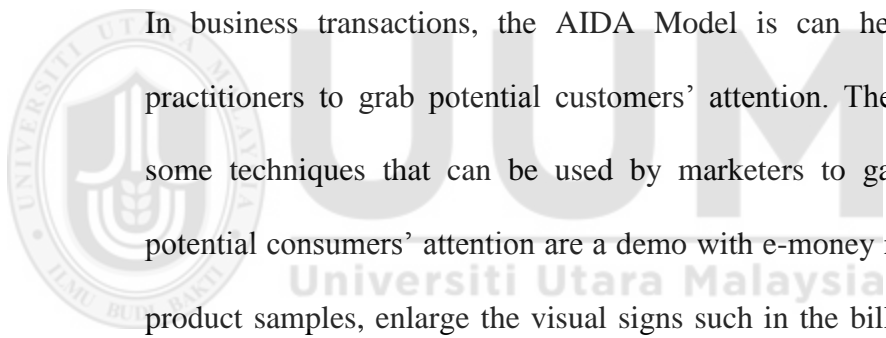
The interest can be applied after the practitioners grabbed the potential consumers' attention. The interest relates to building emotional of the consumers to purchase. The practitioners need to highlight the values their got when purchased. Indirectly, they knew they lost some advantages if they do not buy the products or services.

iii. Desire

After the potential consumers have interest to the products or services, then they have to be switched the interest to make the strong desire to what suggested. For e-money mobile, the potential consumers can be attracted by television's ads, posters ads or on a road show. This advertising can involve the potential consumers' motivation to buy the products. It is because they have appeal towards the products even though they have no needs to the products.

#### iv. Action

The action reflects consumers' final buy. It means that the consumers had decided to get the products or services because they have known more them. In e-money mobile, the action comes from the potential consumers that were being attractive and get some beneficial value from the e-money if they use. With using e-money mobile for all of the micropayments transaction, it makes them feel the benefits clearly that use cash as usual.



In business transactions, the AIDA Model is can help the practitioners to grab potential customers' attention. These are some techniques that can be used by marketers to gain the potential consumers' attention are a demo with e-money mobile product samples, enlarge the visual signs such in the billboard, etc. the important thing is the marketer has to promote through products' information and ads.

#### **6.3.1.2.2 The Relationship between Complexity and Attitude towards Intention to Use e-Money Mobile**

To answer the research question that examines whether complexity as one of the antecedent factors that influence attitude. The hypothesis of antecedents of attitude is being discussed on the effect of complexity on attitude. Complexity:

“The degree to which an innovation is considered relatively difficult to understand and use (Taylor & Todd, 1995). Some innovations or new idea may be complex or being difficult for adopters or potential adopters to use (Rogers, 1995). The result of this study also supports hypothesis 10 that complexity has a significant negative to attitude. The complexity is considered in aspects of the efficiency of data transformation, interface design, and system support function, while wireless trust environment is considered in terms of security and privacy (Lu, et al., 2003). A study in Yemen indicated complexity was negative significantly correlated with attitude. Complexity was negative significantly correlated with the attitude of using the online trading system (Zolait & Sulaiman, 2008; Lau, 2002). Complexity was negative significantly related to attitude on behavioral intention (Taylor and Todd (1995b).

Shih and Fang (2004) used DTPB in predicting the adoption of Internet banking among Taiwanese bank customers that complexity had a significant negative effect on attitude. In addition, the characteristic products need to focus part on attracting attitudes of consumers' intention to use e-money mobile. There are five product characteristics that influence attitudes of consumers are created towards new products and



services (Rogers, 1993; Goldsmith and Flynn, 2004; Goldenberg *et al.*, 2001; Steenkamp and Gielens, 2003):

i. Relative advantage

In relative advantage, the product is based on consumer perception. If a consumer sees the new product attribute as better than existing ones, it does not necessarily mean that attribute is actually better. There is a direct relationship between positive relative advantage and new product adoption rates. The more a consumer views a certain attribute as being better than those of existing product attributes, the more rapid the rate of adoption. A new product's/service's relative disadvantages have an opposite effect on the adoption rate. There is something value a new product offered compared to other products.

ii. Complexity

The extent to which the consumer considers the innovation to be difficult utilizes in known as the innovation's complexity. If the innovation has a high level of complexity, it will have a lower level of adoption. If the innovation is perceived as being less complex than it is existing counterparts, a marketer can sometimes use the advantage to gain a price premium on the new product or

service. The facility is purposed to understand and use a new product to make consumers' easier accesses it.

iii. Compatibility

Compatibility is how the consumer perceives the new product or service into the person's lifestyle choices. When the product or service closely matches the individual's experiences, needs, wants, beliefs, norms, values, and consumptions patterns, the innovation can be considered highly compatible with the consumer.

iv. Trialability

If the new product or service can be tried out for the limited time period before an actual outlaying of money, the product adoption rates will rise substantially. Trialability reduces the consumer's perceived risk of making a purchase of the product. They have the ability to test the product before final purchase. By letting the customers try the product before the purchase, it shows them that there is a confident enough to the product to allow them to try it before they make a purchase.

v. Observability

The extent to which a potential consumer can observe the innovation and its positive effects is known as observability. If a purchase of the new product was visible

to other consumers. The more the positive effects are sensed, the more observable the effects are to the consumer.

In e-money mobile, the five product characteristics can be applied to be adopted. This is a crucial part for the consumer to make a decision with respect to the new products and significantly influenced the process of innovation adoption for research (Goldsmith and Flynn, 1992; Rogers, 1993; Goldenberg *et al.*, 2001; Steenkamp and Gielens, 2003).

Therefore, more consumers get the complex access to products or services, more consumers have no attitude and intentions to use e e-money mobile. Utilizing the complexity of the procedures is establishing to facilitate researchers and marketers in understanding attitudes of consumers to use e-money mobile. The important thing is the role of the complexity clearly showed that this construct cannot be removed from the model due to necessary support by the previous study.

### **6.3.1.3 The Relationship between Subjective Norm and Intention to Use e-Money Mobile**

To answer the research question that examines whether subjective norm influence intention to use e-money mobile, the discussion below is elaborated on findings of the study based on research hypotheses.

Subjective norm refers to an individual's perceptions of other people's opinions on whether he or she should perform or not a particular behaviour (Ajzen, 1991). In this study, subjective norm consists of two antecedent factors namely social cultural influence and family.

The result of this study also supports hypothesis 2 that subjective norm has a significant direct positive influence with the intention to use e-money mobile. The significant result of subjective norm and intention to use e-money mobile in this study is congruent with prior empirical studies of information related literature (e.g. Bhattacharjee, 2000; Harrison *et al.*, 1997; Karahanna *et al.*, 1999; Limayem *et al.*, 2000; Taylor & Todd, 1995a, 1995b; Venkatesh *et al.*, 2000). The finding is also in line with other studies of Internet related (e.g. Hanudin, 2008; Jasman *et al.*, 2005; Khalil & Pearson; 2008; Ramayah *et al.*, 2009a) found that subjective norm has a direct significant positive influence with behavioural intention to use the technology.

In particular, the result in this study validates if refers to the previous work on the positive effect of subjective norm on intention to use the technology (Bauer *et al.*, 2005; Karjuoloto & Alatalo, 2007; Lu *et al.*, 2003; Pedersen, 2005). The positive effect between subjective norm and intention to use in this study are also consistent with previous findings of Jayasingh and Eze (2009), and Shin *et al.* (2009) who reported that perceived pressure or opinion from the people who consumers think is

important positively affect their intention to use the technology. The opinion leaders are defined as an individual who gets the information from the media and passes it along to their peers (Webb, 2010). It is very important in a business transaction which helps the marketers to develop the best communication strategy. The situation can determine how the consumers used the opinion leaders. The situations can come from opinions family, friends, and media.

In e-money mobile, it is powerful as influencers for diffusion innovations because the new ideas can be quickly accepted in the markets (Webb, 2010). For the marketers, the opinion leaders have a power to the consumers because it offers positive and negative information relate to the performance of the product. Therefore, they more respect to look into the advice of opinion leaders.

The opinion leaders are close to the person's reference group. According to Schiffman & Kanuk (2007), "the reference group is any person or group that serves as a point of comparison (or reference) for an individual in forming either general or specific values, attitudes, or a specific guide for behavior". It can be concluded that reference group is very important for the consumer to be referred what advice that is suitable to be recommended.

Therefore, an opinion leader has to bring some valuable sources of information. Based in Webb (2010), the opinion leaders are divided into two types:

i. Monomorphic opinion leaders

These are some people who expert in one particular area is called monomorphic opinion leaders.

ii. Polymorphic opinion leaders

These are some people who expert in number or several different area or fields, called polymorphic opinion leaders.

Based on these two types, the second type, polymorphic opinion leaders, are more appropriate for marketers to take a strategy to attract intention of potential consumer to use e-money mobile. It is because the polymorphic opinion leaders happen for everyday interactions and decisions. Therefore, the consumers need to identify the opinion leaders before accept the advice or suggestions. It can be taken by the marketers to decide who appropriate to be opinion leaders for e-money mobile. It is because opinion leaders are central for the consumer to make a decision (Solomon, 1994).

On another view, the significant result of this study proposes that social pressure is an influencing factor in determining one's behaviour towards an intention to use e-money mobile. Ajzen (1991) proposed that attitudes towards behaviour, subjective norm, and perception of behavioural

control are individuals' determinant factors of behavioural intention which can influence their behaviour towards the use of a specific technology. This exhibits that user's behavioural intention is not only determined by their attitude but also by other factors such family's opinion. In another word, it can be said that when users find that people around or closest to them have adopted e-money mobile, they have more intention towards using them.

The result of this study proposes that the greater influence of social pressure, the stronger behavioural intention to use e-money mobile. There is a number of studies have found that subjective norm has no significant effect on behavioural intention (e.g. Chau & Hu, 2001; Davis *et al.*, 1989; Hsu *et al.*, 2006; Mathieson, 1991). As noted by Taylor and Todd (1995a), the inconsistency results from several previous studies regarding the influential effect of subjective norm on intention because the researchers employ students as subjects of the study. This is due to the perception of real consequences associated with the target behaviour can be excessively influenced by relevant another opinion, for example, professors and peers in their study of intention to use computer resource centre.

The nature of the profession may partly explain the insignificant effects of subjective norm on behavioural intention (Chau & Hu, 2001). However, as stated by Pedersen (2005) subjective norm should play a significant role when conducting the research in a mobile service context.

That might be the plausible reason for the significant relationship of the subjective norm to behavioural intention in most of the prior studies and similarly so in this study. Another possible reason for the significant result is due to decomposition approach of subjective norm taken in this study.

#### **6.3.1.4 Decomposed Subjective Norm: The Relationship between Social-Cultural Influence and Family and Subjective Norm towards Intention to Use e-Money Mobile**

To answer the research question that examines whether social-cultural influence and family as two antecedents factors that influence subjective norm. The hypothesis of antecedents of subjective norm being discussed. This study hypothesizes that individuals will have a higher intention to use e-money mobile if they have socially supportive reference groups like friends and family, who are e-money users. In this study, the subjective norm has been decomposed into social-cultural influence and family who could influence individuals to use e-money mobile. As expected, the hypotheses for social cultural influence and family are found to have a significant positive effect on the subjective norm. Therefore, hypothesis 11 and hypothesis 12 are supported in this study.

The finding of this study is consistent with previous studies (e.g. Hsu *et al.*, 2006; Khalil & Pearson, 2008) which found that family's influences have a significant positive effect on the subjective norm. The result of



this study shows that the interpersonal influence (i.e. friends and family) is found to have a significant positive effect on the subjective norm. The internal factors for individuals which usually come from the connection with people closest to them will influence their intention towards using e-money mobile (Rao & Troshani, 2007). The significant finding in this study validates the earlier study by Fan *et al.* (2005) which stated that a user has more tendencies to suggest and recommend particular mobile services to other people if they are satisfied. Word of mouth from the people closest to individuals and feedback of a good experience in using e-money mobile might influence them to use the technology. Hsu *et al.* (2008) also verified that the experience users' groups are more concerned about other people's opinion rather than potential users on using the e-money mobile.

From a practical point of view, the finding of this study proposes that two reference groups' namely social-cultural influence and family do influence an individual to use e-money mobile. The result of this study also proved the endorsement from their family and social cultural influence towards intention for using e-money mobile might affect the individuals' beliefs, value and confidence in making the decision to use the technology. Therefore, e-money mobile should focus on this group in their promotional effort campaign, social value for each cultural and developed more effective educating. The importance of these reference groups was also highlighted by Hsu *et al.* (2006) which confirmed that

consumers put more confidence in making decisions by having an endorsement from their family and the social cultural environment. The significant finding of this study also emphasizes the importance of ensuring the positive remark from these reference groups since the positive feedback from this group will influence the acceptance of e-money mobile of those who are closest to them.

Mobile service providers also should understand and concentrate on characteristics of these reference groups because once the consumers decided to use e-money mobile, they can also bring their relatives and close friends together to enjoy the services. This finding concurs with Jung and Kau (2004) study on culture's influence on consumer behaviour which proved that family decision plays an important role in affecting consumer's purchase behaviour. Besides, Chong *et al.* (2010) also verified that family has an influential effect on individual's decision to adopt the technology. The more family and their social cultural effect the technology, the more new users will be encouraged to adopt the technology (Chong *et al.*, 2010). Understanding these two factors will aid or share knowledge e-money mobile to achieve the promotional goals and objectives in increasing intention to use e-money mobile as well.

### **6.3.1.5 The Relationship between Perceived Behavioural Control and Intention to Use e-Money Mobile**

In answering the research question and objective, this study highlights the findings of the relationships between perceived behavioural control and behavioural intention to use by discussing based on the following hypothesis. Perceived behavioural control refers to the individual perception of how easy or difficult to perform the technology (Ajzen, 1991; Ajzen & Madden, 1986). It reflects one's beliefs regarding access to the internal (self-confidence) and external factors that might hinder the performance of the behaviour (facilitating condition). As expected, the result of this study also supports hypothesis 3 that perceived behavioural control has significant positively affected the intention to use e-money mobile. Consistent with a number of previous studies (e.g. Bhattacharjee,2000; Harrison *et al.*, 1997; Hu *et al.*,1999; Lau,2002; Khalil & Pearson,2008; Liao *et al.*,1999; Lu *et al.*,2009; Taylor & Todd,1995a), perceived behavioural control is found to have a significant positive direct effect on behavioural intention.

The finding of this study verifies the results of earlier studies by Hsu *et al.* (2006), Lee (2010), Pedersen (2005), Quan *et al.* (2010), and Shin *et al.* (2009) on the important role of perceived behavioural control in stimulating intention to use. The finding also supports the theory that perceived behavioural control is a determinant factor of behavioural intention (Ajzen, 1991). The beliefs related with the ability to use the

technology are reflected in individual's perceptions concerning on access to the internal (e.g. self-confidence) and external factors (e.g. resources facilitating condition) that may hinder the performance of the behaviour (Ajzen, 1991).

Mathieson (1991) for example discovered that control was a significant determinant of intention to adopt the technology. The study by Bhatti (2007) and Truong (2009) proved that perceived behavioural control have significant and directly influence intention to use the technology. The significant result of perceived behavioural control on intention to use in this study proposed that individuals are likely to engage in e-money when they believe that they have the ability to use the technology. In other words, the person or individual will perform in certain behaviour if they believe that they have enough resources and have their confidence in performing the specific behaviour. This finding also reveals that in order to use technology like mobile marketing, an individual's degree of control can directly impact the intention to use the technology (Chou *et al.*, 2004; Yang *et al.*, 2007).

One plausible explanation for this significant result is that individuals are likely to engage in e-money mobile when they believe that they have the ability and resources to use the technology. With respect to the intention to use e-money mobile, higher levels of self-confidence and the belief of having enough resources will lead to higher levels of perceived

behavioural control which then lead to higher levels of behavioural intention. In other words, the lack of facilitating conditions represents barriers to usage and may inhibit the formation of an intention to use (Compeau and Higgins 1991). The significant finding has also noted that when investigating intention to use e-money mobile, researchers need to emphasis on the influence of perceived behavioural control.

#### **6.3.1.6 Decomposed Perceived Behavioural Control: The Relationship between Self-confidence and Facilitating Conditions and Perceived Behavioural Control towards Intention to Use e-Money Mobile**

To answer the research question that examines whether self-confidence and facilitating conditions as two antecedents' factors that influence perceived behavioral control. The hypothesis of antecedents of perceived behavioral control being discussed. This study hypothesized Self-confidence positively affects perceived behavioural control. As hypothesized, Self-confidence has a positive significant effect on perceived behavioural control. Therefore, the result of this study supports the hypothesis 13. The significant result of this study is consistent with the results from previous studies (e.g. Bhattacharjee, 2000; Hsu *et al.*, 2006; Shin *et al.*, 2009; Taylor & Todd, 1995a, 1995b). The result of this study signifies that self-confidence or efficacy to use e-money mobile might affect an individual's perception of behavioural control and later affect intention to use the technology which in turn will influence the use of e-money mobile. The finding reported in this study

supports Khalil and Pearson (2008) finding that individuals with high self-confidence reported higher control about the intention to use the technology. The result also verifies the finding by Shih and Fang (2004) which claimed that self-confidence as an important determinant of perceived behavioural control. The significant result of both self-confidence reveals that individuals with high level of self-confidence can enhance their inclination to use the technologies due to they have no fear of challenges and manage to overcome the difficulty, hence they can easily use the technology (Chong *et al.*, 2010).

Another possible reason for this significant result is because of the respondents of this study is relatively young users which have more exposure to the development of e-money mobile technologies and fast learner groups of the technologies. This can lead to increase their self-confidence towards using mobile marketing services. This is due to self-confidence is a set of self-belief which the users believe on their own capability to do something effectively (Chong *et al.*, 2010). The finding of this study proposes that e-money mobile might focus their marketing effort to improve individual's self-confidence towards using e-money mobile. The individuals' that have higher self-confidence might have higher control towards using the technology. The significant result of self-confidence implies that the users of e-money mobile will have a higher confidence level if they have guidance towards using e-money mobile. Hence, in enhancing the customers' confidence, the issuers

should provide opportunities for customers to try the e-money mobile. Some customers might experience a lack of confidence in using e-money mobile, especially for unfamiliar product or services. Therefore, in order to increase the customers' confidence, issuers should demonstrate to customers and offer the easiest way and be more user-friendly for them to try out the e-money mobile.

The issuer also needs to ensure the support services are readily accessible. Confidence might be affected by a concern that supporting or assisting is difficult to get when customers face with difficulties of using the technology. Hence, it is important to note that self-confidence plays an important role in influencing consumer control beliefs towards an intention to use e-money mobile. As declared by Bandura (1995), people who have high self-efficacy of confidence prefer to carry out more challenging tasks. In other words, people with high self-confidence are likely to perform a related behaviour compared to those who have low self-confidence. Therefore, in order to increase the perceived behavioural control, the consumers' self-confidence needs to be enhanced respectively.

Facilitating conditions refer to beliefs about the availability of facilities or resources that are needed to engage in a specific behaviour (Triandis, 1980). It refers to the amount of resource or opportunity that a person possesses or obstacles that the consumer has or faces in using e-money mobile (Lau, 2002). In this study, it refers to beliefs on the availability

of resources (i.e. money, information, skill and time) which are needed in e-money mobile activities. In the case of e-money mobile, such resources include access to e-money mobile. As hypothesized, the results indicate that facilitating conditions ( $\beta = 0.383271^{***}$ ,  $t=7.227$ ,  $p < 0.01$ ) have a positive significant effect on perceived behavioural control. Hence, hypothesis 14 is supported. This finding has also been supported in other studies (e.g. Bhattacharjee, 2000; Khalil & Pearson, 2008; Lau, 2002; Taylor & Todd, 1995a, 1995b). The result of this study proposes that the influence of facilitating condition could impact an individual's perception of the ease or difficulty of engaging in e-money mobile. Moreover, the facilitating conditions are one of the concerning factors in conducting online transactions (Lau, 2002). It can be said that individuals perceive that they can easily engage in e-money mobile activities if the resources to use the technology are readily available.

The significant result in this study also reveals that self-confidence and resource facilitating conditions are the main factors that influence the individual's perception of behavioural control. This has been proved in past empirical researchers (e.g. Bhattacharjee, 2000; Khalil & Pearson, 2008; Taylor & Todd, 1995a) who postulated that self-confidence and resource facilitating conditions positively affected perceived behavioural control. The significant result in this study reveals a direct message to issuers who need to build their customer's confidence level that by demonstrating the product to the customers. In addition, issuers should



also ensure that the availability of the resources needed in using e-money mobile is always accessible. By providing the availability of the resources, it can facilitate customers towards using the services. This can be done by educating and providing customers with the knowledge about the products or services. The companies might also consider offering customers with trial services for a certain period which might increase their behavioural control and lead to their intention towards using e-money mobile. With regard to technology facilitating conditions, network interconnectivity is a key determinant of services availability (Hsu *et al.*, 2006) which will lead to the perception of behavioural control.

#### **6.3.1.7 The Relationship between Perceived Risk and Intention to Use e-Money Mobile**

The hypothesis for antecedents of behavioural intention which is perceived risk is discussed in answering the research question. The following discussion is discussed on the influence between perceived risk and behavioural intention. According to Webb (2010), perceived risk is defined as “the fear that the purchase of products or services may result in disappointment or unpleasant consequences”. Consumers constantly make the decision about the product that they want to buy. Perceived risk will be described how the consumer perceived some risk if they purchase some products. Schiffman and Kanuk (2010:201) defined that:

*“Perceived risk is defined as the uncertainty that customers face when they cannot foresee the consequences of their purchase decisions”.*

Based on above explanation, there are two main points are uncertainty and consequences. the consumer has to consider some risks that they will perceive when to do the e-money transaction such as the operational risk that will give the result in unexpected losses for the institution. It is because every institution has different forms of e-money schemes. However, compliance risk is the risk associated with regulations and information. Lastly, reputation risk is the risk that the reputation of an institution which might negatively affect the reputation of an institution (*risk2reputation*, 2013). Refers to this study, perceived risk refers to the user's subjectively perceived the losses or consequences due to uncertainties of using e-money mobile.

As hypothesized, perceived risk is found to perceived risk has an impact on intention to use on e-money mobile. Numerous studies (e.g. Crespot et al., 2009; Featherman & Pavlou, 2003; Korgaonkar & Wolin, 1999; Kim et al., 2008; Liao & Cheung, 2001; Mitchell, 1999; Miyazaki & Fernandez, 2001; Park & Jun 2003) have proved that perceived risk has negatively affected intention to use a technology. The significant influence of perceived risk on intention to use has also been verified in a number of studies in Internet banking related (e.g. Aldas-Manzano *et al.*, 2009; Anna & Bee, 2010; Ozdemir & Trott, 2009). This finding validates the work of earlier studies by Chen (2008), Kleijnen et al. (2004), Lee and Lee (2007), Luo et al. (2010) and Wu and Wang (2005) that acknowledged perceived risk has a negative direct influence on

consumers' intention to use the technology. The finding also supports the need for further verification by Yang & Zhang (2009) on the impact of perceived risk in e-money mobile. This result may contribute in terms of validation on the impact of perceived risk in e-money mobile acceptance study that significantly influences intention to use.

The significant result in this study implies that perceived risk is one of the important factors that determine consumers' intention to use e-money. The importance of perceived risk has been established in prior studies (Dowling & Staelin, 1994; Kleijnen et al., 2004; Mitchell 1992; Taylor 1974; Yang & Zhang, 2009) which declared that perceived risk is a key element of the buyer-seller relationship. Additionally, perceived risk plays a crucial and important in determining adoption process in a mobile context (Kleijnen et al., 2004; Li & Bai, 2010). Hence, perceived risk should be addressed by issuers in order to encourage consumers to use e-money mobile.

The consequences of some transactions in mobile marketing may put consumers at risk due to an uncertain situation. Therefore, issuers need to assist their customers in reducing the risk or uncertainty by building their confident level in making decision to use e-money mobile. This is because of perceived risk or uncertainty affecting people's confidences in their decisions (Im *et al.*, 2008). This needs to be considered as one of the crucial factors in e-money mobile. This is due to the nature of mobile

phone itself which will put the users in online mode situation. Perceived risk was believed to be a predictor and barrier to the online transaction and predicted to negatively influence consumer's behavioural intention (Wu & Wang, 2005). Therefore, it can be said that the higher the perception of risk by consumers, the lower the rate of intention to use which later on will result in the lowering the mobile usage. This is due to perceived risk being verified to reduce consumers' intention (Jarvenpaa *et al.*, 2000; Pavlou & Gefen, 2004).

In addition, the perceived risk construct was identified and has been suggested as a direct antecedent of the consumers' intention as well as very important to reduce the uncertainty of consumers in conducting the transactions (Pavlou, 2003). Focusing on reducing uncertainty or risk reduction strategy is important because if consumers depend on unfamiliar technology, it will generate uncertainty towards using e-money mobile which then will lead to a negative experience which later on can affect the future adoption of innovation (Chen, 2008). Therefore, as proposed by Chen (2008) and the significant result in this study, in B2C environment particularly in mobile activities, the issuer should give priority to the perceived risk.

In addition, perceived risk has also long been recognized as a key determinant of adoption (e.g. Gatignon & Robertson, 1985; McAllister, 1995). That is because the consumers are more concerned about the

possible negative consequences of permitting personal information being used by unauthorized third party and also concerned about the lack of control of their information and unauthorized transactions (Earp & Baumer, 2003). Since perceived risk is found has significantly affected intention to use, marketers need to address this factor in developing and planning the promotion strategies of mobile marketing to targeted customers to attract them to use e-money mobile in the transaction. The significant finding in this study provides evidence on the important role of consumers' uncertainty in shaping their intention to use e-money mobile. The result also implies that perceived risk or uncertainty plays an important role in determining the consumers' intention to use e-money mobile.

According to Schiffman & Kanuk (2010), these are 6 (six) strategies for reducing perceived risk are:

i. Consumer seeks information

The consumers need to get some information relate to products and its category from some valid sources (opinion's family, friends, salespeople, or mass media). However, it takes times to choose and search the information about high-risk products' consequences. Therefore, the consumers go straightforward and logical to the information. For the marketer, it can be solutions to offers the right information for the consumers. The more information they got the more predictable for the consequences of probability.

ii. Consumer is brand loyal

To make the consumers loyal to the brand, firstly they have to be satisfied. When consumers avoid the risk because they satisfied to the product, they might not to choose a new or untried brand. For a marketer, it is a great message to make the consumers be high-risk perceivers. Some point can be a highlight to make them loyal is consistent with the product qualities, offer the best services and accept the consumers complaints to improve better brand in future.

iii. Consumer selects by brand image

The consumers often that well-known products are worth to buy and better to be implied the quality assurance, service, dependability, and performance. For consumers who have no the experiences through the products can get a helping from the promotions. The marketers can use the strategy of promotional efforts as a supplement for the consumer to get to know the quality of the product. It can help them to understand the favorable image of the product.

iv. Consumers rely on store image

The store image is another part that needs to be consent for marketers. Therefore, they have to focus on the product testing image and service assurance, privileges of return, dissatisfaction adjustment. The consumers who have no more information about

the product, they tend to trust and judge the product by its merchandise.

- v. Consumer buys the most expensive model

It often happens when consumers doubt to the product, the most expensive are the probably the best of quality or price.

- vi. Consumer seeks reassurance

The wisdom of the product is one of the consumers accepted through the products. The consumers need to seek for reassurances such guarantees for money-back, test for private laboratory or government, pre-purchase and warranties.

#### **6.3.1.8 The Relationship between Perceived Security and Intention to Use e-Money Mobile**

The hypothesis for antecedents of behavioural intention which is perceived security is discussed in answering the research question. The following discussion is discussed on the influence between perceived security and behavioural intention. The only object not explicitly part of any of the more extensive theories on acceptance of technology is the perceived security (PS). The security system becomes the main concern to the implementation of electronic cash must be. However, the security can help the consumer to avoid hackers to attack their account. Besides, it can undermine public confidence. In Several measures are commonly taken to address security issues, so limits on the amount of value are still can be stored on consumers' and merchants' (BIS, 2001). In e-money

system, a record of the transaction is designed only to the owner of e-money. Consequently, the owner of e-money has to contact the centre of database office. It is because they need to top-up some value to their tools. Strauss et. Al. (2006:147) stated that "*Commercial online databases contain publicly available information that can be accessed via the Internet*". Based on that explanation, the online databases can give the detail information about the company and personality of the consumer. This system will help the consumers when they have a problem or complaint about the e-money transaction system to the issuer. However, e-money transactions have big risk such as e-criminals. E-criminals' intelligence hackers have more connection and channel to log in the consumer data (Al-hamami, Najadat, Wahhab, 2012). In this study, perceived risk refers to the user's subjectively perceived security intent to use e-money mobile. As hypothesized, security is found to have a significant positive relationship with the intention to use e-money mobile. It has been taken up and proven similarly to be significant to the intention to use MPS by Chen (2008), Nysveen, et al (2005) and Schiertz et al (2010).

The reason is that in using a mobile phone as a platform the consumers are unsure about the security aspects concerning this. This leads to them not being sure it will be safe and this should have a negative impact on their intention to use the service. Here these aspects of security are all used by earlier theories (Nysveen, et al., 2005; Schierz, et al., 2010). The



aspects were also mentioned in the interview with payex and in other background theories (PayEx, 2011). Security has been widely recognized as one of the main obstacles to the adoption of electronic banking (Aladwani 2001), and privacy issues have proven important barriers to the use of online services (Westin, 1998). White and Nteli (2004) reported that the level of increase of Internet banking usage for banking purposes has not changed in the UK because of the continuing consumer fear about security. In a study about the adoption of Internet banking, Sathye (1999) reported that privacy and security were found to be significant obstacles to the adoption of online banking in Australia. Security is defined as a threat which “creates circumstances, condition, or event with the potential to cause economic hardship to data or network resources in the form of destruction, disclosure, modification of data, denial of service and/or fraud, waste and abuse” (Kalakota & Whinston 1997). Security threats usually occur at the network level (the server), the communication channel or the user’s personal computer (the client). In the context of Internet banking, security threats can either be through a network, or data transaction & transmission attacks or through unauthorized access to the account by means of false authentication (Yousafzai, Pallister & Foxall 2003).

E-money mobile transaction might increase the level of security and continuously reduce uncertainty or risk of using e-money mobile transaction. Moreover, the companies also need to be transparent in

dealing with their consumers to avoid e-money mobile being captured their security. Since the significant role of perceived security is of concern by the consumers, e-money mobile transaction should professionally and ethically keep the consumers' personal information. The companies also need to strengthen the consumers' trust and level of confidence by seriously committing and promising to consumers that their transaction and personal data are safe and secure. If the customers feel safe and comfy with the approach that the companies are protecting their personal information, it makes easier for customers to overcome their psychological barriers towards using or purchasing the product or services (Pavlou & Fygenson, 2006).

In Indonesia, the e-criminal transaction has been provided under Government Regulation No. 82 in 2012 on the implementation systems and electronic transactions. It contains 90 articles that include implementation of electronic systems, an organization of electronic dealings, electronic signatures, and organization of the electronic certification, certification agencies, and management of the domain name that is implemented by the organizer of the electronic system. It can be made to the public and non-public service. In addition, government regulation (Article 15 No 82, 2012) emphasizes that organizers of the electronic system have to ensure security, integrity, and availability as well as utilization of consumer's personal data with the

approval of the corresponding owner. The benefits of these regulations are reflected in the growth of e-money transaction from year to year.

The mobile transactions are highly demanded to consumers to get secure on their personal data. Personal data is “refers to data, whether true or not, about an individual who can be identified from that data; or from that data and other information to which the organization has or is likely to have access” (www.pdpc.gov.sg, 2014). In the telecommunication industry, there is an act to secure the personal data, called PDPA (Personal Data Protection Act). It is an act that regulates to protect personal data. However, the implementation of the act in Indonesia is in proposed revised draft bill (indotelko, 2015). PDPA is very important in Indonesia due to the rapidly growing telecommunications industry.

For e-money, mobile is one of crucial part for the consumers to feel secure in their transactions. As all of the transactions in e-money mobile is the basis on the mobile transaction, the consumers might be doubt such unwanted mobile services or personal information that will be hacked for their account information. Besides, the consumer can get any broadcast SMS from any users. It can bring the consumers’ criminality effect. Therefore, the personal data is a very sensitive issue that needs to take strength legality. There is an organization need to take responsibility regard to personal data secure for e-money mobile is the Financial Services Authority (OJK). It is very important to take collaboration between The Telecommunication and Informatics Ministry

and OJK, also any organizations that need to take responsibility due to complying the PDPA. Rudiantara, Telecommunication and Informatics Minister, said that E-KTP data can help the consumers to get save the personal data when register. The regulation through the pre-paid sim card registration can be implemented to evaluate and verify how pre-paid data with E-KTP (electronic ID) data. It can be acquired the collaboration with the Internal Affairs Ministers. It is because that E-KTP is the current data that is the most valid (indotelko, 2015). However, these are some countries have implemented PDPA in communications industries. It is presented in table 6.1 Countries implemented PDPA in communications industries as follows.

Table 6.1

*Countries implemented PDPA in communications industries*

No	Countries	Year of amended	Year of launched
1.	Australia	2000, 2012	1998
2.	Hong Kong (amended)	2012	1995
3.	India (new)	2011	2008
4.	Japan	-	2005
5.	Macao	-	2006
6.	Malaysia (new)	-	2014
7.	New Zealand	2010	1993
8.	Philippines (new)	-	2012
9.	Singapore (new)	-	2012
10.	South Korea (new)	-	2011
11.	Taiwan (amended)	2012	1995

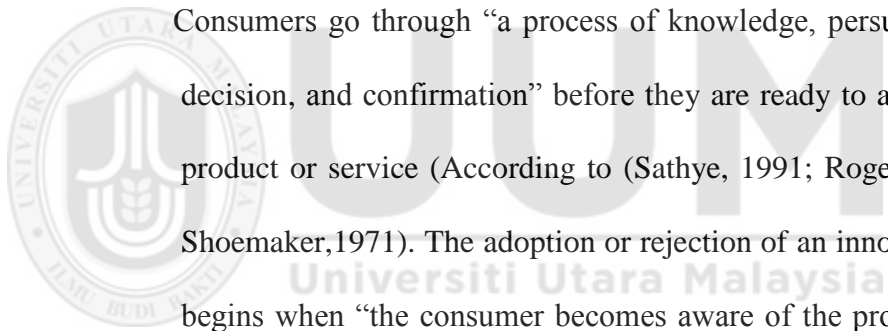
Source: Rich, 2014 from The Bureau Of National Affairs, Inc.

### **6.3.1.9 The Relationship between Awareness and Intention to Use e-Money Mobile**

The hypothesis for antecedents of behavioural intention which is awareness is discussed in answering the research question. The following discussion is discussed on the influence between awareness and behavioural intention. Rogers (1983) defined awareness of innovation as innovation exists and gains some understanding of how to function. While Sathye (1999) has defined awareness of innovation as: understanding whether the customer is aware or not aware of service itself and its benefits. He also shows that low level of IBS awareness is a critical factor in causing customers not to adopt online banking. The result of this study also supports hypothesis 4 that awareness has the positive and not significant influence to the intention to use e-money mobile. The result was opposite to some previous studies of information related literature (Safeena et al., 2011). However, in that result is found that individuals are still reluctant to adopt the system because of without a proper knowledge of the system; individuals are not interested in testing the system.

It was improved with findings by Al-Fahim (2012) that awareness was found to have a positive and not significant

influence on Internet banking adoption. Most of the respondents use online banking occasionally and many respondents have a little knowledge about the e-banking services because of they do not have much money in their bank' account. It seems gone in this study that awareness is not significant happened because of the consumers had not received enough information about e-money mobile, also information about benefit and using e-money mobile and information from issuers.



Consumers go through “a process of knowledge, persuasion, decision, and confirmation” before they are ready to adopt a product or service (According to (Sathye, 1991; Rogers and Shoemaker,1971). The adoption or rejection of an innovation begins when “the consumer becomes aware of the product”.

Consumers will seek out services which offer the best value for money. Hence, for the adoption of mobile banking, it is necessary that the banks offering this service make the consumers aware about the availability of such a product and explain how it adds value relative to other products of its own or that of the competitors.

An important characteristic for any adoption of innovative service or product is creating awareness among the consumers about the service/product (Sathye, 1991). A

number of information consumers have about online banking has been identified as a major factor impacting the adoption. According to Sathye (1991) while the use of online banking services is a fairly new experience for many people, low awareness of online banking is a major factor in causing people not to adopt online banking. In an empirical study of Australian consumers found that consumers were unaware of the possibilities, advantages/disadvantages involved with online banking.

The result is not significant happened because the consumers do not receive enough information, the benefits, how to use e-money mobile. It shows the issuer failed to perform a good communication process. It is very important since the communication help to convey the right message to the right customers at the right time (Mohammed et. al, 2004). The integrated marketing communication (IMC) has to be a synergy to create customers' awareness. The wrong medium effect the customers did not get a message properly. Looking for the trend to attractive customers today, the marketers and practitioners need to communicate effectively. According to Mohammed et al (2004), the process of planning a communications campaign with marketing strategy has six stages:

- i. Identify the target audience
- ii. Determine the communication objective
- iii. Develop the message
- iv. Execute the campaign
- v. Evaluate the effectiveness of the campaign

Furthermore, the practitioners need to consent to customer service which is a vital part of the customers' communication. It is highly profitable for the firm. The marketer can develop strategies with marketing public relation. Strauss et al. (2006) stated that "public relations consist of activities that influence public opinion and create goodwill for an organization". The activities mean that all of the sectors that have relation to creating the opinions and a goodwill such media, supplier, company shareholder and employees, the local community, business buyer, as well as consumers, and many others. Thus, the important marketing public relation is of the portion of public relation directed firm's customer and prospects that can create awareness and have intention through e-money mobile because they have a positive attitude of the consumers to use e-money mobile. Therefore, marketing public relations (MPR) can create a positive influence to target markets of e-money mobile.

In addition, the Blue Ocean Strategy can be applied for a marketer to attract more potential consumers. According to



Kim & Mauborgne (2005) to maximize the scale of Blue Ocean, the company has to pass opposite way. It means that the company is not only focused on existing consumers, but also they need to see the opportunity on non-consumers. These are three level of non-consumers are “Soon-to-be” noncustomers, “Refusing” noncustomers and “Unexplored” noncustomers. The figure is as below.

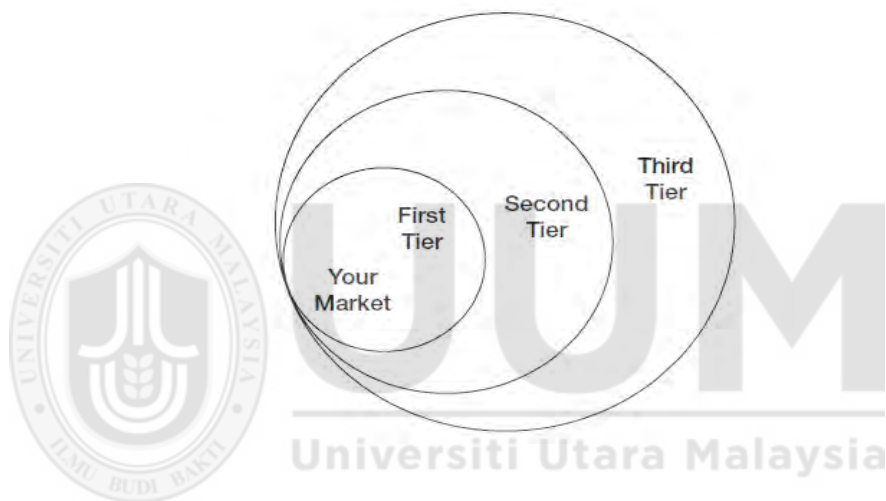


Figure 6.5

*The Three Tiers of Noncustomers*

Source: Kim & Mauborgne (2005)

i. First-Tier Noncustomers

The *soon-to-be* noncustomers are people who minimize to consume product offered by the market and ready to move eagerly to find a better one. It happens when the group of this non-consumers increase. However, it has potential demand by the *soon-to-be* non-consumers to be exempted.

ii. Second-Tier Noncustomers

The *refusing* noncustomers are people who doubt that the products are offered are not effective and unacceptable by them. Therefore, they refuse the products. So, the offering new product can bring potential demand.

iii. Third-Tier Noncustomers

The third tier of noncustomers is unexplored noncustomers that are existing customers in the industry. They are potential customers. It happened because of their limited perceptions to existing market which is actually an opportunity for the company to take the market.

As above tiers of non-consumers, the marketer can take a strategy to attract the potential consumers to use e-money mobile. It can fulfill consumer's segmentation strongly. It is possible to make the issuer grow exceeded existing demand in the market because introduce a new area for new consumers that never exist in previous. It means it can be rival for the frequency of user used cash or debit/credit card.

**6.3.1.10 The Relationship between Awareness and Relative Advantage towards Intention to Use e-Money Mobile**

The hypothesis for antecedents of behavioural intention which is awareness discussed in answering the research question. The following discussion is discussed on the influence between awareness and relative advantage. Kotler et.al (2004) stated that the concept of awareness

attempts to explore how the customers establish the knowledge of the products or services and to what extent they are lacking information about it. As hypothesized, awareness is found to have a significant positive impact on the relative advantage. It is supported that awareness level of consumers on the concept of internet banking has a positive effect on the perceived usefulness (relative advantage) of internet banking (Rakesh and Ramya, 2014). Same goes that awareness was directly and positively influenced by the level of perception of the medium's relative advantage to other media alternatives (Rambocas & Arjoon, 2012). It was as explained by Rogers (1999, 2003) that the adoption process has been defined as the process through which individual adopters pass from awareness to full acceptance of a new innovation. Besides, it was involved by Sathye's (1999) study highlighted that many consumers were simply unaware of internet banking and its unique benefits.

Another previous study found that non-users were unaware of many of the relative advantage of internet banking such as the ability to print receipts (unavailable in phone banking) and the ability to store Bpay (Australian business account) identifiers for a range of companies to which bills would regularly be paid (for example, utilities, credit card payments) because some non-users cited the lack of awareness of benefits as the reason why they had not adopted internet banking and lack of awareness of the relative advantages (Lichtenstein &

Williamson, 2006). Benefits were regarded as relative and were compared to a 'satisfying' (or 'status quo') decision with many non-users suggesting their banking needs were already being met (Franco & Klein, 1999). The degree of awareness (DOAW) of bank customers on e-banking has a positive effect on the perceived usefulness (relative advantages) of e-banking (Ahmad, 2013). Besides, the evidence was able to create awareness for perceived usefulness (relative advantages) among bank customers (Noteberg et al., 2003).

As claimed by Sharon (1999), we need to raise the awareness of banking customers as the industry are offering a wide range of customer products beside various alternatives that are made available by banking institutions in securing their competitiveness. Sathye (1999) said that while the use of internet banking services is a fairly new experience for many people, low awareness of internet banking is a major factor in causing people not to adopt internet banking. Sathye (1999) conducted an empirical study in Australia and found that customers were unaware of the possibilities, advantages/disadvantages involved with internet banking.

On the other hand, Polatoglu and Ekin (2001) conducted a study on Turkish customers and confirmed that the more knowledge and skills a customer possessed about electronic banking, the easier it was for the customer to utilize electronic banking. There was concerned on

addressing the issue of privacy and security risk, and personal data security that needed more attention. This is relatively important as when perceived risk is low, it will normally result on the trustworthiness of the service offered (Leppaniemi, et. al., 2006; Tanakinjal, et. al, 2010).

#### **6.3.1.11 The Relationship between Complexity and Relative Advantage towards Intention to Use e-Money Mobile**

The hypothesis for antecedents of behavioural intention which is complexity is discussed in answering the research question. The following discussion is discussed on the influence between complexity and relative advantage. Perceived complexity (PC) refers to the degree to which a computer system is perceived to be difficult to learn or use (Moore & Benbasat, 1991). Complexity (and its corollary, ease of use) has been found to be an important factor in the technology adoption decision (Davis et al., 1989). As the Internet is very user-friendly with its “point and click” interface, it is likely that potential customers may feel that Internet banking services are less complex to use, and hence are more likely to use them.

Relative advantage is described as perceived usefulness. It is positively influenced by perceived ease of use because holding other conditions equal, the easier a technology is to use, the more useful it can be (Venkatesh, 2000). According to the meta-analysis by King and He (2006), the major effect of EU on BI is actually through PU indirectly. Emotional factors can affect PEOU (Saadé and Kira, 2006; Venkatesh,

2000) and is expected to have a significant impact on PU. Therefore, Ease of use' – or usability – was frequently cited and found closely linked to individual perceptions of complexity (Lichtenstein & Williamson, 2006).

In this study, complexity refers to the user's difficulties to use e-money mobile. As hypothesized, complexity is found to have a significant negative relationship to the relative advantage. It is consistent result was found by Hasan (2007) that system complexity had negative and significant direct effects on perceived usefulness as it represents the relative advantage. It was improved when it was examining computer usage among 471 managers and professionals, Igarria et al. (1996) found that PSC had a negative impact on perceived usefulness (relative advantage). The consistent result found by numerous studies (e.g. Thompson, Higgins, & Howell, 1994; Bradford & Florin, 2003; Van Slyke, Lou, & Day, 2002; Chen, Casper, & Cortina, 2001).

Reducing perceptions of system complexity could be very useful enhancing users' beliefs about a technology and improving its ultimate acceptance and use. Given that the perceptions of system complexity are closely related to the task for which the technology will be used (Chen et al., 2001; Campbell, 1986; Dishaw & Strong, 1999). This result is as Van Slyke et al (2004) suggested that software characteristics such as functionality and complexity affect users' relative advantage software.

Additionally, a negative relationship between complexity and perceived usefulness (relative advantage) was also revealed in a study conducted in the e-learning system (Hardgrave, et al., 2003; Lin, 2006). It goes same with the result found the complexity had a significant negative effect on perceived usefulness (Hard grave, et al., 2003).

The complexity issue is crucial to attempt a great market gain. More complex the as technology adoption, it is fewer advantages and more people do not want to use. As the result, there is a negative impact on the relative advantage. It means that e-money mobile is user-friendly because it is less complex. It gives some advantages to the consumers when they use it. Even though there is positively insignificant previous found, but most of them are tested in different scope such in mobile Banking (Jeyaraj et al. 2006; Hsu and Lu 2004). It has been perceived complexly because the transactions need to connect through an online provider. Besides, there as a large number of mobile user bring difficult working transactions.

To make the e-money mobile is instant successes in the market, it is important to increase the relative advantage through ads or information related. It helps them to develop the experiences through the products to be easier accepted. However, the strategy of WOM (Word-of-mouth) communication can help the marketers to reduce the cost of advertising. These are some strategies can be applied in a business transaction that is

suitable to be used in e-money mobile to avoid a perception of complexity products based on word-of-mouth strategies. They are buzz agents, viral marketing, e-referrals, recommendations and responding affectively to negative rumors.

Table 6. 2

*Strategy Marketing Applications of Word-of-Mouth*

No	Strategy WoM	Apply
1	Buzz agents	To promote products by bringing them to a family gathering, read books promoted by publisher on mass transit with the titles clearly visible, suggest storing owners who do not carry a given product that they should do so, and talk other consumers into trying certain products during shopping trips.
2	Viral marketing (e-referrals & recommendations)	To encourage individuals to pass on an e-mail message's exposure and influence e-referrals and recommendations are another effective forms of viral marketing.
3	Tackling negative rumors	To persist critics that involve bad online of publicity with a strategy called determined detractors.

Source: Schiffman & Kanuk (2010)

As growing social media (e.g. facebook, twitter, Instagram, foursquare, etc), it might be an opportunity to use e-WOM to attract the consumers; intention to use e-money mobile. According to Schiffman & Kanuk (2010), e-WOM is “word-of-mouth taking place online”. It takes some places communications such social media, blogs, and consumer message boards. Besides, it can help the consumer to find a good opinion whether it is complex or user-friendly.



#### 6.4 Conclusion

As like findings of the study, this study concludes that Decomposed Theory of Planned Behaviour (DTPB) is introduced by Taylor and Todd (1995a) in consumers context with examines 13 variables are; attitude and its decomposed (complexity and relative advantage), awareness, subjective norm and its decomposed (social cultural influence and family), perceived behavioral control and its decomposed (self-confidence and resources facilitating conditions), perceived risk and perceived security can be applied to explain the potential consumers' intention to use e-money mobile in Indonesia. It gives an empirical prove to support conceptual model. In specific, this study is to understand the consumers' intention to use through e-money mobile. The DTPB is more precise and moderate increasingly the behavioral intention than the theory of planned behavior (Taylor & Todd, 1995a). The decomposition approach adopted by the theory provides a larger set of antecedents that can better explain the intention to use e-money mobile, consequently enhancing the theoretical and practical contribution of this study.

The consumers' intention to use e-money mobile remains one of the main issues related to the cashless society and payment transaction in the country. Therefore, the enhancement of the overall consumers' intention to use that has been the attention of issuer and decision makers especially in the developing countries, including Indonesia. In the literature, it has been widely acknowledged the important role intention to use, attitude and

its decomposed (complexity and relative advantages), awareness, subjective norm and its decomposed (social cultural influence and family), perceived behavioral control and its decomposed (self-confidence and resources facilitating conditions), perceived risk and perceived security as the most effective strategies that can assist organizations to enhance the consumers' intention to use e-money mobile and to achieve competitive advantages over issuer. These strategies have been recognized in Indonesia in general and in Padang in particular with following some programs who conducted by Central Bank of Indonesia and issuer. They can helpful in developing countries for enhancing the strategies for consumers to be more except the e-money especially e-money mobile which easier to bring and connected in Indonesia generally and Padang particularly.

In summary, the results of this empirical study highlight new insights about how attitude and it's decomposed (complexity and relative advantage), awareness, subjective norm and its decomposed (social cultural influence and family), perceived behavioral control and its decomposed (self-confidence and resources facilitating conditions), perceived risk and perceived security can improve the consumers' intention to use e-money mobile in Indonesia. However, these are some negatives relationship in some variables; complexity has a negative impact on attitude, complexity has a negative impact on the relative advantage, perceived risk has a negative impact on intention to use e-money mobile.

All of the variables that have negative relationship mean cannot be used for more to influence the potential consumers. More complex and high risk bring effect to lose potential consumers' intention to use e-money mobile.

The variable was not supporting is the impact of awareness. It confirmed that consumers had not received enough information about e-money mobile, its benefit, and information from issuers. Therefore, these conditions make many consumers have a little knowledge about e-money mobile. It concludes that low awareness of consumers in Padang is the major factor in causing them less intention to use e-money mobile. The result can helpful in developing countries for enhancing the strategies for consumers to be more except the e-money especially e-money mobile which easier to bring and connected in Indonesia generally and Padang particularly.

## **6.5 Implications and Contributions of the Study**

In understanding the nature of the customers' intention to use, this study is expected to contribute to the e-money mobile knowledge in several ways. The information expects to helpful in explaining the theory underlying e-money and consumer behavior.

Firstly, this study gives contributions to the specific theory DTPB (Decomposed Theory of Planned Behavior). The explanation on intention to use e-money mobile is still limited in Indonesia which most

explanations involve general theory such as E-commerce, e-Banking, and other social networking. It is significant for adding new information to the literature review as a comprehensive model to investigate a set of antecedents that have an influence on intention to use e-money mobile. Besides, the perceived security improved to the theory as a critical factor in electronic transactions in term of authentication, usability, and safety.

Secondly, the newly developed model has not been applied in Indonesia in particular. Moreover, there is little prior research that uses a DTPB (Decomposed Theory of Planned Behavior) model to discuss the intention to use (Shih & Fang, 2004). Thus, the model generated from this research may be useful for academics to understand these antecedents in the future. Additionally, this study helps academicians who are interested in the intention to use topic, since there are only a few similar studies that tackle particularly on issuer (AlSukkar & Hasan, 2005; AbuShanab & Pearson, 2007).

Thirdly, it delivers new operating definitions will enlarge and improve understanding to the existing variables. This study comes out with new operational definitions on some variables such social-cultural influence and self-confidence which are different with previous existing studies. These definitions might help for exploring the next research, especially in e-money mobile.

Fourthly, the methodology for the data collection and sampling come out ask new contribution which has not been used in many previous studies. Technique multistage cluster sampling and systematic random sampling is new in the area of e-money mobile especially with collect data used the mall-intercept method. For a good sampling frame that is not available or costly, the frame listing clusters are easily obtained. First, the researcher has to selects clusters. Then, the researcher continues to select the individual subjects from each cluster by systematic random sampling. The researcher can include the entire cluster selected. The advantages use the techniques are quicker and economical to observe clusters of units in a population than randomly selected units scattered over throughout the state. It permits each accumulation of large samples. Besides, enables to obtain information from one or more areas. It can improve and enlarge the existing methodology that is used in previous studies generally.

Fifthly, the findings of this study expect to contribute more information to understand the antecedents that have the most influence on the characteristics customers to adopt the services. The new term of antecedents for this study are relative advantages, complexity, awareness, social cultural influence, self-confidence. These are introduced in previous studies namely perceived usefulness is similarly to relative advantages, collorary perceived ease of use is complexity, awareness is new relationship in this study that no more discussion in previous studies closes to e-money mobile, social influence improved to be social cultural

influence and self-efficacy is similarly to self-confidence. Moreover, the issuers could work on developing and improving their relationship with their potential users. The findings could also help the issuers to provide the customers on e-money mobile and assist them in making the right decision to make more inclined to adopt the service. So, the researcher expects that the issuer will educate any potential users on the usage of the new technology and online services.

Finally, this study expects to add new knowledge to the academics, practitioners and organizations such banks, assurance companies, airline companies, and the health sector to understand the factors influencing the potential users' behavior regarding the adoption of technologies services.

## **6.6 Scope and Limitations of the Study**

E-money mobile is one of new product for a payment transaction proposed among the people who look for massive, micro, and quick means for transactions. This research investigates the potential users as the respondents for consumers' intention to use e-money in Padang, Indonesia. The distribution of the questionnaire is assisted by representatives to get the response within a limited time.

The scope of study is limited to potential users who came to the shopping complex in Padang. This study are not addressed to other places e.q. campus or school, government offices, Bank and etc.

Additionally, the limitation corresponds general results of the study. The potential user in a shopping complex as the unit of analysis in this study would be difficult to generalize the results to another consumer in different places or public organizations. Besides, the methodology followed a cross-sectional research design proposed the hypothesized relationships at a single point in time. However, the psychological human aspects would changes time to time.

Similar to the research design was conducted in quantitative research methods. The respondents' answers may be influenced by the biased perception of the situation (Atieno, 2009). It happened because of the scale that is used Likert scale can make their perception. Finally, another important limitation of this study is limited previous studies overcome the same factors in Indonesia. Besides, the examination the relationship of this research constructs in the context of the Indonesia has been no previous studies and lack of availability. As well as future research should incorporate more variables and samples in the study while the consumers are quite homogeneous in nature. In addition, this study can highlight on other relevant variables to explain intention to use e-money. Besides, the study can be considered as a generalized approach to explore on e-money.

Thus, the researchers can develop this issue in another setting. Firstly, the next study is suggested in a different scope. Besides, the methodology should design in another time of study e.q. longitudinal study to lead for more accuracy. Moreover, the different research design e.g. mixed

(quantitative and qualitative) are recommended for future study. Hence, the next researchers should continue the study to finding to be explained more.

## **6.7 Summary**

This chapter overcomes with the discussion and conclusion of the study. It is followed by contribution, limitation, scope, and limitations.





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## Appendix 1

Table 5.3

*Descriptive Statistics for Early and Late Respondents*

<b>Variables</b>	<b>Collection Period</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Std. Error Mean</b>
Intention to Use	Early	539	5.0180	1.60871	.06929
	Late	39	4.6557	1.62212	.25975
Relative Advantage	Early	539	5.1141	1.66224	.07160
	Late	39	4.5855	1.53701	.24612
Complexity	Early	539	4.9740	1.66203	.07159
	Late	39	4.6368	1.59489	.25539
Perceived Risk	Early	539	4.0303	1.57803	.06797
	Late	39	4.2906	1.38745	.22217
Perceived Security	Early	539	4.7699	1.34230	.05782
	Late	39	4.7106	1.44557	.23148
Social Cultural Influence	Early	539	4.4416	1.29470	.05577
	Late	39	4.4017	1.53765	.24622
Awareness of Service	Early	539	4.7175	1.59878	.06886
	Late	39	4.4551	1.69060	.27071
Attitude	Early	539	5.1942	1.73128	.07457
	Late	39	4.6667	1.70654	.27327
Subjective Norm	Early	539	4.3076	1.96898	.08481
	Late	39	4.2872	1.37251	.21978
Perceived Behavioral Control	Early	539	5.0544	1.83103	.07887
	Late	39	4.4530	1.57741	.25259

Table 5.3 (Cont')

<b>Variables</b>	<b>Collection Period</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Std. Error Mean</b>
Self-confidence	Early	539	4.7087	1.75158	.07545
	Late	39	4.3162	1.78025	.28507
Resources Facilitating	Early	539	4.9771	1.87201	.08063
	Late	39	4.4017	1.38112	.22116
Family	Early	539	4.4780	1.91628	.08254
	Late	39	4.6581	1.67627	.26842



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Table 5.4

*T-test results for Non-Response Bias*

Variables		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Intention to Use	Equal variances assumed	.100	.751	1.358	576	.175
	Equal variances not assumed			1.348	43.585	.185
Relative Advantages	Equal variances assumed	.533	.466	1.927	576	.054
	Equal variances not assumed			2.062	44.681	.045
Complexity	Equal variances assumed	.011	.916	1.227	576	.220
	Equal variances not assumed			1.272	44.187	.210
Perceived Risk	Equal variances assumed	2.638	.105	-1.002	576	.317
	Equal variances not assumed			-1.120	45.418	.268
Perceived Security	Equal variances assumed	.010	.919	.265	576	.791
	Equal variances not assumed			.249	42.878	.805
Social Cultural Influence	Equal variances assumed	2.388	.123	.183	576	.855
	Equal variances not assumed			.158	41.991	.875
Awareness of Service	Equal variances assumed	.926	.336	.986	576	.325
	Equal variances not assumed			.939	43.064	.353

Table 5.4 (Cont')

Variables		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Attitude	Equal variances assumed	.270	.604	1.839	576	.066
	Equal variances not assumed			1.862	43.853	.069
Subjective Norm	Equal variances assumed	12.794	.000	.064	576	.949
	Equal variances not assumed			.087	50.081	.931
Perceived Behavioral Control	Equal variances assumed	2.122	.146	1.998	576	.046
	Equal variances not assumed			2.273	45.740	.028
Self-confidence	Equal variances assumed	.101	.751	1.350	576	.178
	Equal variances not assumed			1.331	43.495	.190
Resources Facilitating	Equal variances assumed	6.150	.013	1.882	576	.060
	Equal variances not assumed			2.444	48.714	.018
Family	Equal variances assumed	1.199	.274	-.571	576	.568
	Equal variances not assumed			-.641	45.498	.525

Table 5.5

*Descriptive Statistics of the Constructs*

<b>Variables</b>	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
Intention to Use	579	1.00	7.00	4.9953	1.60992
Relative Advantage	579	1.00	7.00	5.0720	1.66401
Complexity	579	1.00	7.00	4.9456	1.66259
Perceived Risk	579	1.00	7.00	4.0520	1.56799
Perceived Security	579	1.00	7.00	4.7678	1.34786
Social Cultural Influence	579	1.00	7.00	4.4384	1.30993
Awareness of Service	579	1.00	7.00	4.7012	1.60392
Attitude	579	1.00	7.00	5.1549	1.73405
Subjective Norm	579	1.00	7.00	4.3022	1.93433
Perceived Behavioral Control	579	1.00	7.00	5.0081	1.82383
Self-confidence	579	1.00	7.00	4.6770	1.75769
Resources Facilitating	579	1.00	7.00	4.9355	1.84732
Family	579	1.00	7.00	4.4917	1.89895

Table 5.6

*Results of Skweness and Kurtosis for Normality Test*

Variables	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Intention to Use	579	-.610	.102	-.467	.203
Relative Advantage	579	-.688	.102	-.423	.203
Complexity	579	-.531	.102	-.550	.203
Perceived Risk	579	.062	.102	-.779	.203
Perceived Security	579	-.325	.102	-.351	.203
Social Cultural Influence	579	-.063	.102	-.280	.203
Awareness of Service	579	-.472	.102	-.420	.203
Attitude	579	-.637	.102	-.497	.203
Subjective Norm	579	-.207	.102	-1.090	.203
Perceived Behavioral Control	579	-.557	.102	-.763	.203
Self-confidence	579	-.389	.102	-.730	.203
Resources Facilitating	579	-.576	.102	-.649	.203
Family	579	-.365	.102	-.868	.203

Table 5.7

*Multicollinearity Test*

<b>Coefficients<sup>a</sup></b>		
<b>Variables</b>	<b>Collinearity Statistics</b>	
	<b>Tolerance</b>	<b>VIF</b>
Relative Advantages	.435	2.299
Complexity	.430	2.325
Perceived Risk	.693	1.442
Perceived Security	.509	1.966
Social-Cultural Influence	.361	2.769
Awareness	.555	1.801
Attitude	.474	2.110
Subjective Norm	.454	2.202
Perceived Behavioral Control	.368	2.717
Self-Confidence	.392	2.550
Facilitating Conditions	.413	2.420
Family	.483	2.069



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Table 5.8

*Result of The Content Validity*

Variables	Items	AT	AW	C	F	ITU	PBC	PR	PS	RA	RF	SC	SCI	SN
Attitude	A1	<b>0.739</b>	0.471	-0.437	0.423	0.483	0.439	-0.011	0.413	0.482	0.411	0.441	0.489	0.414
	A2	<b>0.870</b>	0.274	-0.456	0.278	0.599	0.461	-0.146	0.473	0.513	0.369	0.378	0.499	0.312
	A3	<b>0.863</b>	0.359	-0.455	0.357	0.579	0.500	-0.090	0.421	0.466	0.425	0.436	0.521	0.469
Awareness	AW1	0.427	<b>0.891</b>	-0.369	0.395	0.361	0.482	0.038	0.242	0.339	0.506	0.463	0.388	0.426
	AW2	0.371	<b>0.897</b>	-0.302	0.341	0.360	0.494	-0.044	0.254	0.322	0.484	0.437	0.390	0.414
	AW3	0.347	<b>0.817</b>	-0.388	0.361	0.342	0.503	-0.019	0.354	0.347	0.485	0.429	0.435	0.283
Complexity	C1	-0.471	-0.406	<b>0.788</b>	-0.414	-0.591	-0.438	-0.034	-0.443	-0.648	-0.433	-0.447	-0.496	-0.313
	C2	-0.419	-0.205	<b>0.788</b>	-0.386	-0.516	-0.361	0.005	-0.426	-0.542	-0.350	-0.403	-0.454	-0.324
	C3	-0.449	-0.356	<b>0.840</b>	-0.374	-0.571	-0.481	-0.036	-0.417	-0.557	-0.462	-0.427	-0.489	-0.374
	C4	-0.321	-0.329	<b>0.745</b>	-0.297	-0.415	-0.345	0.021	-0.349	-0.446	-0.359	-0.313	-0.408	-0.325
	C5	-0.466	-0.298	<b>0.786</b>	-0.401	-0.512	-0.360	-0.044	-0.473	-0.500	-0.372	-0.430	-0.488	-0.319
	C6	-0.377	-0.285	<b>0.703</b>	-0.342	-0.446	-0.359	-0.030	-0.424	-0.437	-0.351	-0.350	-0.403	-0.335
Family	F1	0.339	0.414	-0.442	<b>0.827</b>	0.293	0.427	0.091	0.283	0.349	0.563	0.497	0.438	0.512
	F2	0.305	0.264	-0.361	<b>0.780</b>	0.199	0.284	0.180	0.249	0.267	0.381	0.384	0.321	0.453
	F3	0.367	0.325	-0.344	<b>0.791</b>	0.333	0.416	0.089	0.190	0.360	0.364	0.462	0.474	0.493
Intention to use	ITU1	0.597	0.326	-0.454	0.240	<b>0.798</b>	0.483	-0.148	0.428	0.574	0.360	0.322	0.516	0.309
	ITU2	0.403	0.374	-0.531	0.311	<b>0.687</b>	0.397	-0.098	0.332	0.529	0.374	0.363	0.432	0.334
	ITU3	0.493	0.288	-0.459	0.218	<b>0.817</b>	0.432	-0.154	0.424	0.548	0.335	0.285	0.476	0.250
	ITU4	0.373	0.375	-0.549	0.299	<b>0.628</b>	0.339	-0.093	0.327	0.409	0.376	0.320	0.375	0.355
	ITU5	0.557	0.306	-0.557	0.226	<b>0.811</b>	0.405	-0.052	0.551	0.638	0.349	0.283	0.452	0.213
	ITU6	0.520	0.235	-0.464	0.183	<b>0.768</b>	0.341	-0.080	0.513	0.607	0.283	0.283	0.381	0.181
	ITU7	0.542	0.267	-0.490	0.374	<b>0.711</b>	0.339	-0.074	0.361	0.595	0.334	0.361	0.382	0.395

Variables	Items	AT	AW	C	F	ITU	PBC	PR	PS	RA	RF	SC	SCI	SN
Prvcd. behavioral control	<b>PBC1</b>	0.597	0.459	-0.457	0.373	0.539	<b>0.863</b>	-0.180	0.464	0.563	0.537	0.561	0.594	0.404
	<b>PBC2</b>	0.447	0.483	-0.422	0.428	0.444	<b>0.834</b>	-0.152	0.406	0.447	0.483	0.535	0.542	0.378
	<b>PBC3</b>	0.377	0.496	-0.403	0.401	0.336	<b>0.833</b>	-0.022	0.321	0.386	0.642	0.596	0.420	0.354
Perceived risk	<b>PR1</b>	-0.056	-0.070	-0.070	0.137	-0.061	-0.119	<b>0.648</b>	0.015	-0.042	0.016	0.036	-0.040	-0.035
	<b>PR3</b>	-0.114	-0.012	-0.049	0.112	-0.145	-0.139	<b>0.853</b>	-0.125	-0.128	0.000	0.025	-0.095	0.060
	<b>PR4</b>	0.003	-0.028	-0.036	0.119	-0.008	-0.057	<b>0.674</b>	0.100	-0.015	-0.006	0.037	0.046	-0.027
	<b>PR5</b>	-0.064	0.044	-0.025	0.134	-0.076	-0.107	<b>0.787</b>	0.030	-0.076	-0.002	-0.002	-0.047	0.041
	<b>PR6</b>	-0.094	-0.012	-0.077	0.076	-0.080	-0.159	<b>0.794</b>	0.001	-0.110	-0.062	0.012	-0.060	-0.024
	<b>PR9</b>	-0.059	0.004	0.007	0.120	-0.114	-0.039	<b>0.749</b>	0.095	-0.160	-0.002	0.059	-0.032	0.100
Perceived security	<b>PS2</b>	0.252	0.218	-0.337	0.218	0.330	0.181	0.153	<b>0.641</b>	0.326	0.206	0.167	0.359	0.128
	<b>PS3</b>	0.415	0.345	-0.490	0.315	0.482	0.476	-0.151	<b>0.784</b>	0.495	0.424	0.363	0.500	0.277
	<b>PS4</b>	0.441	0.158	-0.343	0.109	0.435	0.289	0.022	<b>0.750</b>	0.340	0.206	0.176	0.353	0.004
	<b>PS7</b>	0.419	0.223	-0.418	0.238	0.400	0.397	0.006	<b>0.751</b>	0.477	0.256	0.295	0.546	0.112
Relative advantage	<b>RA1</b>	0.553	0.290	-0.543	0.284	0.702	0.409	-0.145	0.501	<b>0.824</b>	0.313	0.323	0.482	0.241
	<b>RA2</b>	0.425	0.331	-0.460	0.318	0.510	0.380	-0.066	0.425	<b>0.744</b>	0.259	0.348	0.486	0.245
	<b>RA3</b>	0.513	0.253	-0.521	0.345	0.639	0.477	-0.171	0.455	<b>0.801</b>	0.344	0.366	0.491	0.277
	<b>RA4</b>	0.456	0.309	-0.508	0.285	0.532	0.445	-0.056	0.420	<b>0.783</b>	0.326	0.387	0.450	0.255
	<b>RA5</b>	0.476	0.312	-0.587	0.376	0.586	0.467	-0.147	0.480	<b>0.815</b>	0.356	0.383	0.472	0.263
	<b>RA6</b>	0.305	0.324	-0.562	0.303	0.510	0.407	-0.067	0.333	<b>0.694</b>	0.332	0.346	0.402	0.221
Resources facilitating condition	<b>RF1</b>	0.408	0.440	-0.414	0.415	0.407	0.552	-0.032	0.288	0.314	<b>0.849</b>	0.584	0.432	0.460
	<b>RF2</b>	0.443	0.498	-0.439	0.481	0.373	0.517	0.040	0.378	0.325	<b>0.824</b>	0.525	0.371	0.458
	<b>RF3</b>	0.386	0.501	-0.427	0.498	0.378	0.596	-0.032	0.310	0.407	<b>0.867</b>	0.556	0.375	0.488

Variables	Items	AT	AW	C	F	ITU	PBC	PR	PS	RA	RF	SC	SCI	SN
Self-confidence	<b>SC1</b>	0.315	0.489	-0.372	0.527	0.218	0.493	0.088	0.190	0.280	0.525	<b>0.778</b>	0.415	0.498
	<b>SC2</b>	0.289	0.345	-0.383	0.424	0.308	0.490	0.116	0.217	0.329	0.511	<b>0.788</b>	0.404	0.496
	<b>SC3</b>	0.534	0.339	-0.420	0.344	0.422	0.544	-0.106	0.380	0.435	0.468	<b>0.727</b>	0.516	0.318
Social-cultural influence	<b>SCI1</b>	0.298	0.211	-0.403	0.405	0.330	0.339	0.074	0.317	0.321	0.219	0.418	<b>0.657</b>	0.360
	<b>SCI12</b>	0.471	0.410	-0.413	0.349	0.386	0.410	-0.031	0.429	0.409	0.311	0.381	<b>0.630</b>	0.294
	<b>SCI2</b>	0.424	0.350	-0.407	0.388	0.402	0.448	-0.067	0.417	0.454	0.307	0.445	<b>0.817</b>	0.392
	<b>SCI3</b>	0.531	0.439	-0.479	0.417	0.515	0.561	-0.093	0.516	0.553	0.449	0.507	<b>0.832</b>	0.391
	<b>SCI4</b>	0.461	0.378	-0.480	0.363	0.448	0.522	-0.194	0.546	0.490	0.411	0.463	<b>0.736</b>	0.370
	<b>SCI6</b>	0.444	0.223	-0.367	0.300	0.395	0.360	0.005	0.361	0.327	0.289	0.299	<b>0.611</b>	0.349
Subjective norm	<b>SN1</b>	0.393	0.300	-0.328	0.484	0.310	0.266	0.124	0.120	0.234	0.387	0.421	0.396	<b>0.788</b>
	<b>SN2</b>	0.452	0.419	-0.417	0.479	0.344	0.406	-0.056	0.183	0.298	0.508	0.476	0.442	<b>0.836</b>
	<b>SN3</b>	0.412	0.374	-0.320	0.526	0.335	0.388	0.019	0.170	0.272	0.468	0.493	0.426	<b>0.858</b>
	<b>SN4</b>	0.403	0.381	-0.359	0.534	0.321	0.430	0.010	0.202	0.265	0.486	0.473	0.426	<b>0.863</b>
	<b>SN5</b>	0.318	0.304	-0.337	0.495	0.262	0.362	0.123	0.074	0.261	0.438	0.489	0.391	<b>0.790</b>



Table 5.9

*The Convergent Validity Analysis*

<b>Variables</b>	<b>Items</b>	<b>Loading</b>	<b>C.alpha</b>	<b>comp.alpha</b>	<b>Ave</b>
Attitude	A1	0.739	0.764	0.865	0.682
	A2	0.870			
	A3	0.863			
Awareness	AW1	0.891	0.837	0.902	0.755
	AW2	0.897			
	AW3	0.817			
Complexity	C1	0.788	0.868	0.901	0.602
	C2	0.789			
	C3	0.840			
	C4	0.745			
	C5	0.786			
	C6	0.703			
Family	F1	0.827	0.718	0.842	0.639
	F2	0.780			
	F3	0.791			

Table 5.9 (Cont')

<b>Variables</b>	<b>Items</b>	<b>Loading</b>	<b>C.alpha</b>	<b>comp.alpha</b>	<b>Ave</b>
Intention to use	ITU1	0.798	0.868	0.898	0.560
	ITU2	0.687			
	ITU3	0.817			
	ITU4	0.628			
Intention to use	ITU5	0.811			
	ITU6	0.768			
	ITU7	0.711			
Perceived behavioral control	PBC1	0.863	0.798	0.881	0.712
	PBC2	0.834			
	PBC3	0.833			
Perceived risk	PR1	0.648	0.857	0.887	0.569
	PR3	0.853			
	PR4	0.674			
	PR5	0.787			
	PR6	0.794			
	PR9	0.749			
Perceived security	PS2	0.641	0.714	0.823	0.538
	PS3	0.784			
	PS4	0.750			
	PS7	0.751			
Relative advantage	RA1	0.824	0.869	0.902	0.606
	RA2	0.744			
	RA3	0.801			
	RA4	0.783			
	RA5	0.815			
	RA6	0.694			

Table 5.9 (Cont')

<b>Variables</b>	<b>Items</b>	<b>Loading</b>	<b>C.alpha</b>	<b>comp.alpha</b>	<b>Ave</b>
Resources facilitating	RF1	0.849	0.803	0.884	0.717
	RF2	0.824			
	RF3	0.867			
Self-confidence	SC1	0.778	0.645	0.808	0.585
	SC2	0.788			
	SC3	0.727			
Social-cultural influence	SCI1	0.657	0.808	0.864	0.517
	SCI12	0.630			
	SCI2	0.817			
	SCI3	0.832			
	SCI4	0.736			
	SCI6	0.611			
Subjective norm	SN1	0.788	0.884	0.916	0.685
	SN2	0.836			
	SN3	0.858			
	SN4	0.863			
	SN5	0.790			

$$CR = (\sum \text{factor loading})^2 / \{(\sum \text{factor loading})^2 + \sum (\text{variance of error})\}$$

$$AVE = \sum (\text{factor loading})^2 / \{\sum (\text{factor loading})^2 + \sum (\text{variance of error})\}$$

Table 5.10

*The Discriminant Validity Matrix*

	AT	AW	C	F	ITU	PBC	PR	PS	RA	RF	SC	SCI	SN
AT	<b>0.826</b>												
AW	0.440	<b>0.869</b>											
C	-0.544	-0.406	<b>0.776</b>										
F	0.422	0.422	0.480	<b>0.800</b>									
ITU	0.673	0.408	0.663	0.347	<b>0.749</b>								
PBC	0.565	0.567	-0.507	0.473	0.524	<b>0.844</b>							
PR	-0.103	-0.009	-0.028	0.147	-0.133	-0.141	<b>0.754</b>						
PS	0.528	0.326	0.546	0.301	0.567	0.472	-0.009	<b>0.734</b>					
RA	0.590	0.387	0.681	0.409	0.749	0.554	-0.143	0.563	<b>0.778</b>				
RF	0.485	0.566	0.503	0.549	0.456	0.657	-0.012	0.382	0.414	<b>0.847</b>			
SC	0.504	0.510	0.515	0.562	0.419	0.669	0.036	0.349	0.460	0.656	<b>0.765</b>		
SCI	0.609	0.466	0.592	0.517	0.577	0.616	-0.074	0.601	0.596	0.463	0.587	<b>0.719</b>	
SN	0.479	0.431	0.426	0.609	0.381	0.449	0.050	0.183	0.322	0.554	0.568	0.503	<b>0.828</b>

Table 5.11

*Goodness of Fit*

<b>Constructs</b>	<b>R Square</b>	<b>AVE</b>
AT	0.385	0.682
AW		0.755
C		0.602
F		0.639
ITU	0.540	0.560
PBC	0.531	0.712
PR		0.569
PS		0.538
RA	0.479	0.606
RF		0.717
SC		0.585
SCI		0.517
SN	0.419	0.685
Average	0.492	0.628
GoF		0.556

Table 5.13

*The Results of Structural Model*

<b>Variables</b>	<b>Path</b>	<b>Standard Error (STERR)</b>	<b>T-Value</b>	<b>P-Value</b>	<b>Decision</b>
<b>AT -&gt; ITU</b>	0.408674***	0.050188	8.143	0.00	Supported
<b>AW -&gt; ITU</b>	0.056609**	0.036333	1.558	0.06	Rejected
<b>AW -&gt; RA</b>	0.131962***	0.034557	3.819	0.00	Supported
<b>C -&gt; AT</b>	-0.264894***	0.06614	4.096	0.00	Supported
<b>C -&gt; RA</b>	-0.681569***	0.039965	21.742	0.00	Supported
<b>F -&gt; SN</b>	0.476118***	0.044304	10.747	0.00	Supported
<b>PBC -&gt; ITU</b>	0.083795**	0.047346	1.770	0.04	Supported
<b>PR -&gt; ITU</b>	-0.079622***	0.030337	2.625	0.00	Supported
<b>PS -&gt; ITU</b>	0.279091***	0.046828	5.960	0.00	Supported
<b>RA -&gt; AT</b>	0.408899***	0.065856	6.209	0.00	Supported
<b>RF -&gt; PBC</b>	0.383271***	0.053035	7.227	0.00	Supported
<b>SC -&gt; PBC</b>	0.417375***	0.048325	8.637	0.00	Supported
<b>SCI -&gt; SN</b>	0.256976***	0.04626	5.555	0.00	Supported
<b>SN -&gt; ITU</b>	0.075789**	0.035106	2.159	0.02	Supported

\*:p>0.1; \*\*:p>0.05; \*\*\*:p>0.01

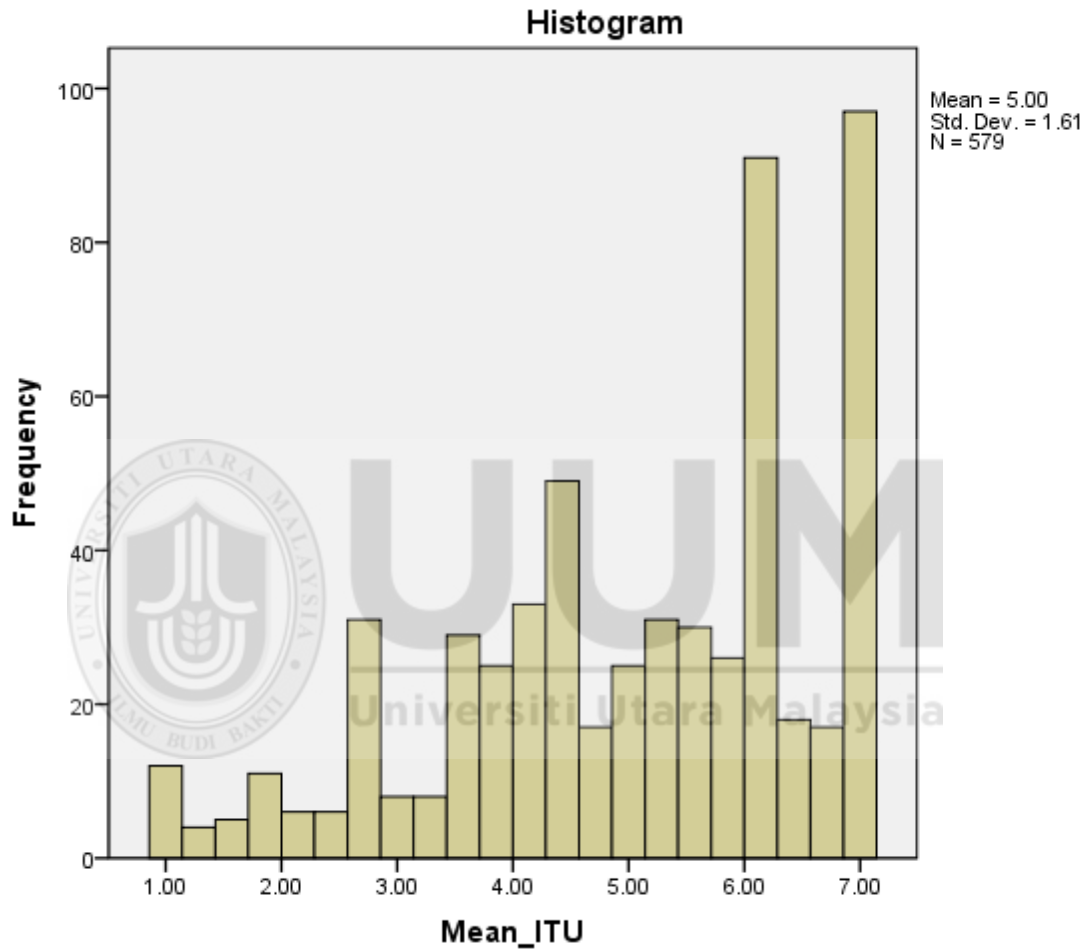
Table 5.14

*Effect Of Size*

<b>Variables</b>	<b>Construct</b>	<b>R2incl</b>	<b>R2excl</b>	<b>R2incl- R2excl</b>	<b>1- R2incl</b>	<b>Effect Size (%)</b>	<b>Effect</b>
	AT	0.540	0.455	0.085	0.460	18.48	medium
	AW	0.540	0.538	0.002	0.460	0.43	small
ITU	SN	0.540	0.536	0.004	0.460	0.87	small
	PBC	0.540	0.537	0.003	0.460	0.65	small
	PS	0.540	0.491	0.049	0.460	10.65	medium
	PR	0.540	0.534	0.006	0.460	1.30	small
RA	C	0.479	0.149	0.330	0.521	63.34	large
	AW	0.48	0.464	0.016	0.520	3.08	medium
SN	F	0.419	0.253	0.166	0.581	28.57	medium
	SCI	0.419	0.371	0.048	0.581	8.26	medium
PBC	RF	0.531	0.446	0.085	0.469	18.12	medium
	SC	0.531	0.433	0.098	0.469	20.90	large
AT	C	0.385	0.351	0.034	0.615	5.53	medium
	RA	0.385	0.297	0.088	0.615	14.31	medium

## Test of Linearity

Mean\_ITU



Mean\_ITU Stem-and-Leaf Plot

Frequency	Stem &	Leaf
16.00	1 .	00000011
16.00	1 .	5577788
12.00	2 .	01122&
34.00	2 .	555577777777778
26.00	3 .	00222444444&
41.00	3 .	5555555777778888888



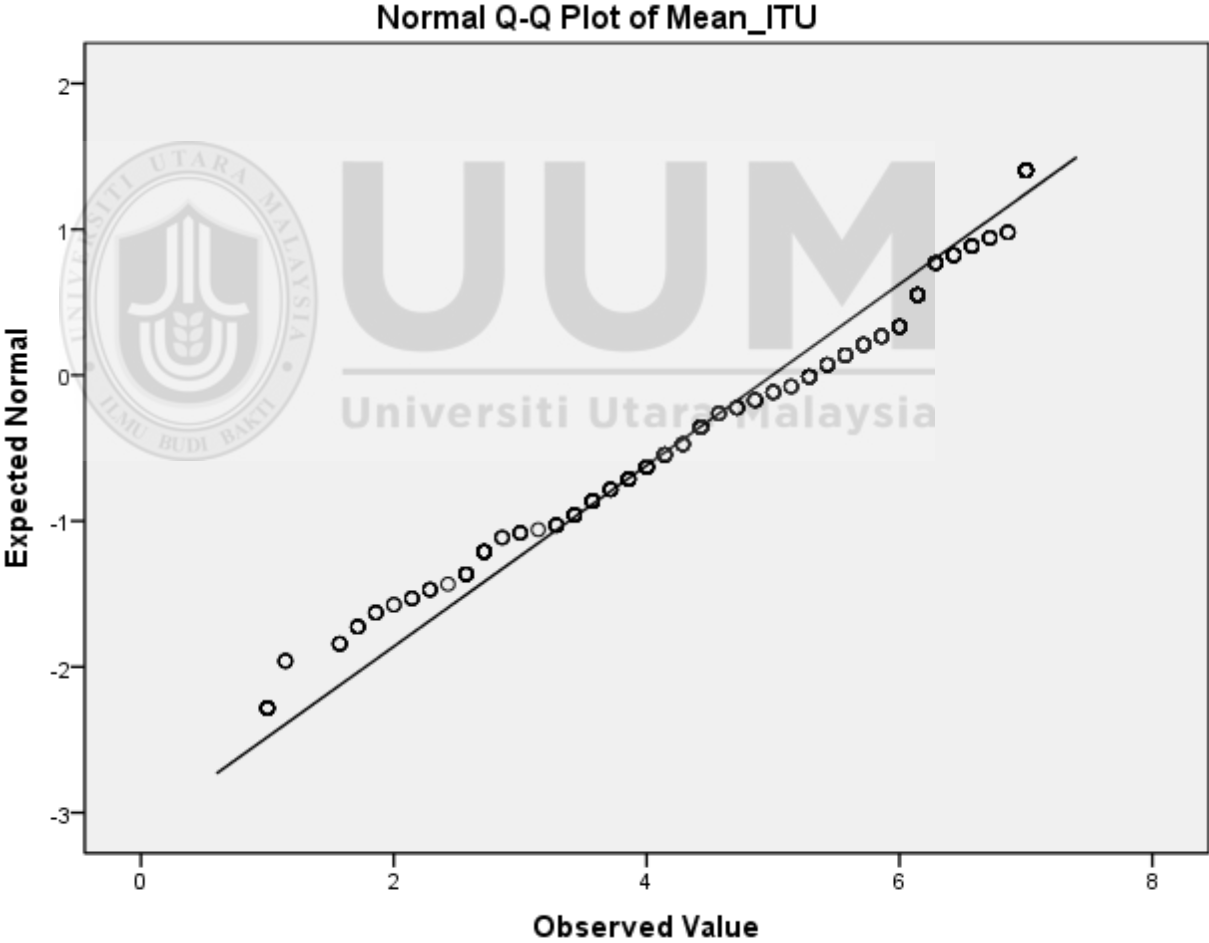
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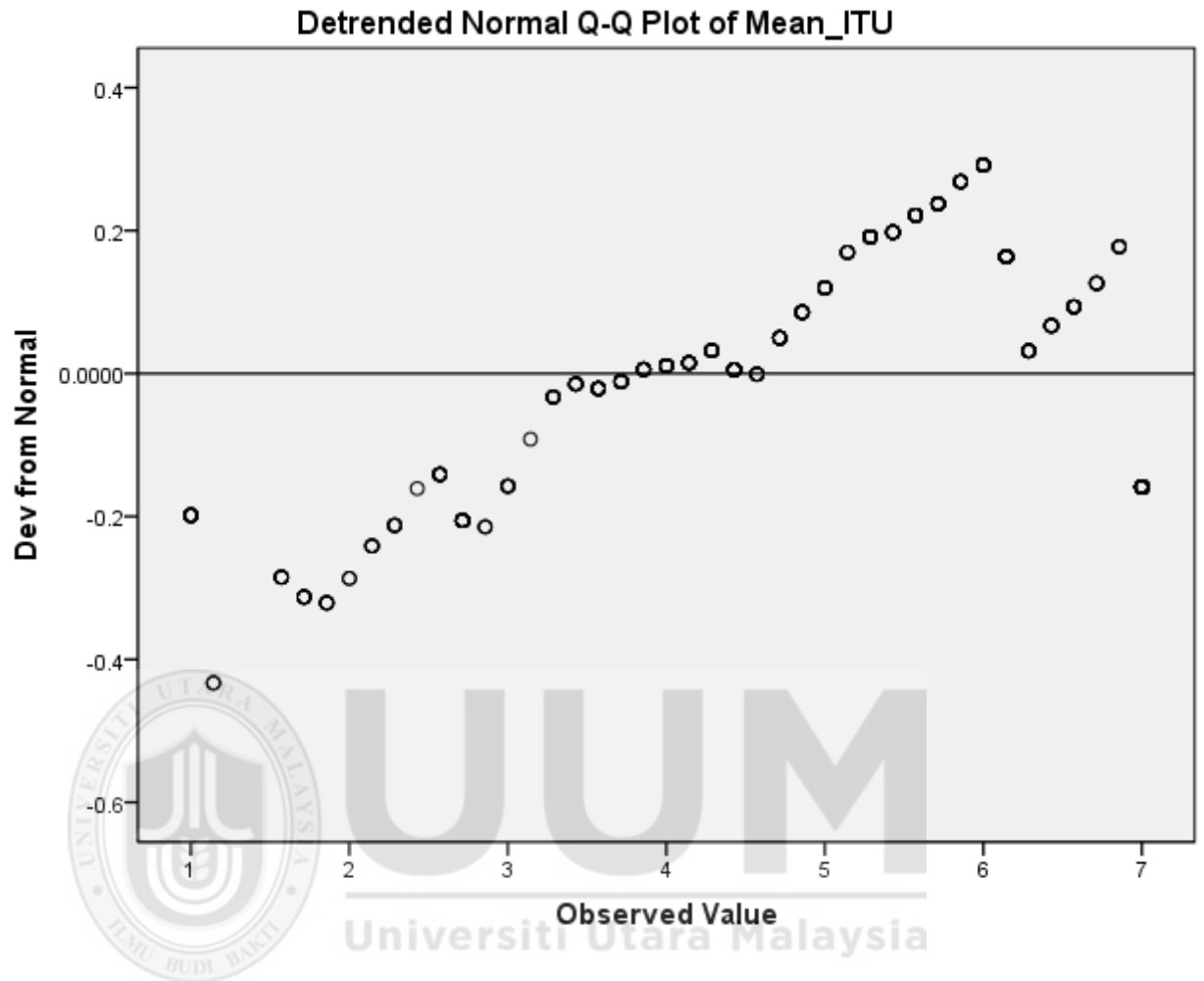
82.00      4 .  00000000111111112222224444444444444444444444444444
29.00      4 .  557777778888888
56.00      5 .  0000001122222222222222444444
44.00      5 .  555555557777777888888
109.00     6 .
0000000001111111111111111111111111111111111111111111122224444
22.00      6 .  555577788
92.00      7 .
0000000000000000000000000000000000000000000000000000000000000000

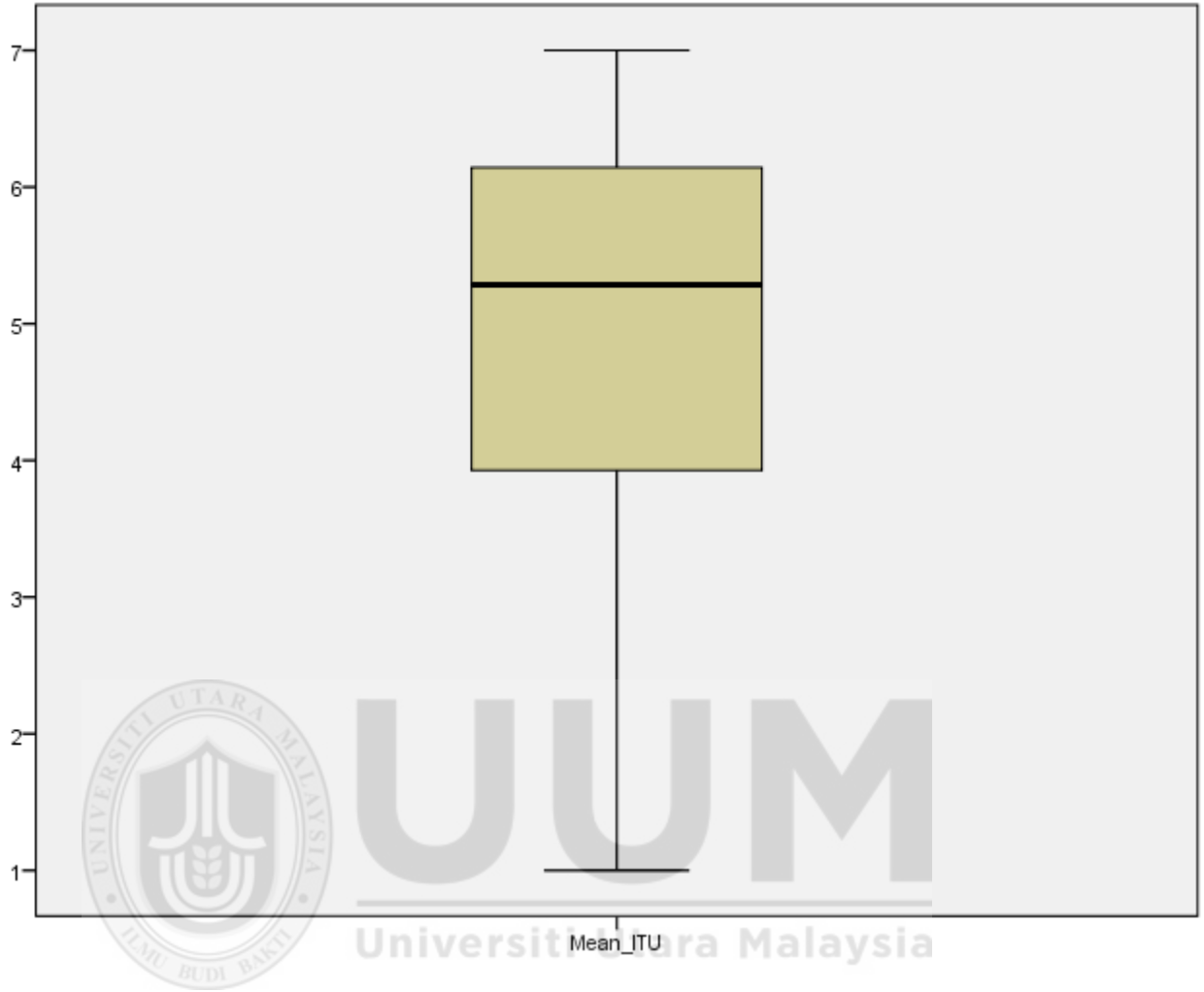
Stem width: 1.00
Each leaf:  2 case(s)

```

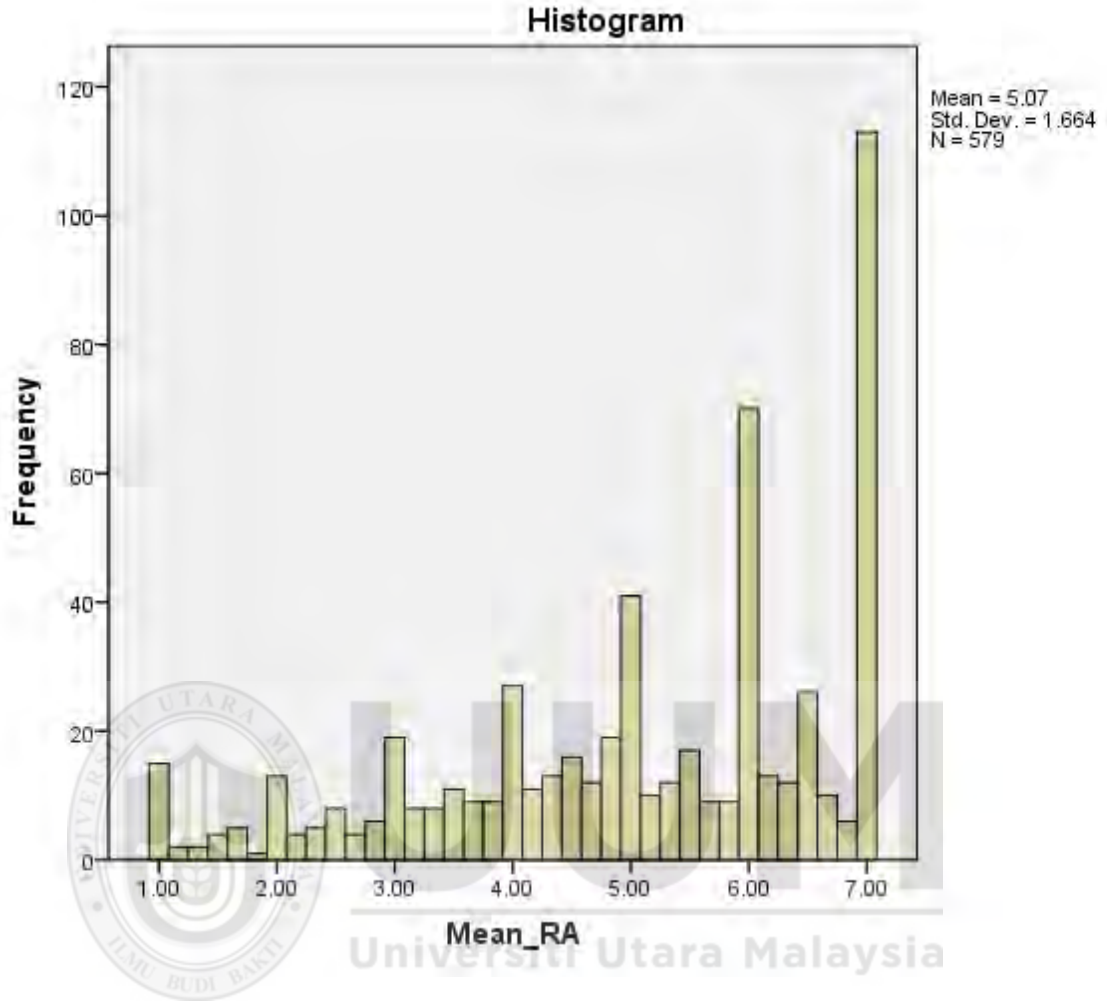
& denotes fractional leaves.







Mean\_RA

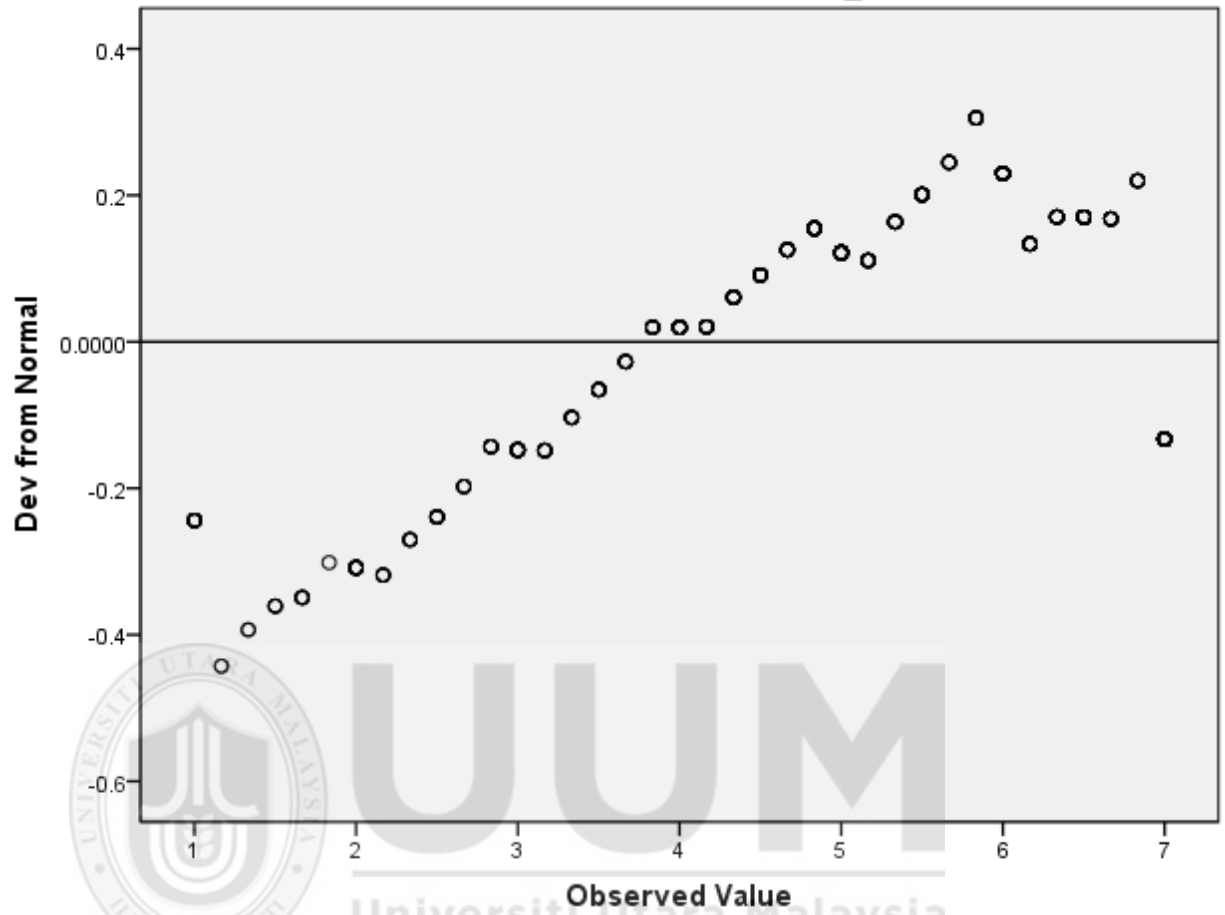


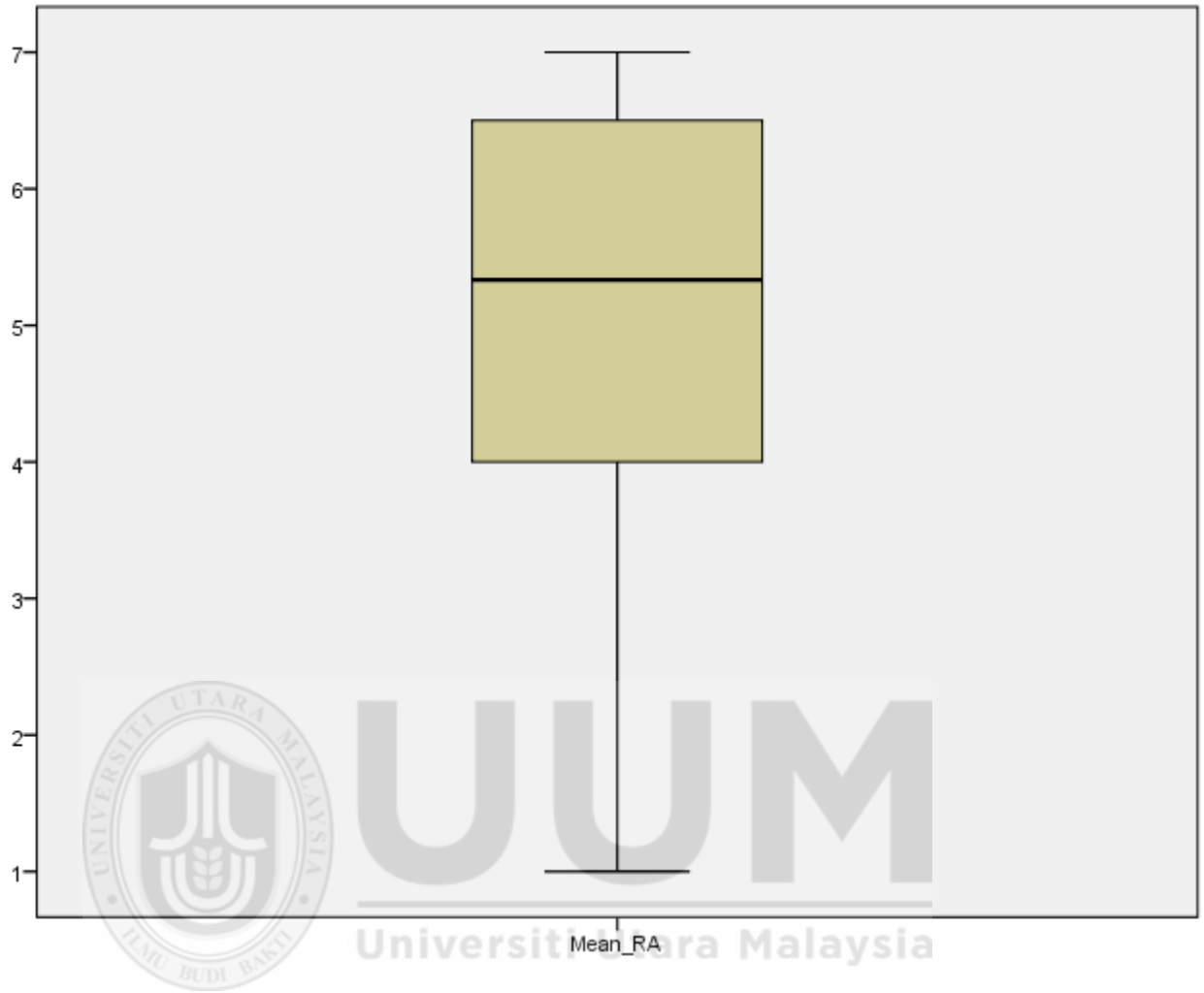
Mean\_RA Stem-and-Leaf Plot

Frequency	Stem &	Leaf
19.00	1 .	000000013
10.00	1 .	5566&
22.00	2 .	0000001133
18.00	2 .	555566888
35.00	3 .	00000000011113333
29.00	3 .	5555566668888
51.00	4 .	000000000000011111333333
47.00	4 .	5555555566666688888888
63.00	5 .	000000000000000000011111333333
35.00	5 .	5555555566668888
95.00	6 .	
0000000000000000000000000000011111333333		
42.00	6 .	5555555555556666888



Detrended Normal Q-Q Plot of Mean\_RA



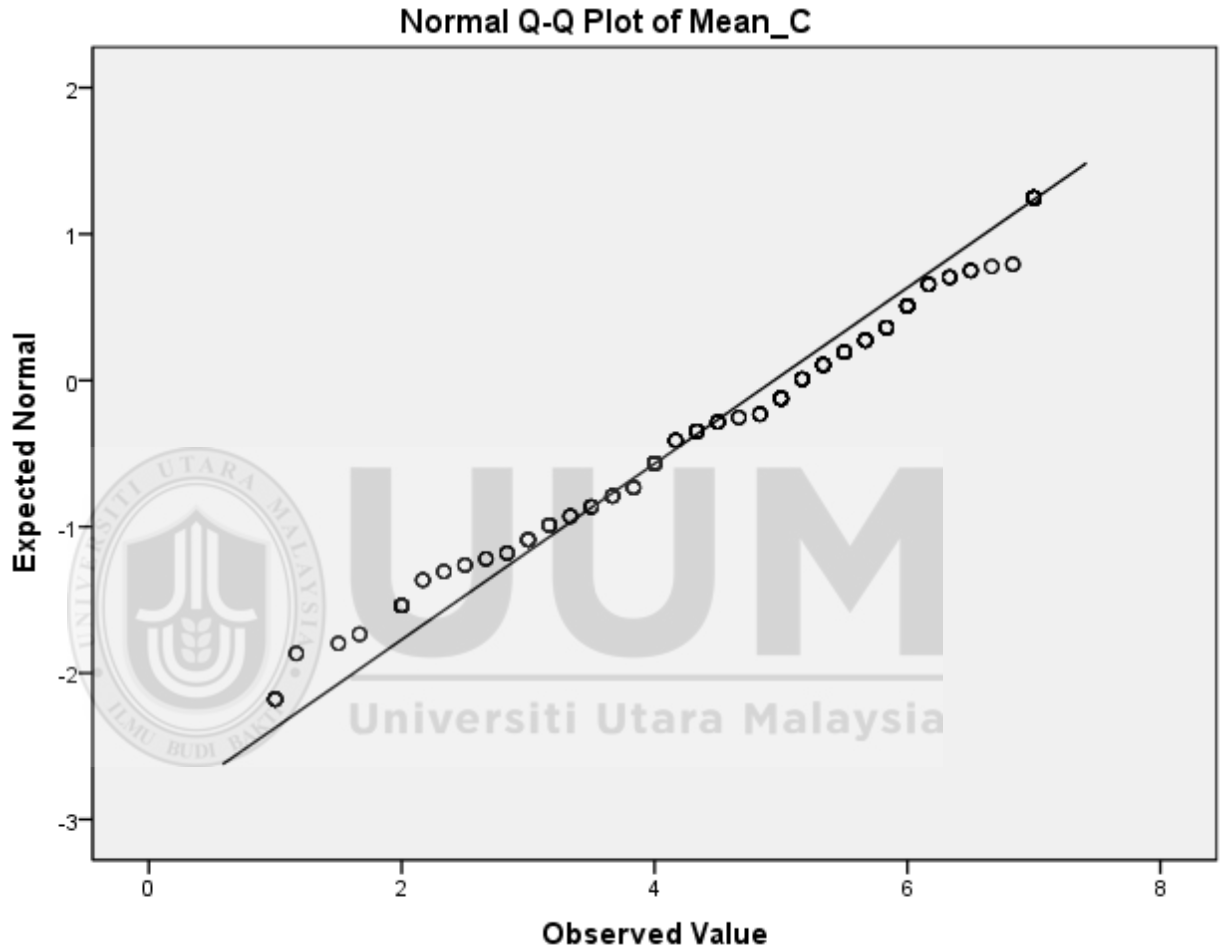


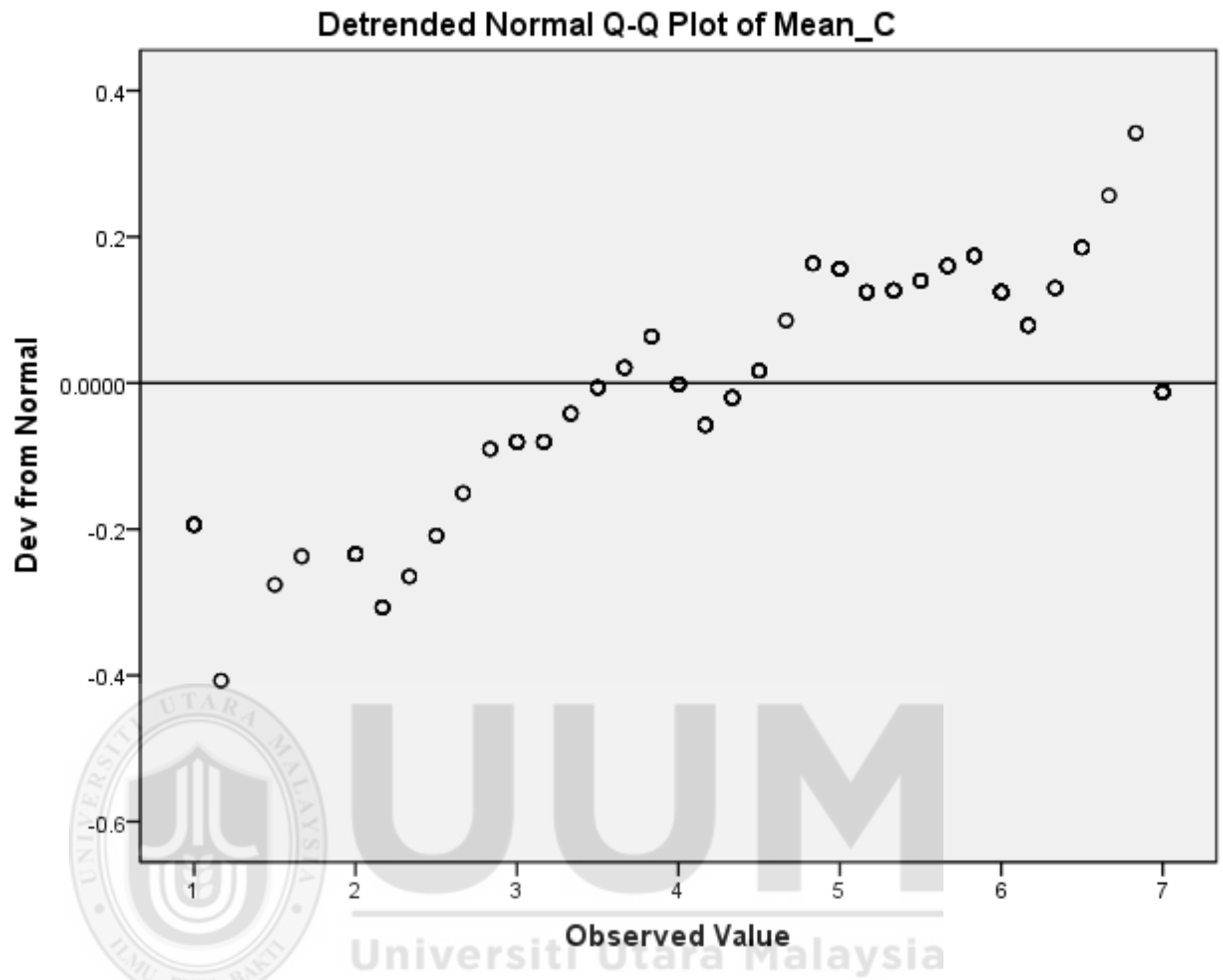
Mean\_C

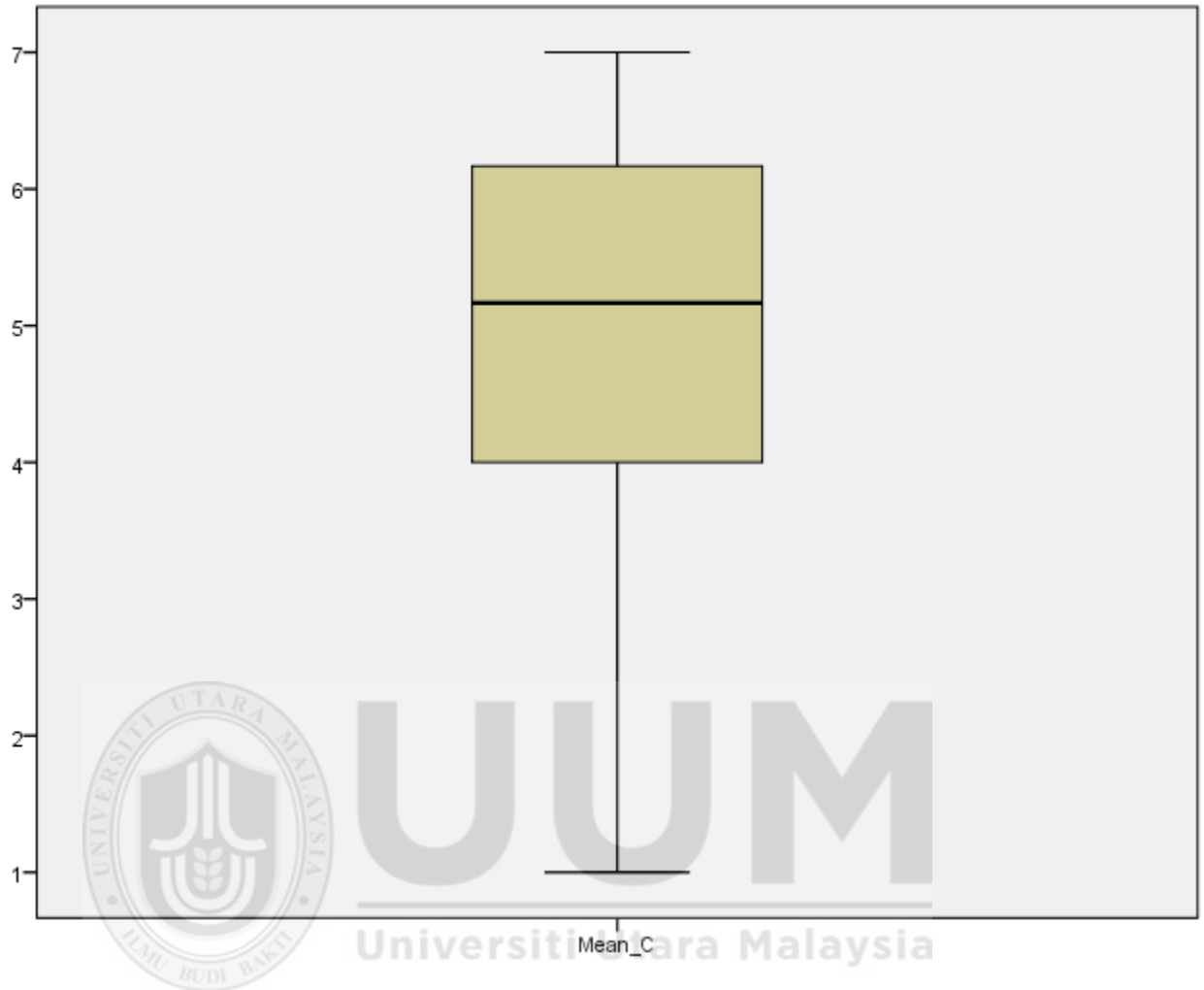




Stem width: 1.00  
Each leaf: 2 case(s)







Mean\_PR

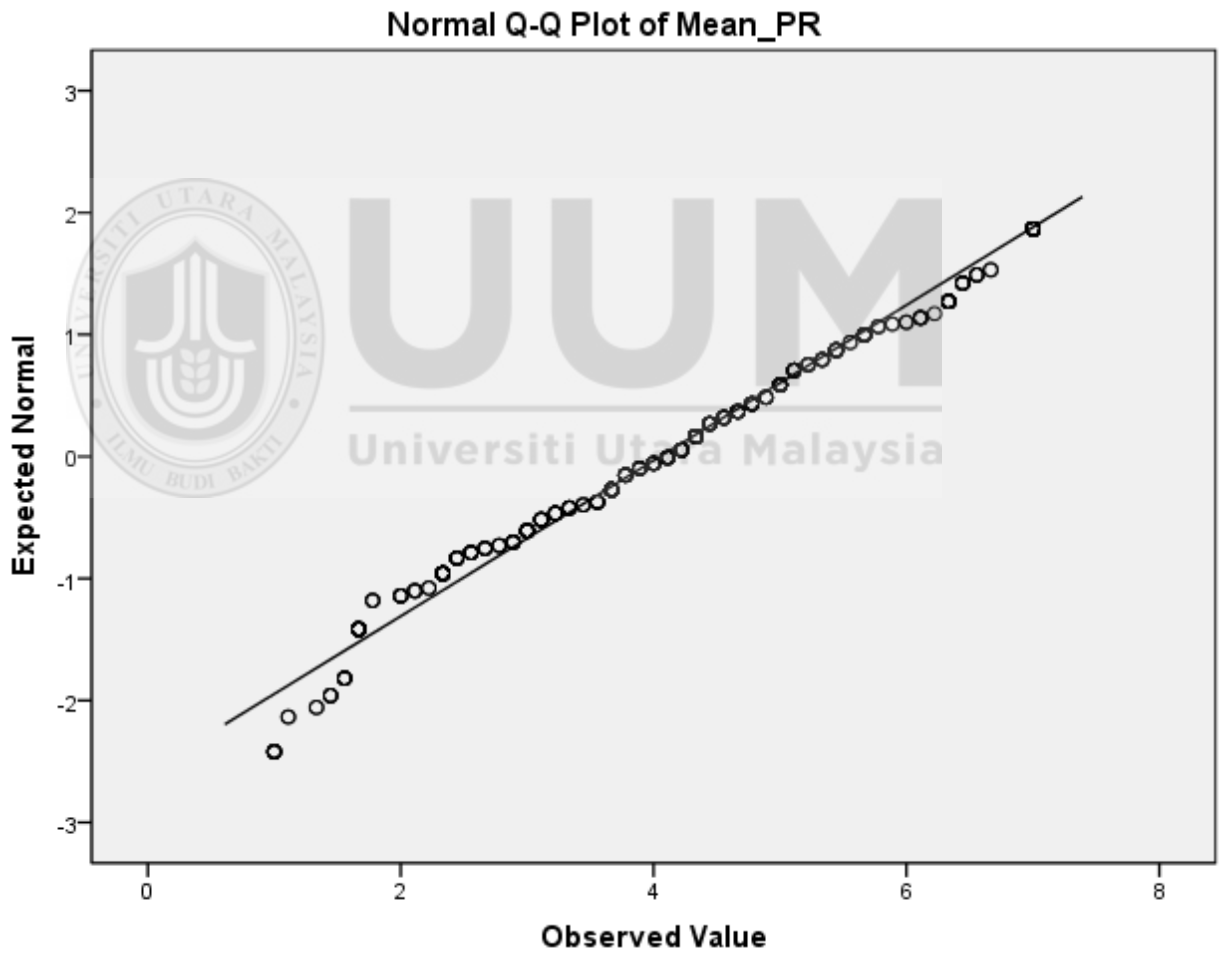


```

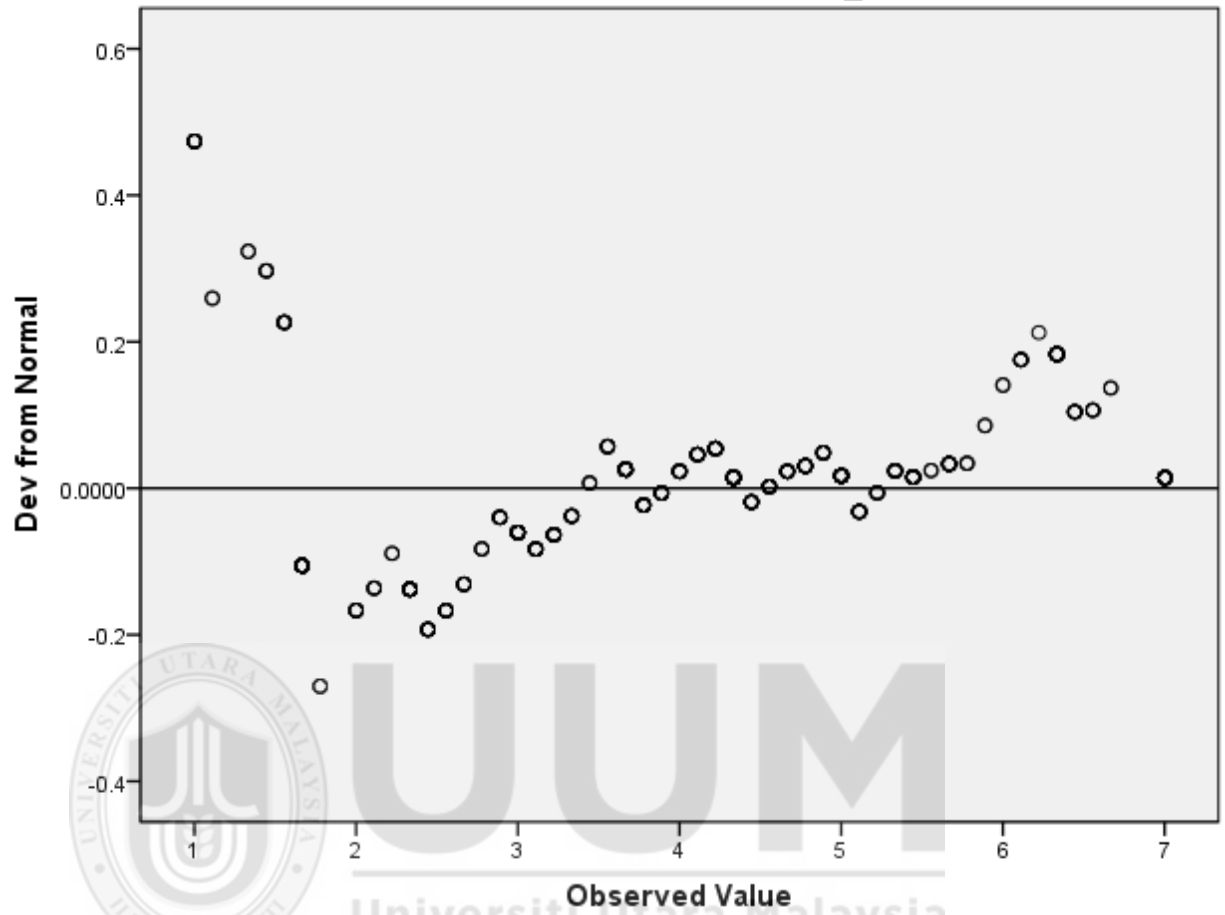
44.00      4 .
555555555566666666666666667777777777777788888888
76.00      5 .
000000000000000000000000000000011111111111222223333333334444444
44444444444
23.00      5 . 556666666666666666677788
38.00      6 . 0011111112333333333333333333333334444444
6.00       6 . 555566
35.00      7 . 00000000000000000000000000000000000

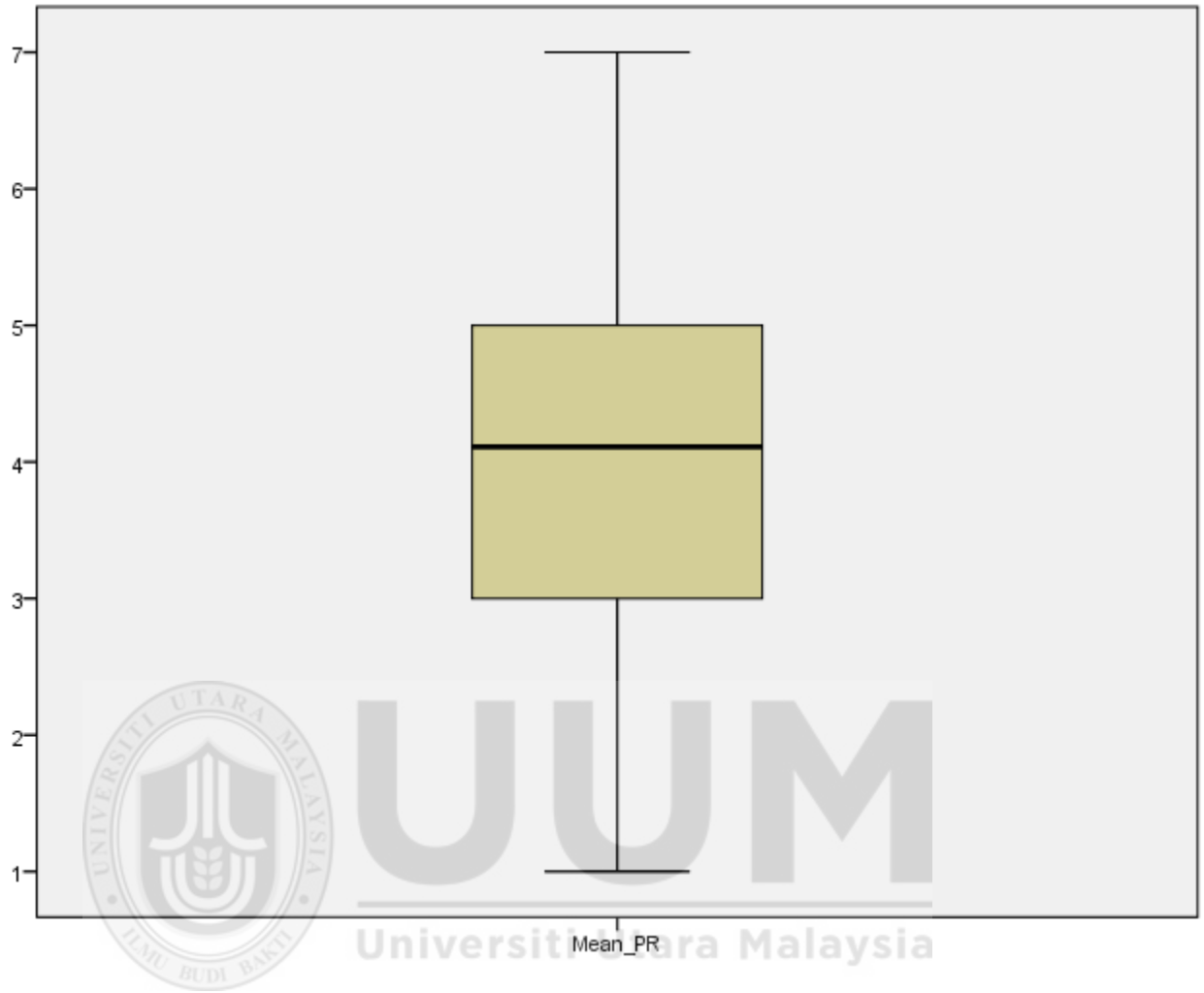
```

Stem width: 1.00  
Each leaf: 1 case(s)



Detrended Normal Q-Q Plot of Mean\_PR





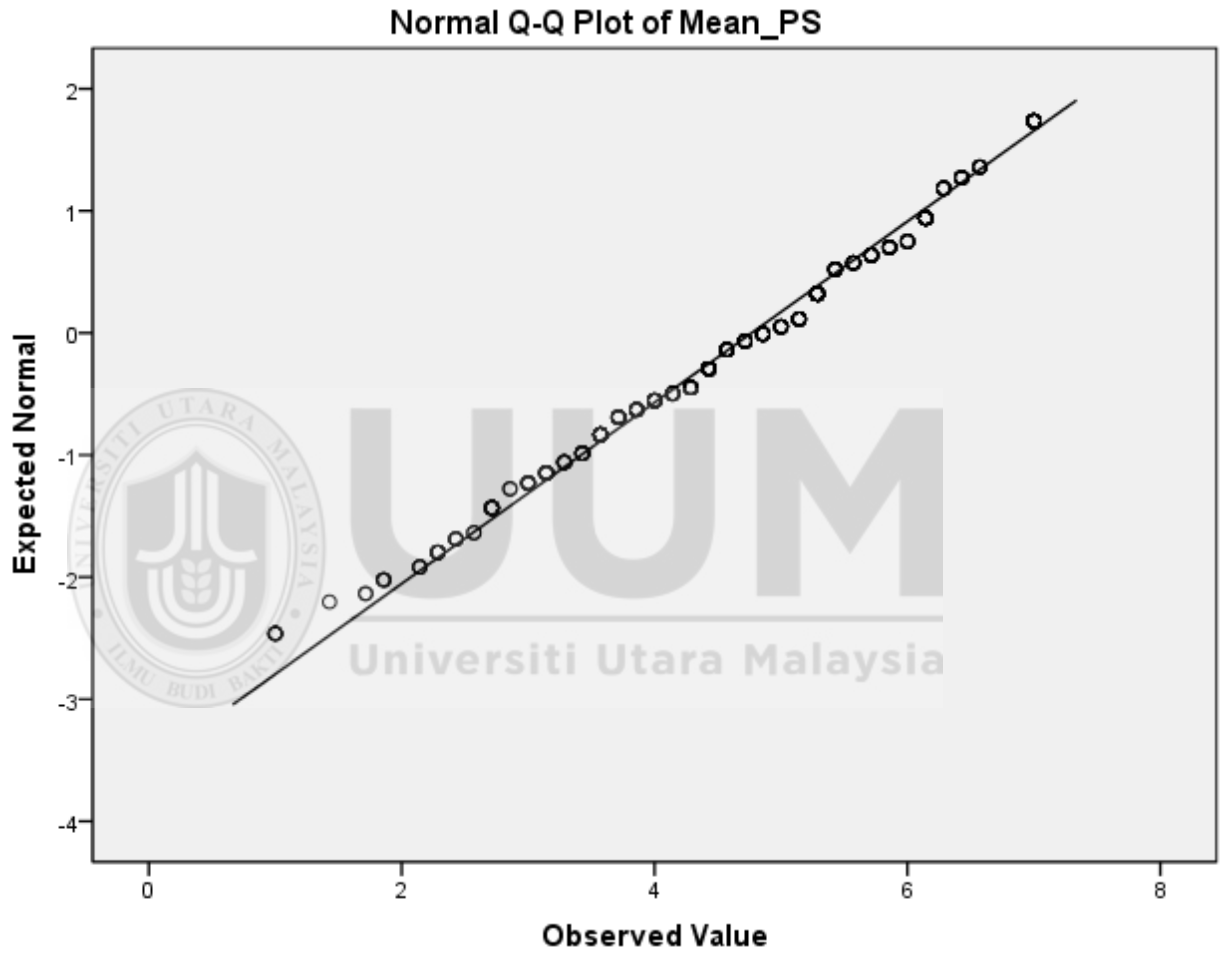
Mean\_PS

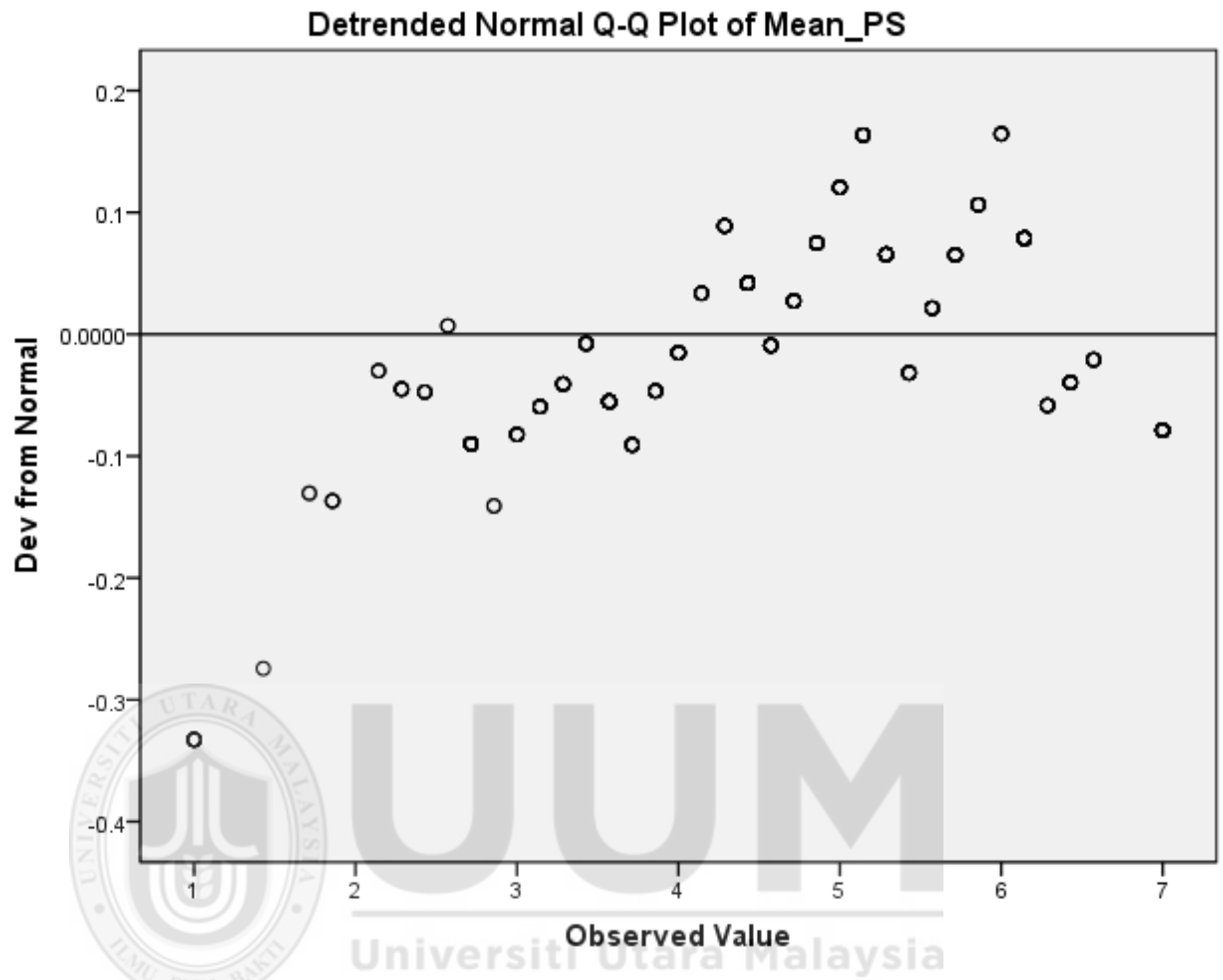


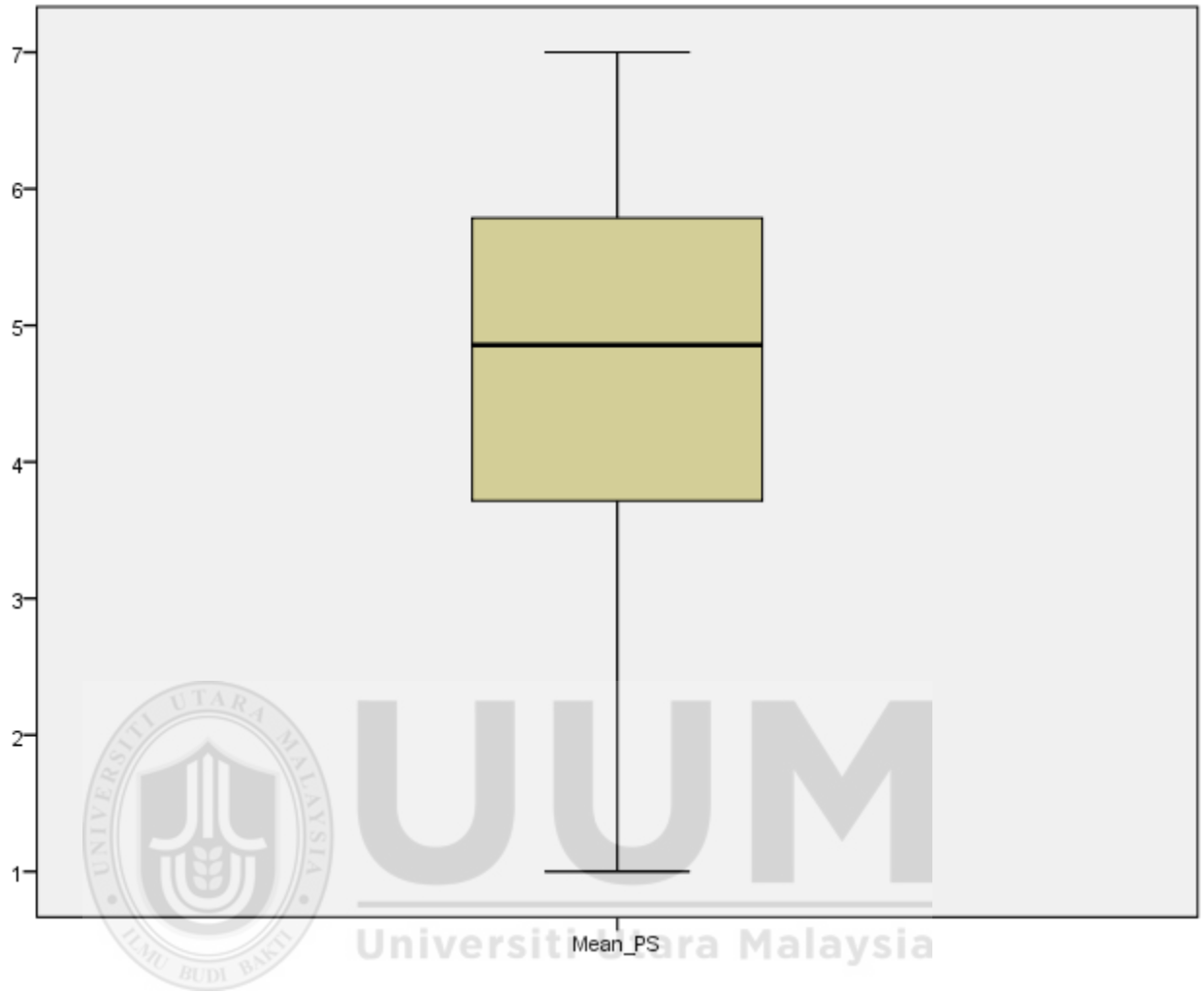


Stem width: 1.00  
Each leaf: 2 case(s)

& denotes fractional leaves.





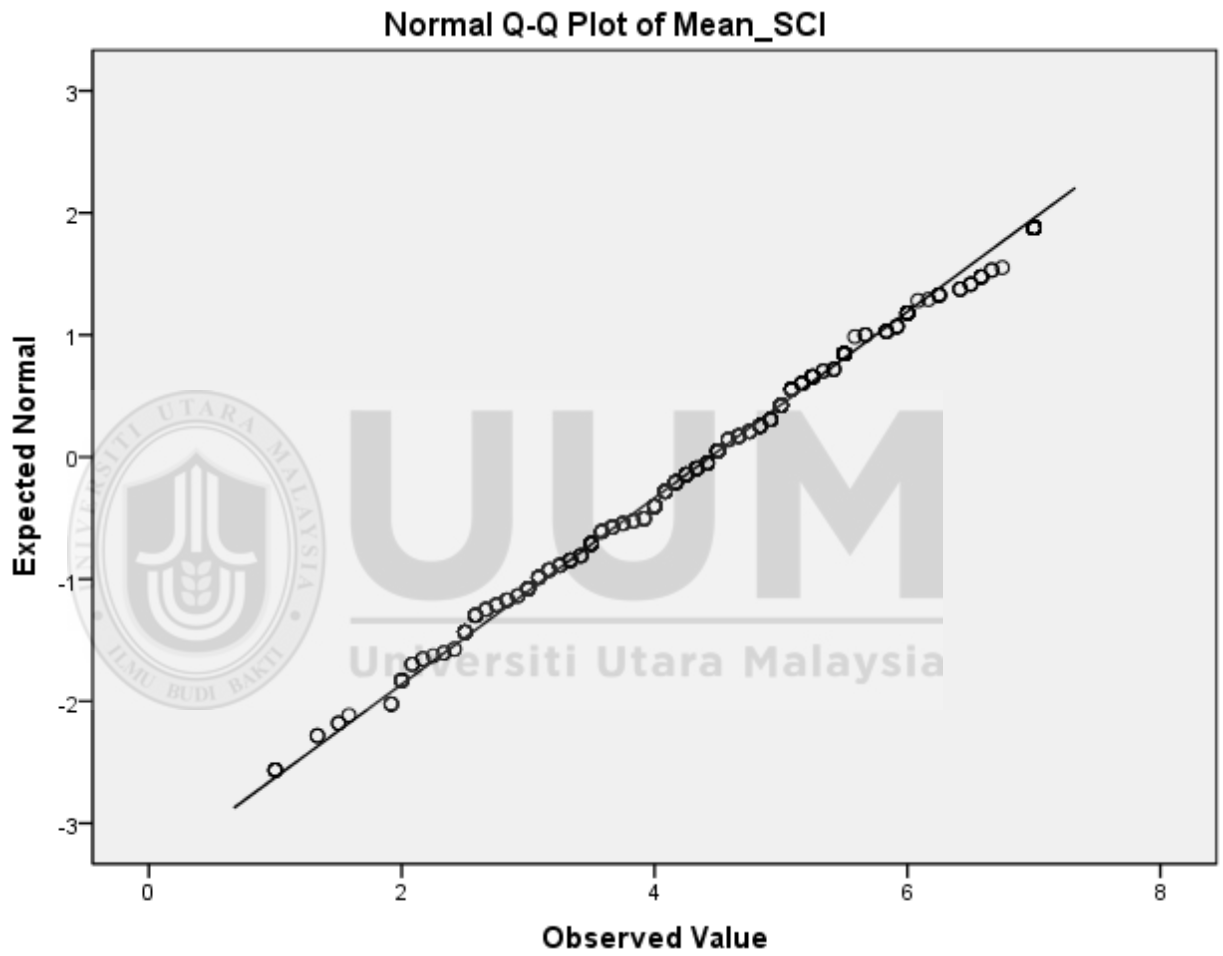


Mean\_SCI

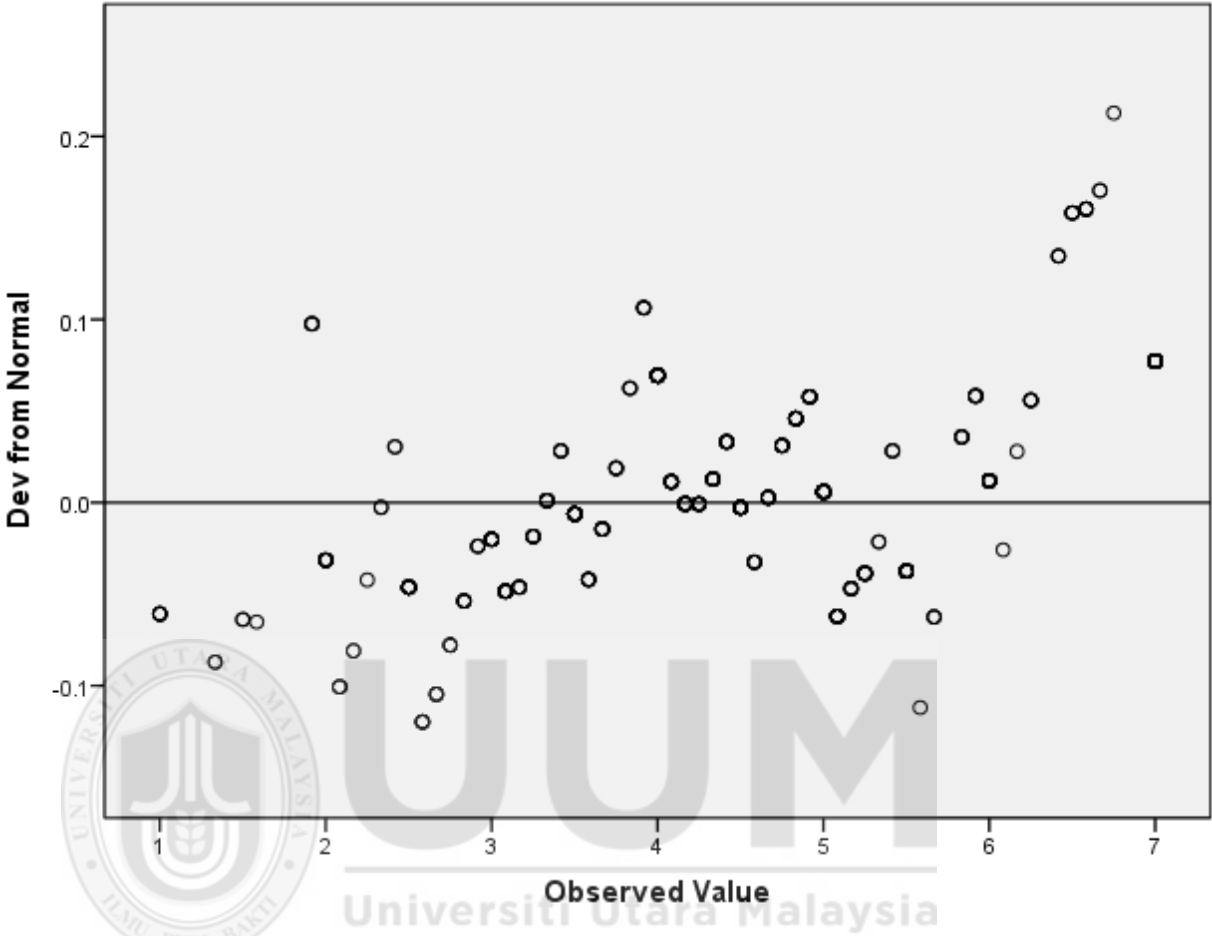


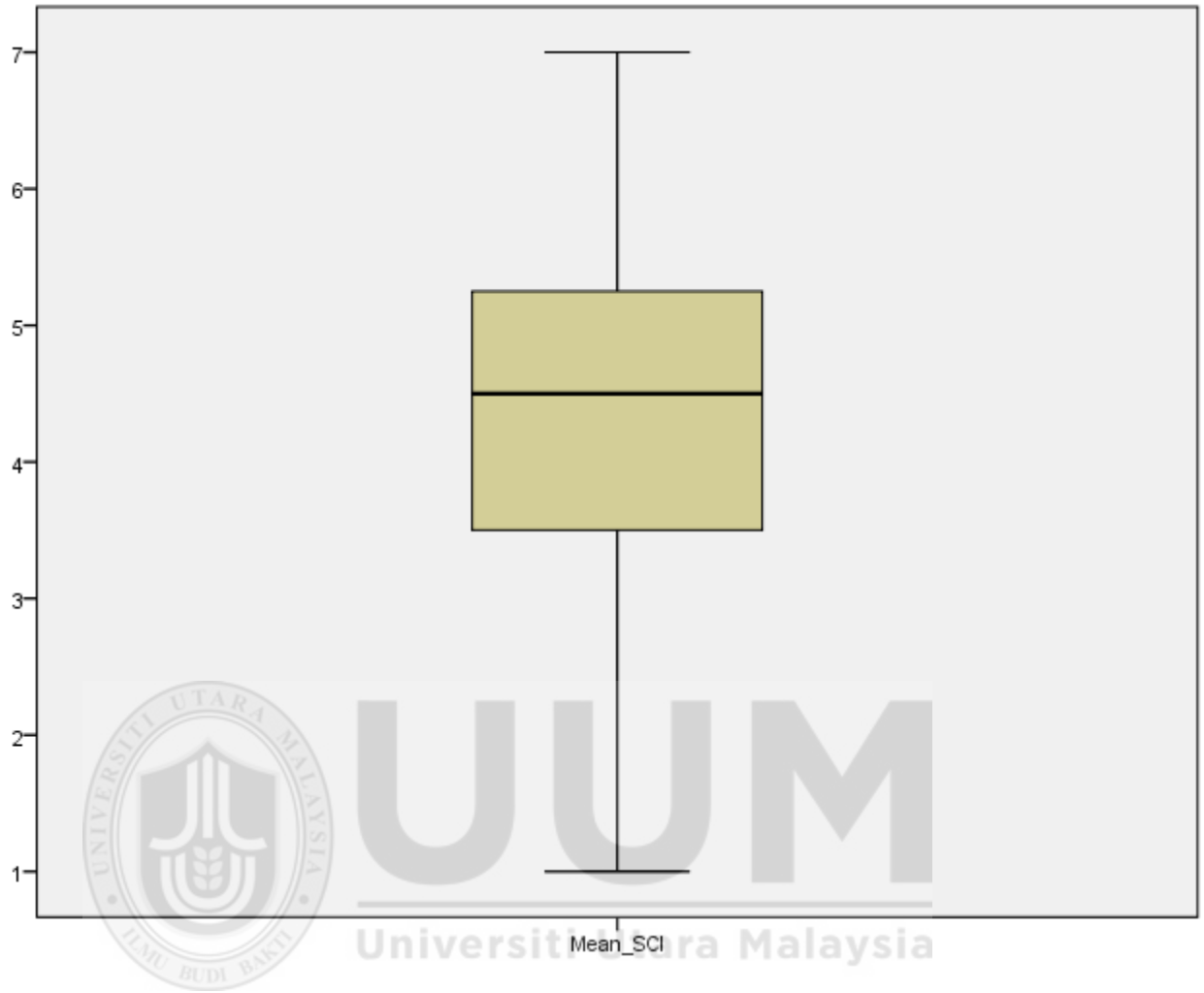
Stem width: 1.00  
Each leaf: 2 case(s)

& denotes fractional leaves.

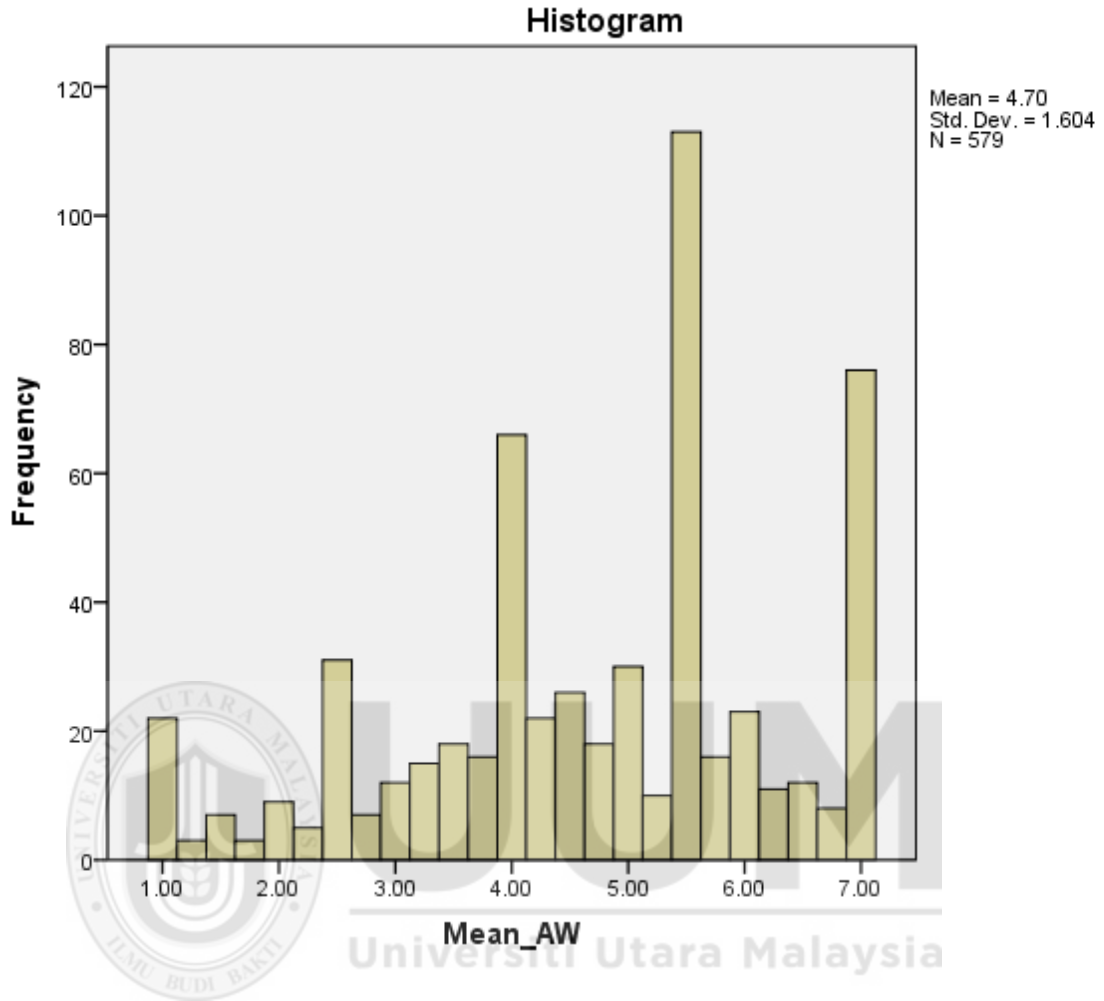


Detrended Normal Q-Q Plot of Mean\_SCI





Mean\_AW

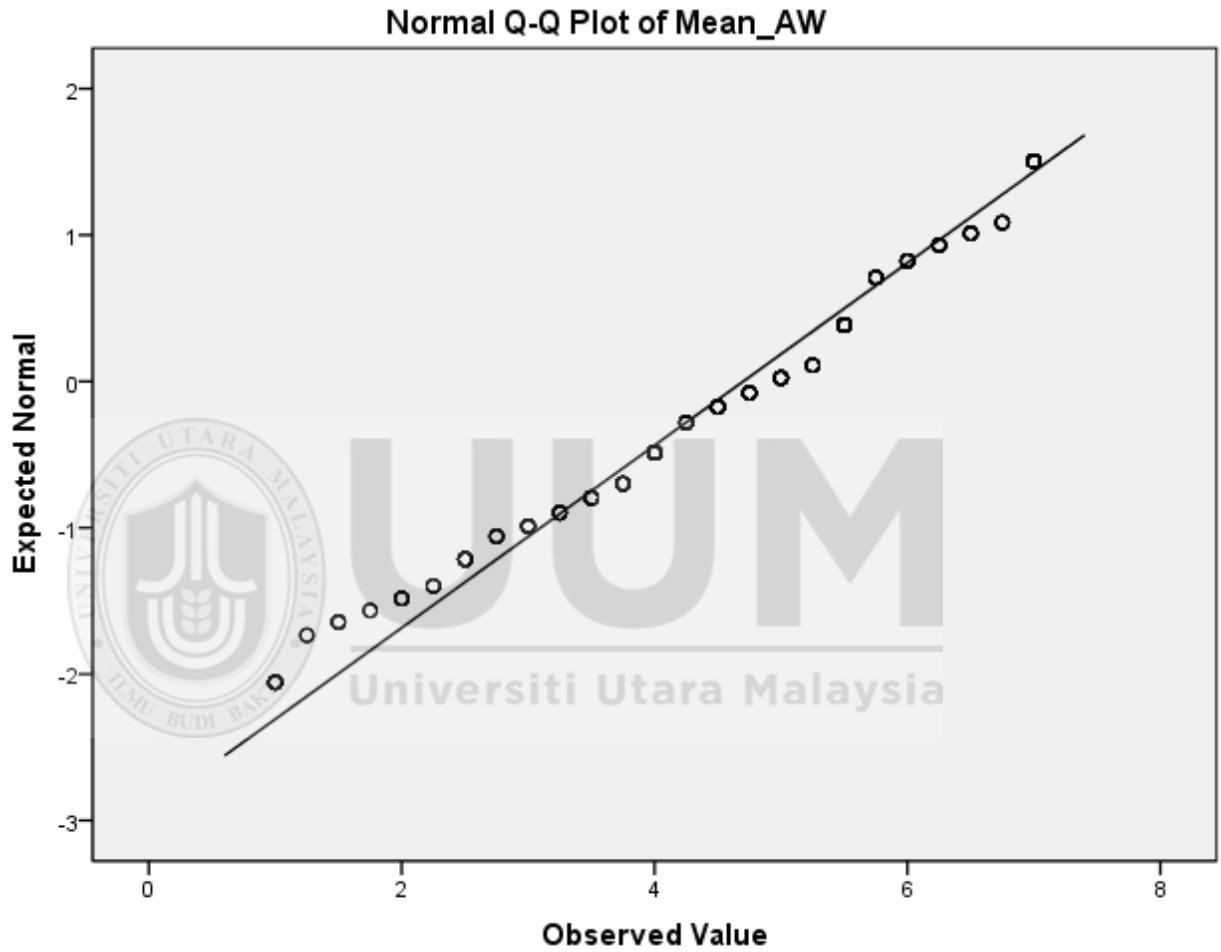


Mean\_AW Stem-and-Leaf Plot

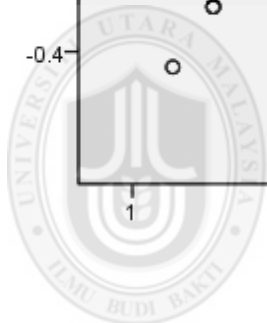
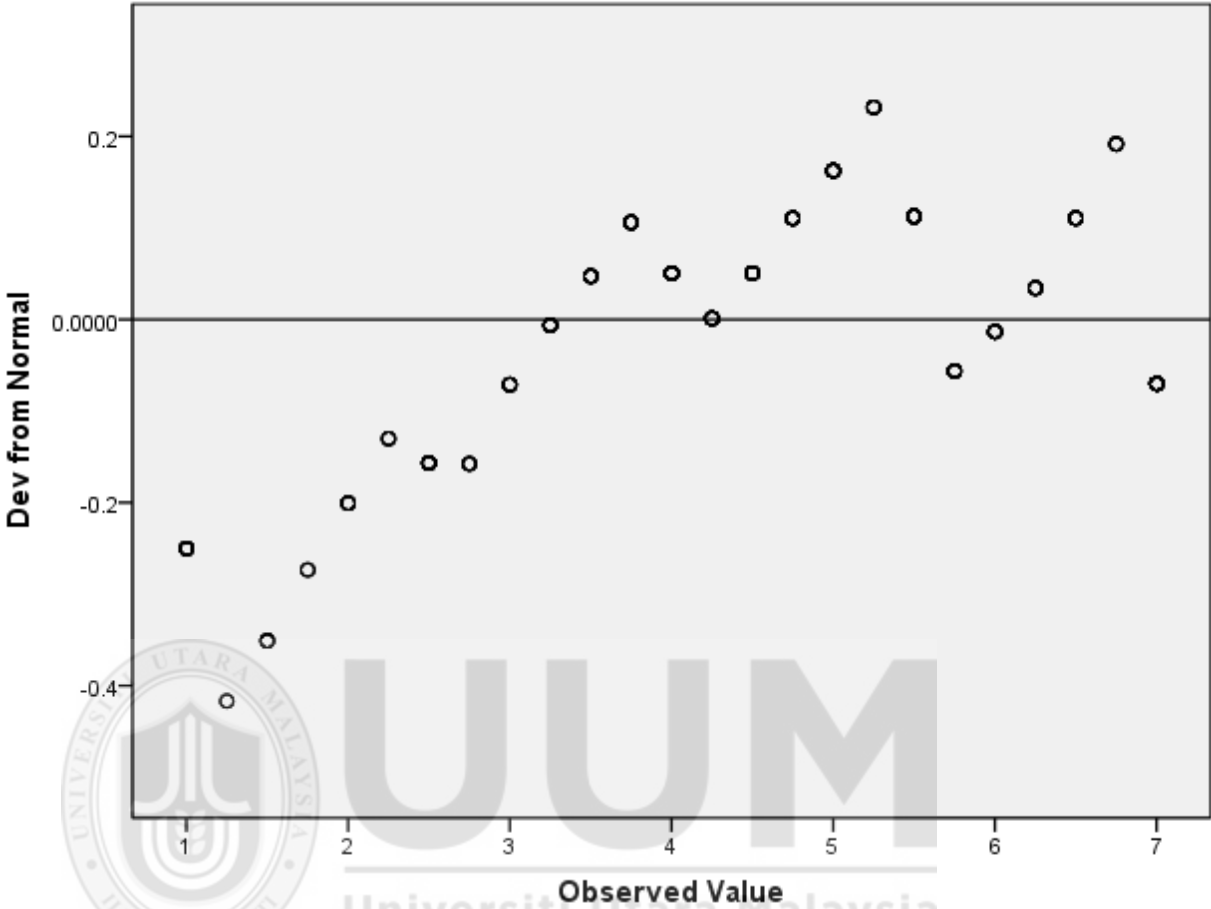
Frequency	Stem &	Leaf
25.00	1 .	000000000002
10.00	1 .	5557
14.00	2 .	000022
38.00	2 .	555555555555555777
27.00	3 .	0000002222222
34.00	3 .	5555555577777777
88.00	4 .	
00000000000000000000000000000000000002222222222		
44.00	4 .	555555555555577777777
40.00	5 .	0000000000000022222
129.00	5 .	
55577777777		
34.00	6 .	000000000022222
20.00	6 .	555557777



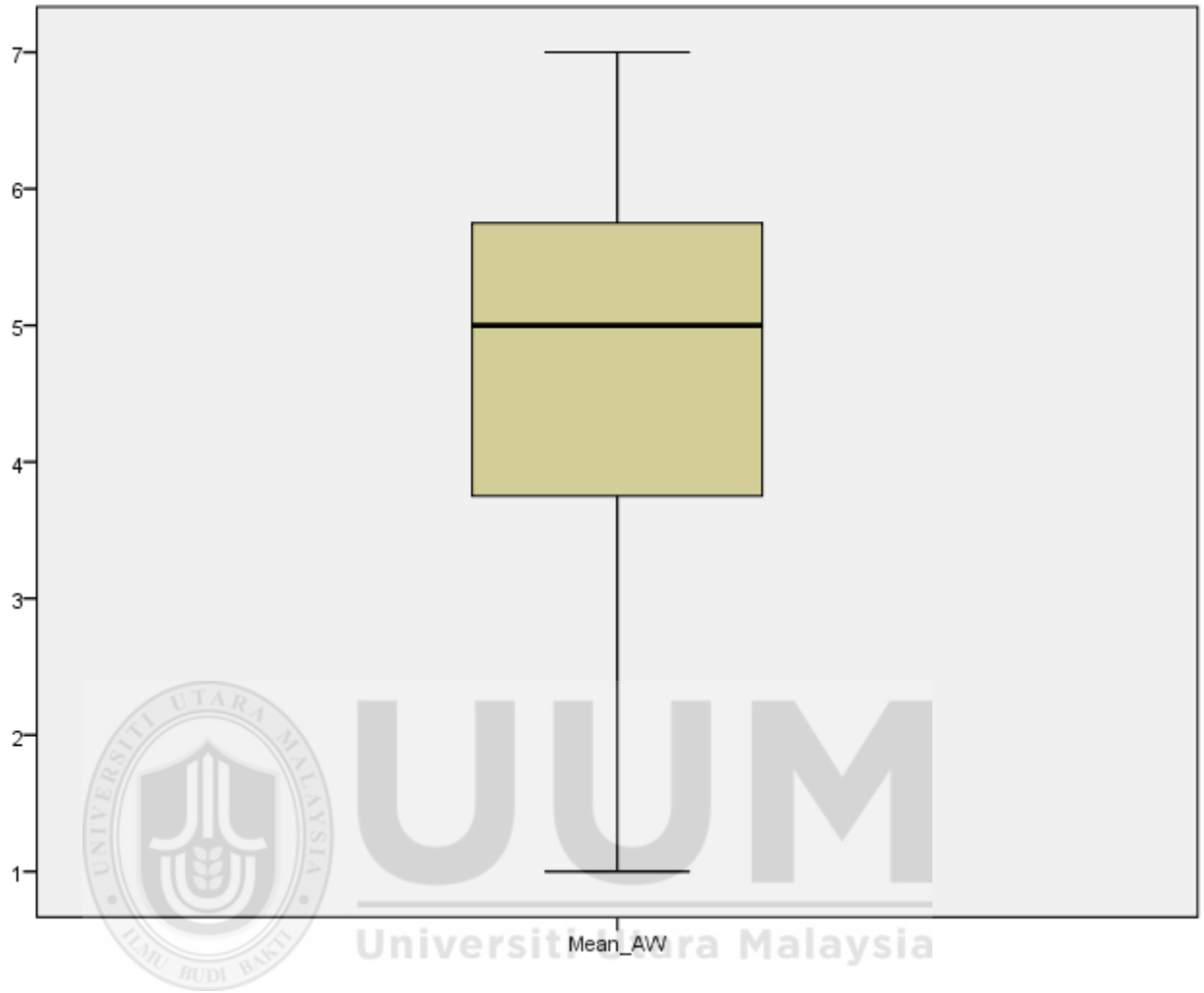
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Each leaf: 2 case(s)



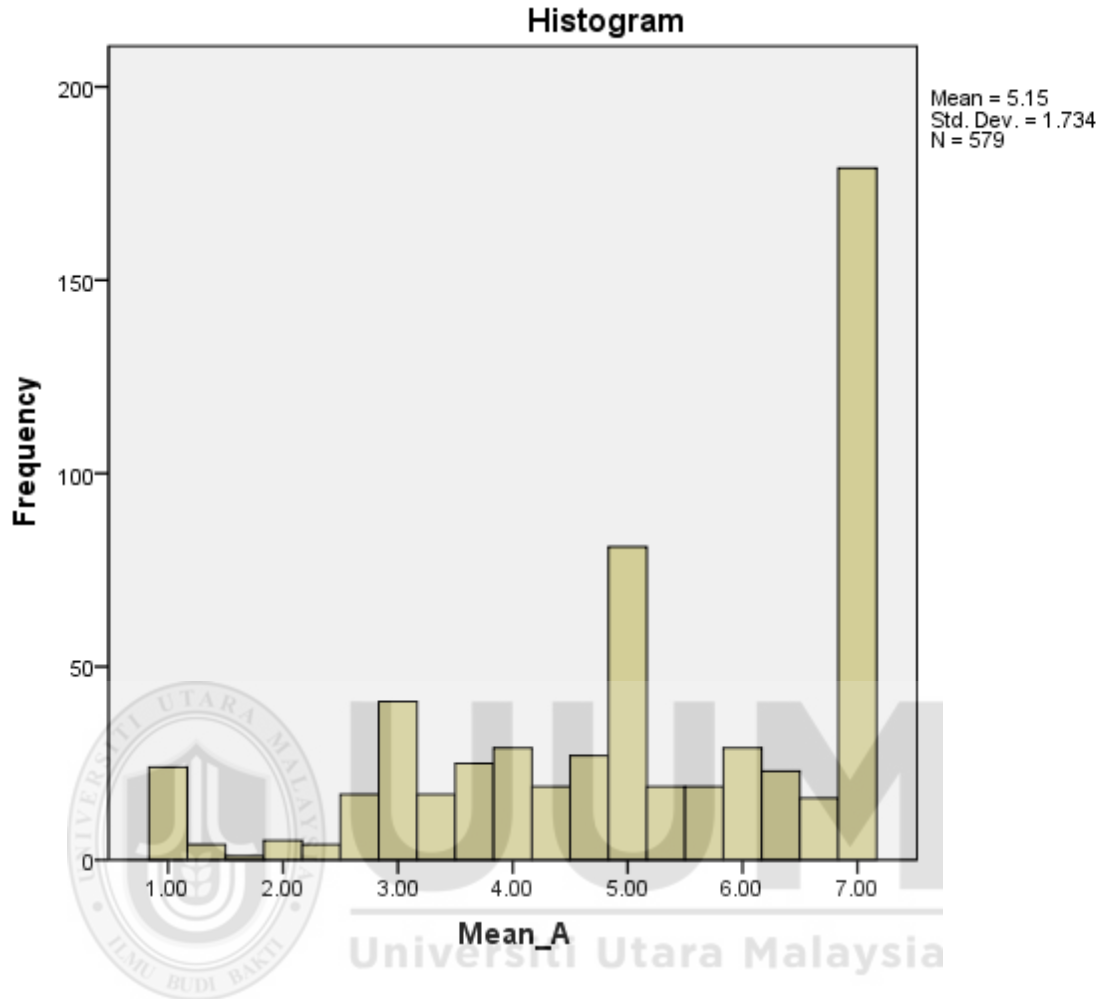
Detrended Normal Q-Q Plot of Mean\_AW



UUM  
Universiti Utara Malaysia



Mean\_A

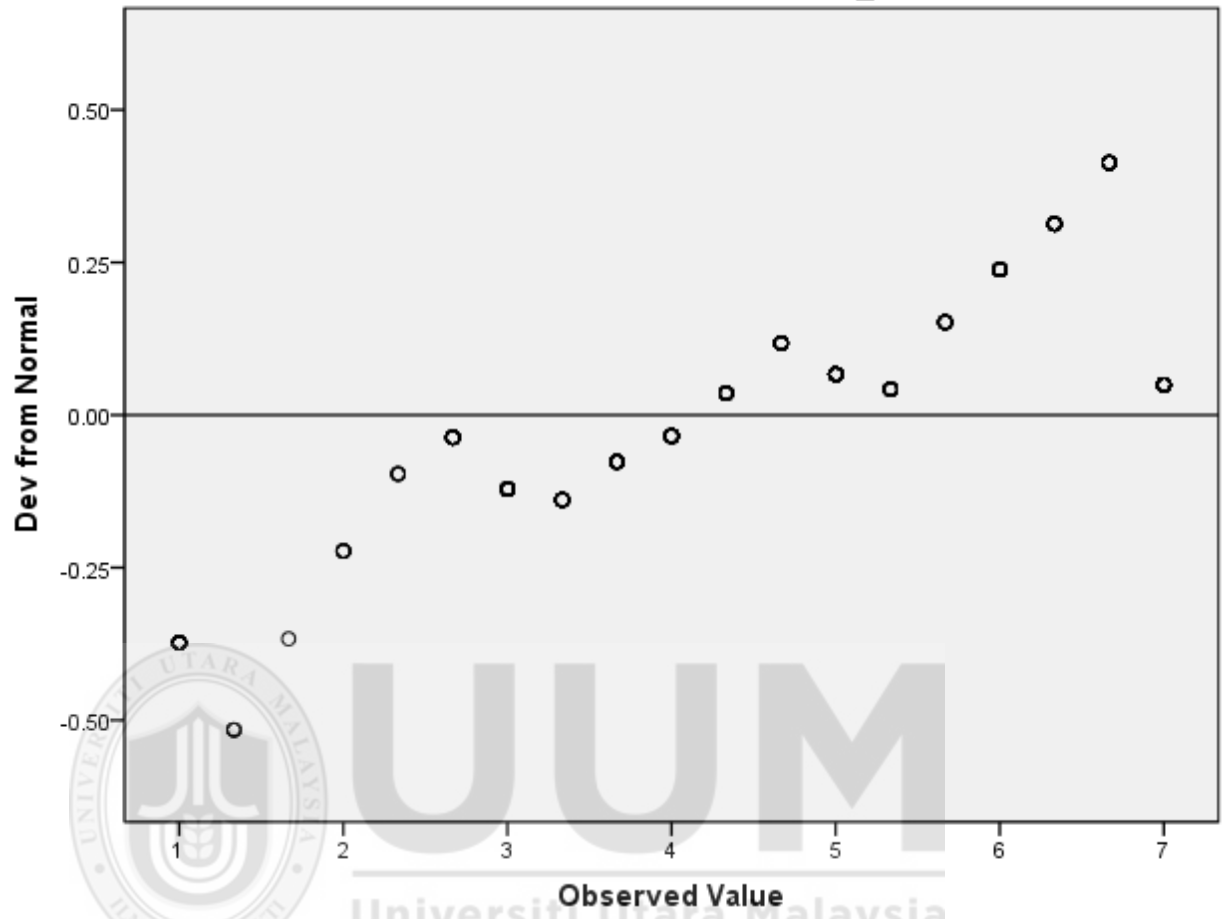


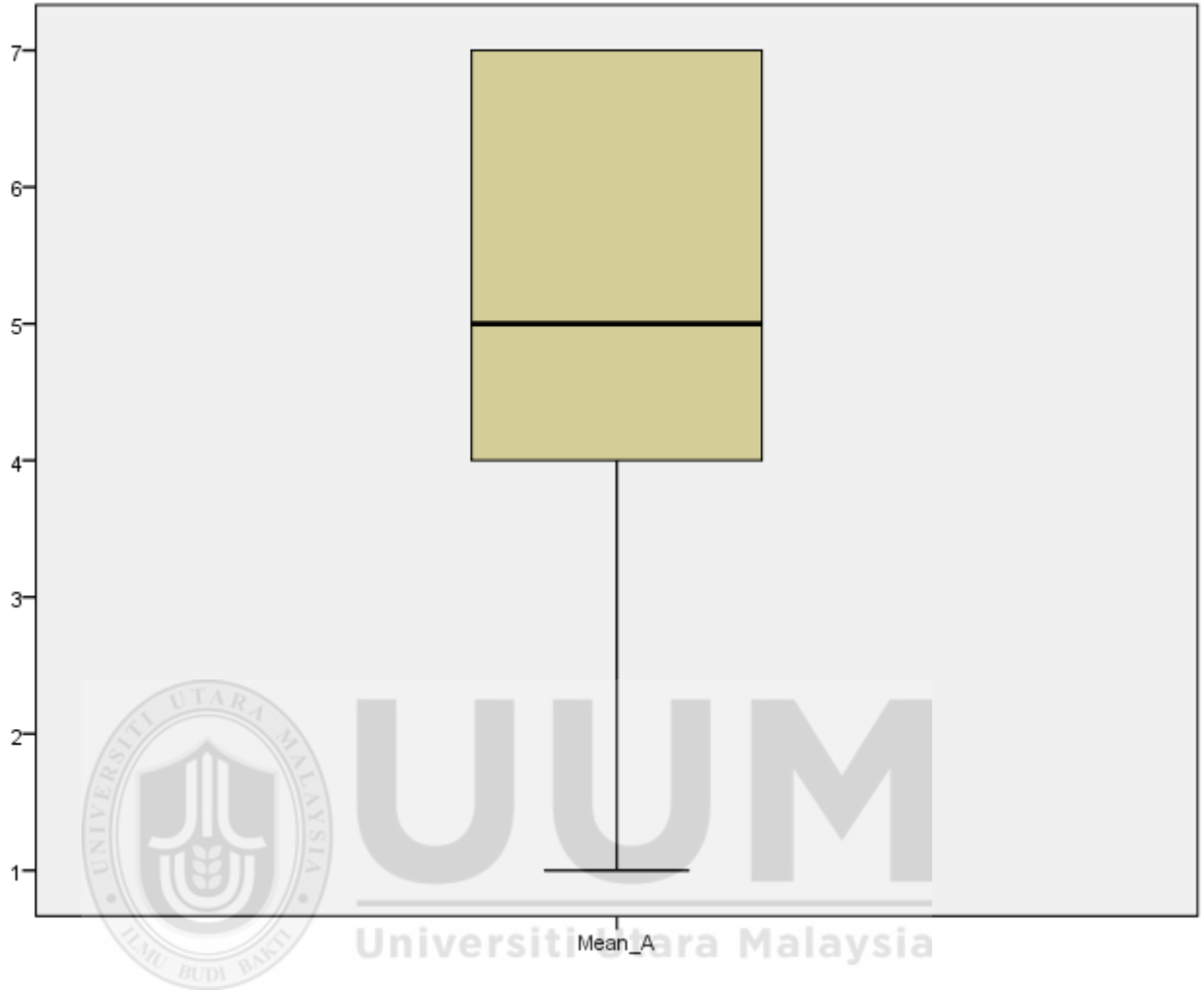
Mean\_A Stem-and-Leaf Plot

Frequency	Stem &	Leaf
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1.00	1 .	&
9.00	2 .	0033
17.00	2 .	6666666
58.00	3 .	000000000000000000033333333
25.00	3 .	66666666666
48.00	4 .	00000000000000333333333
27.00	4 .	6666666666666
100.00	5 .	000000000000000000000000033333333
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52.00	6 .	0000000000000033333333333
16.00	6 .	6666666



Detrended Normal Q-Q Plot of Mean\_A





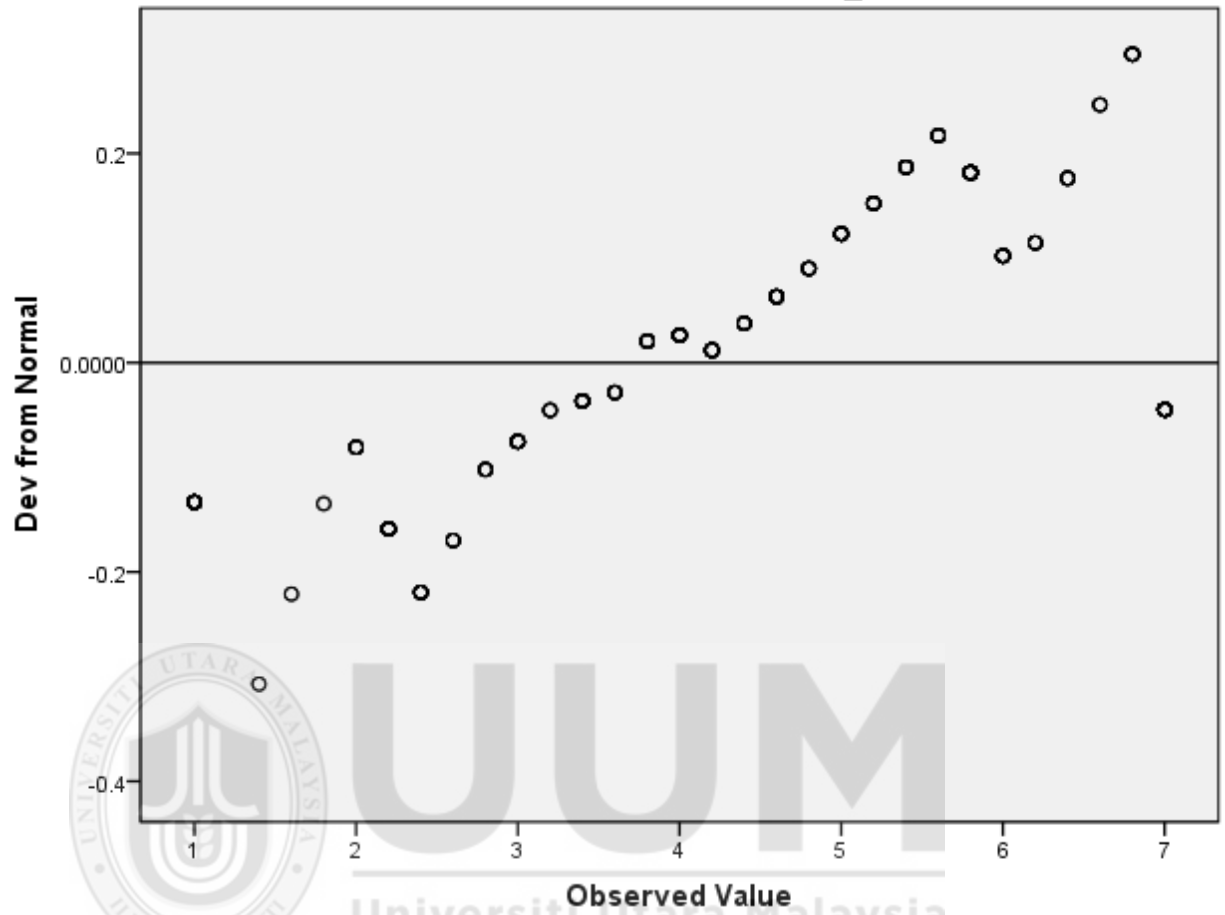
Mean\_SN

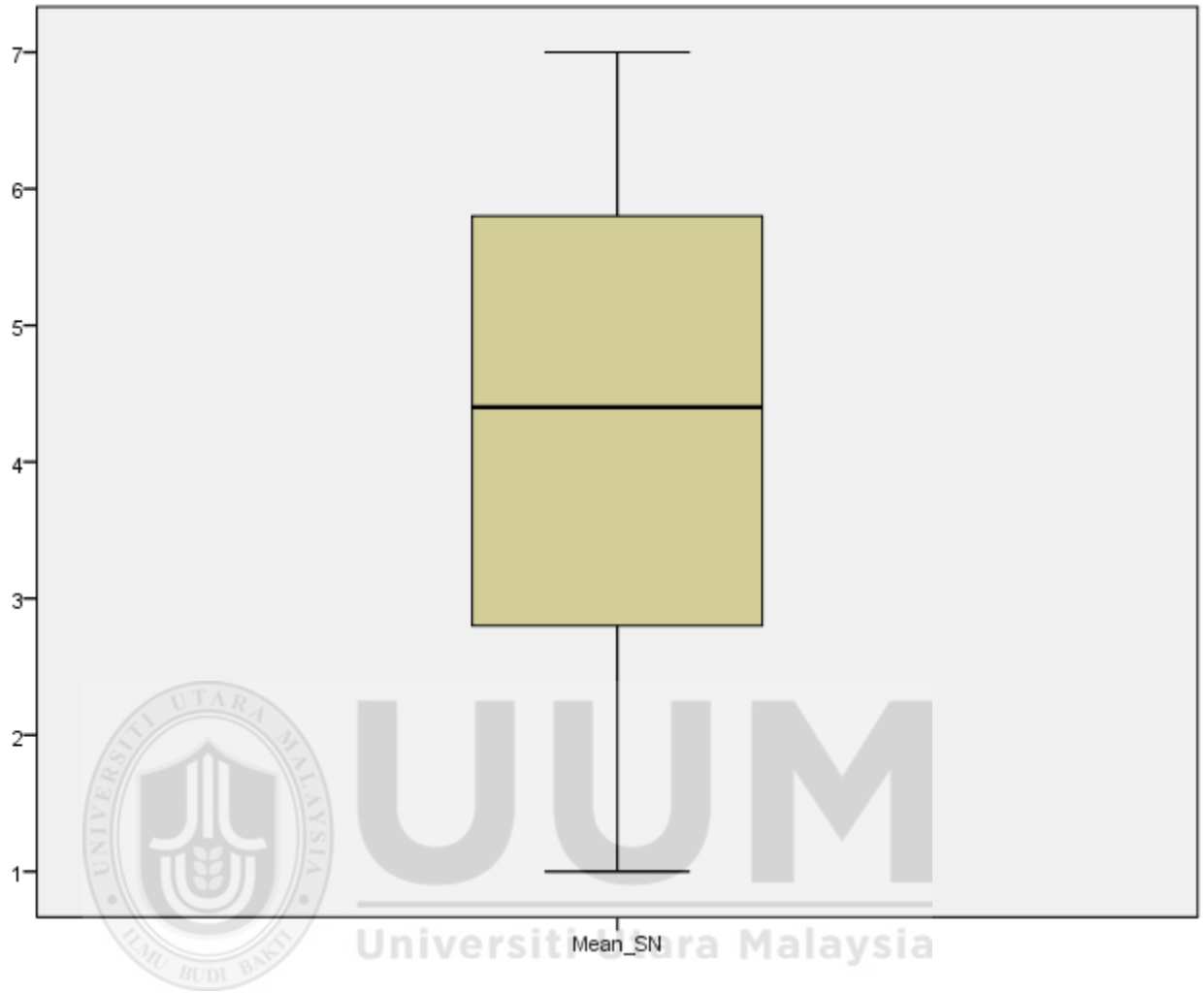




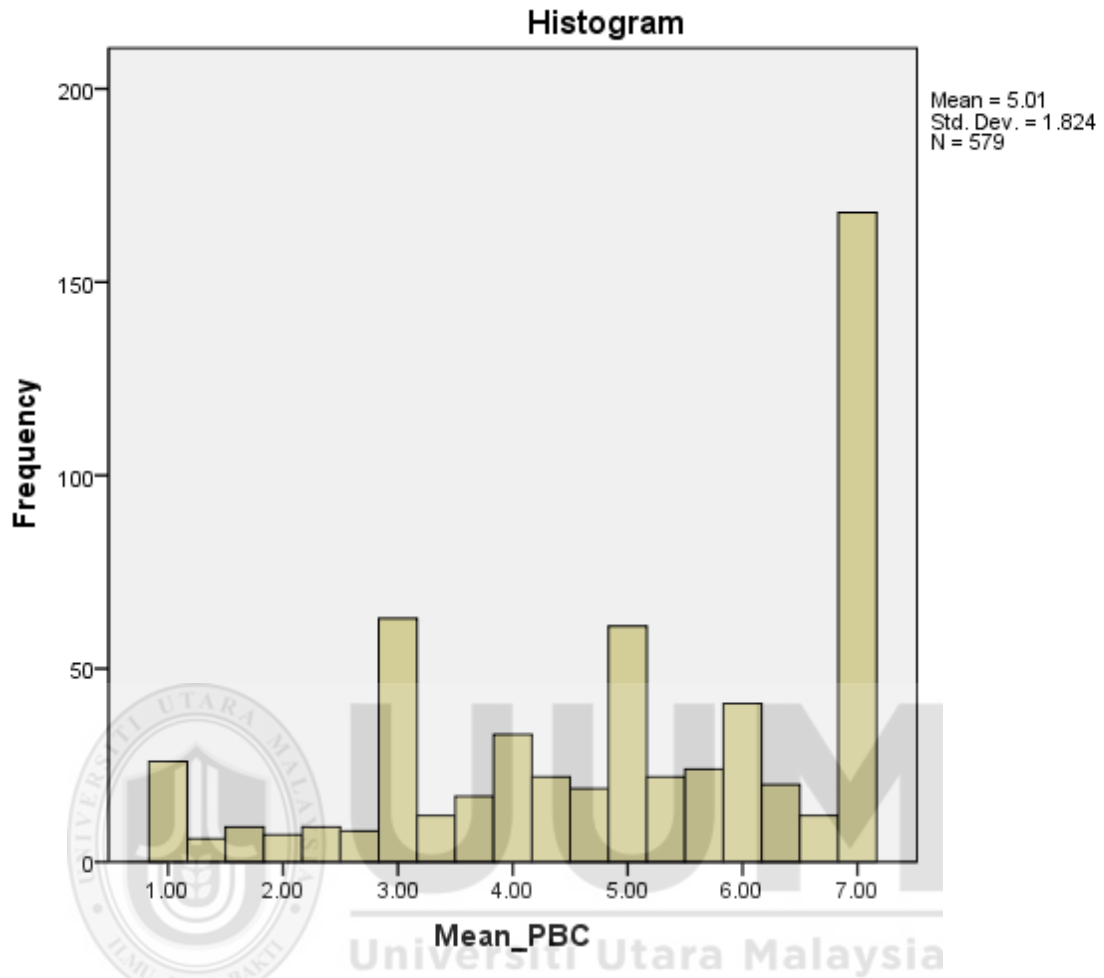


Detrended Normal Q-Q Plot of Mean\_SN





Mean\_PBC

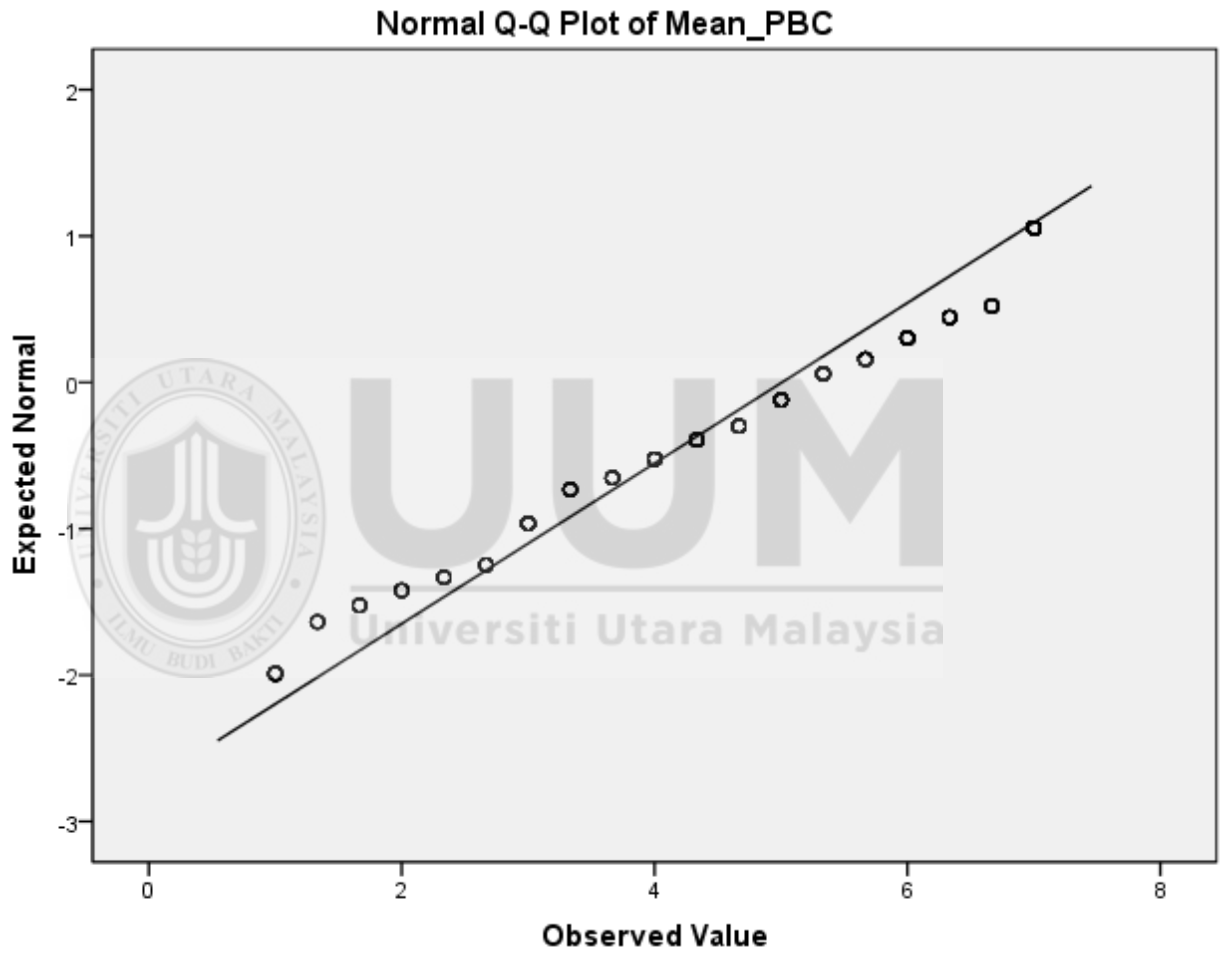


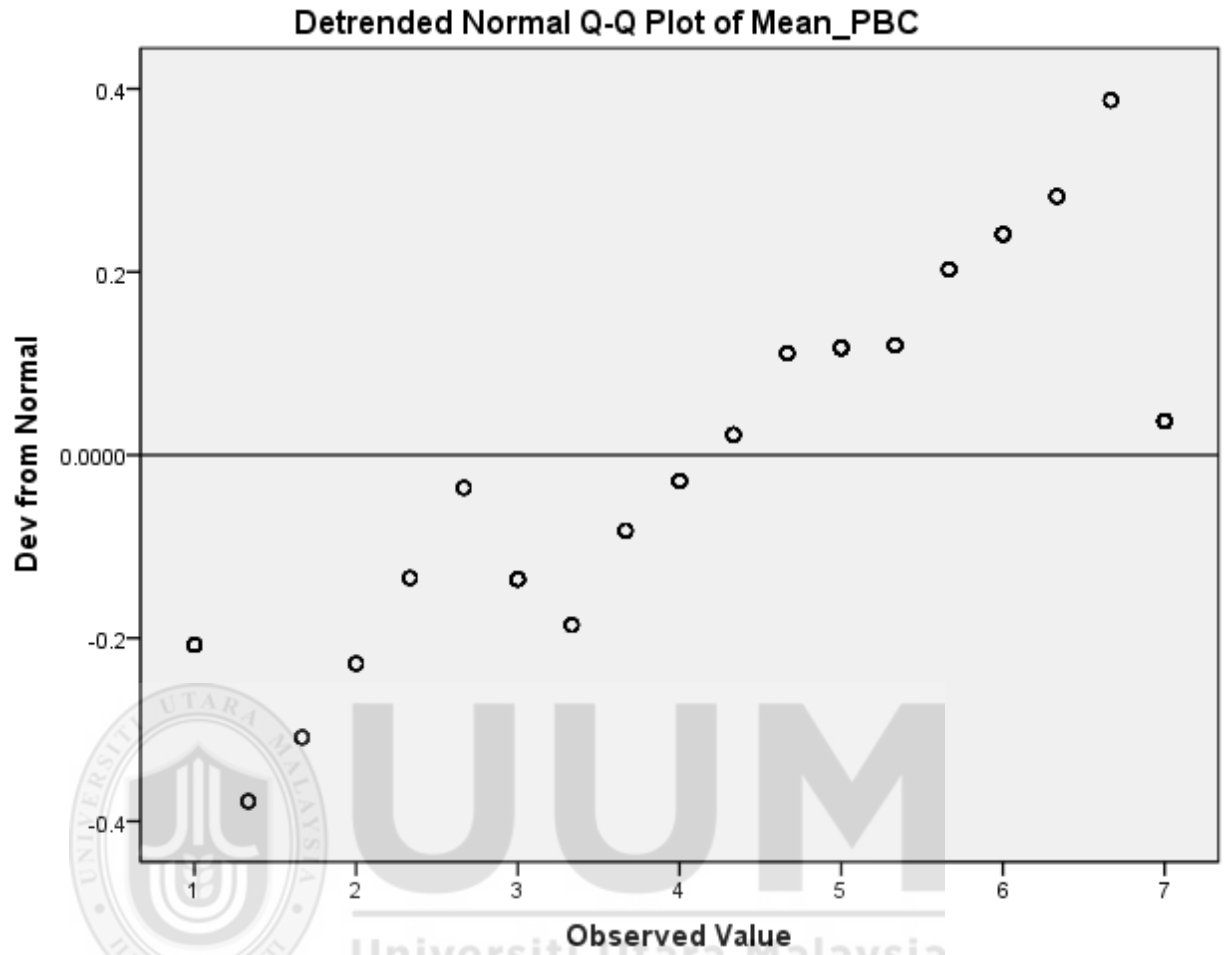
Mean\_PBC Stem-and-Leaf Plot

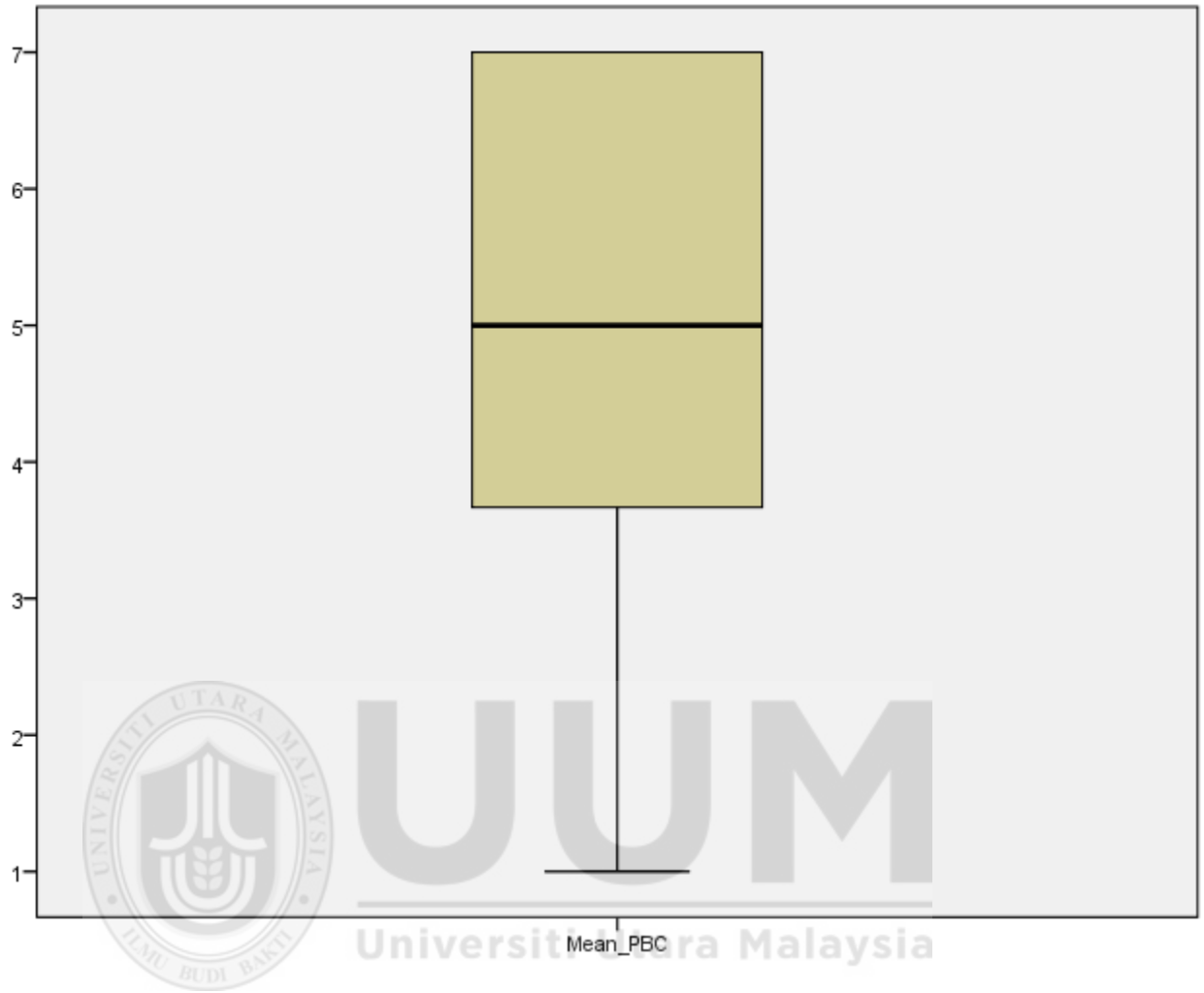
Frequency	Stem & Leaf
32.00	1 . 0000000000000333
9.00	1 . 6666
16.00	2 . 003333
8.00	2 . 6666
75.00	3 . 000000000000000000000000000333333
17.00	3 . 6666666
55.00	4 . 00000000000000033333333333
19.00	4 . 66666666
83.00	5 . 0000000000000000000000000003333333333
24.00	5 . 6666666666
61.00	6 . 00000000000000000003333333333
12.00	6 . 666666

```
168.00    7 .
000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
00000000000000000000
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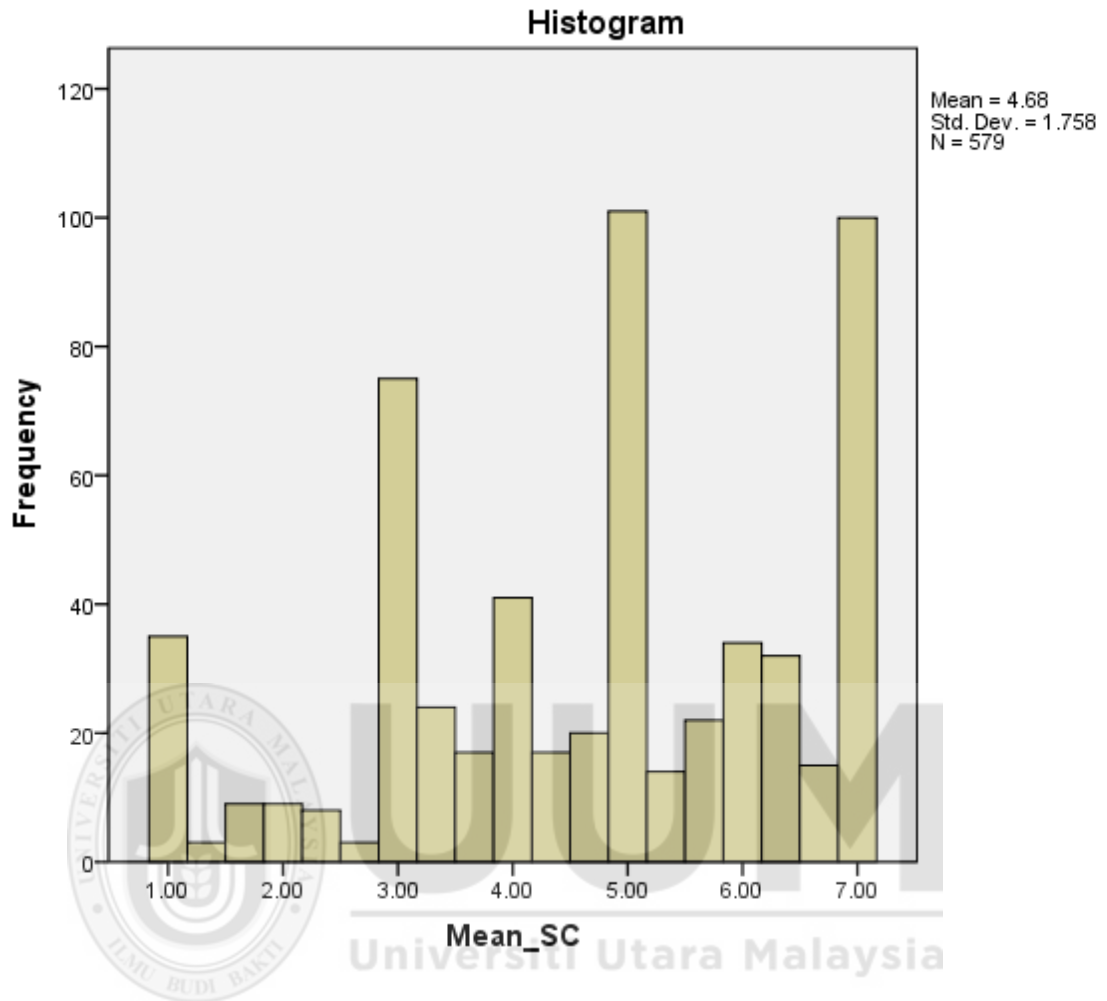
Stem width: 1.00  
Each leaf: 2 case(s)







Mean\_SC



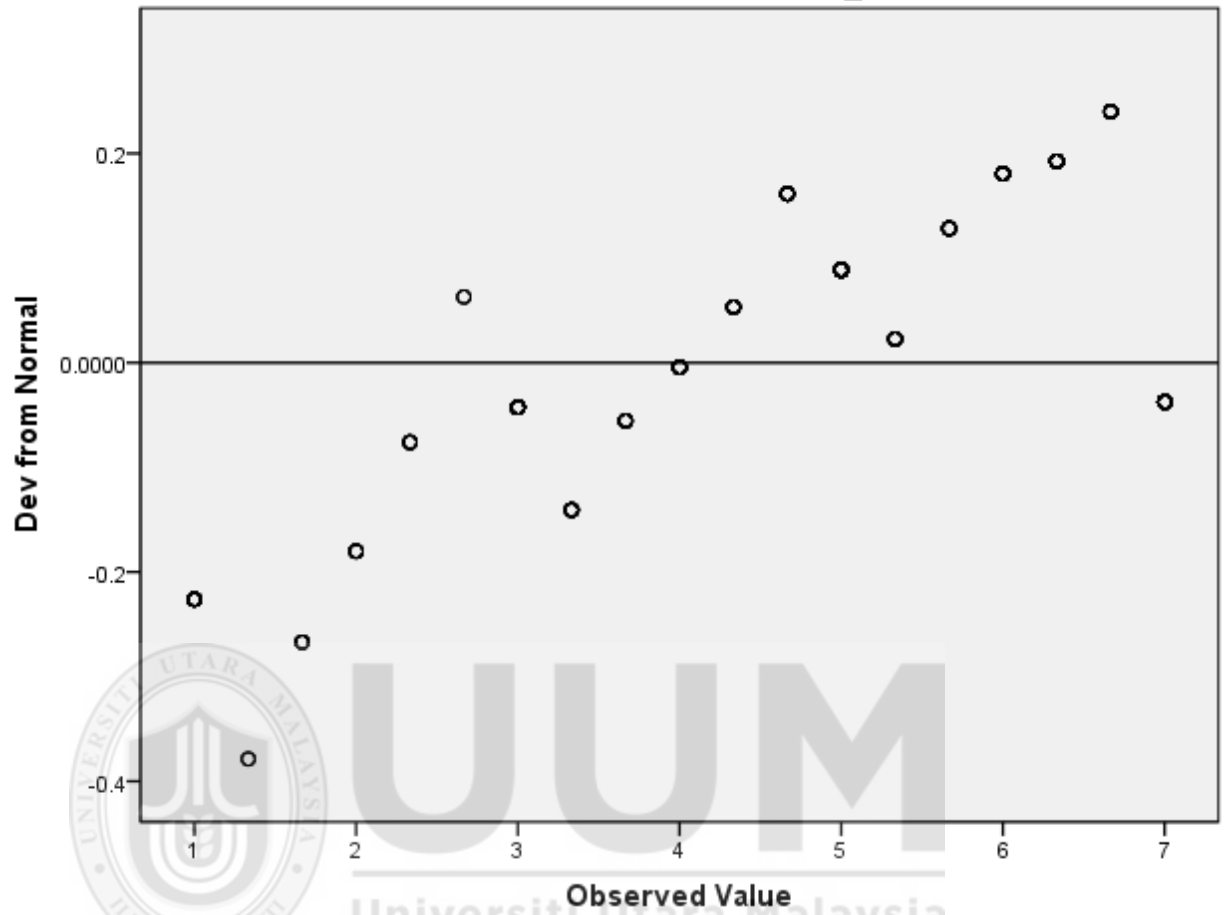
Mean\_SC Stem-and-Leaf Plot

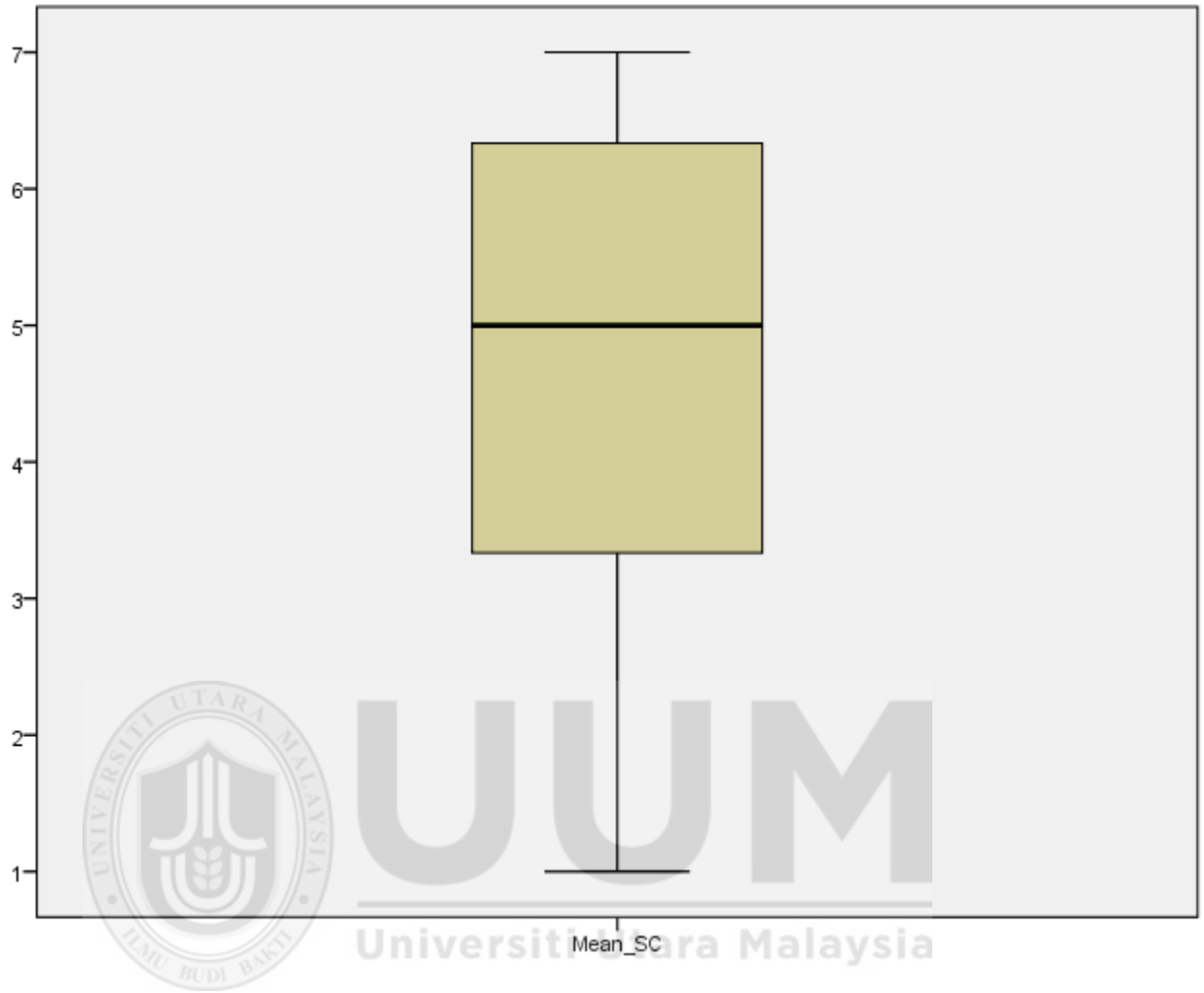
Frequency	Stem &	Leaf
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9.00	1 .	6666
17.00	2 .	00003333
3.00	2 .	6
99.00	3 .	00000000000000000000033333333333
17.00	3 .	66666666
58.00	4 .	0000000000000000000333333333
20.00	4 .	6666666666
115.00	5 .	000000000000000000000000000000000000033333333
22.00	5 .	666666666666
66.00	6 .	00000000000000000333333333333333
15.00	6 .	6666666



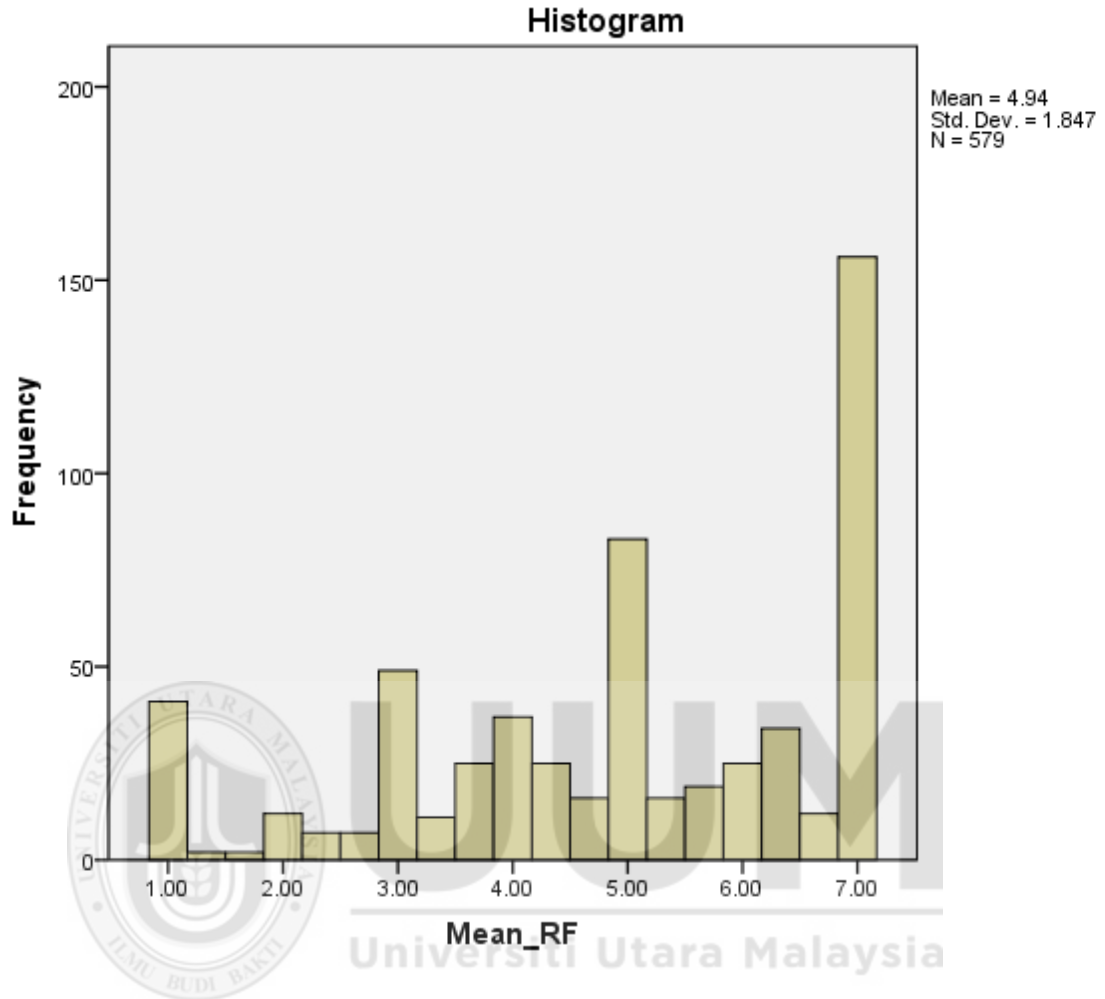


Detrended Normal Q-Q Plot of Mean\_SC





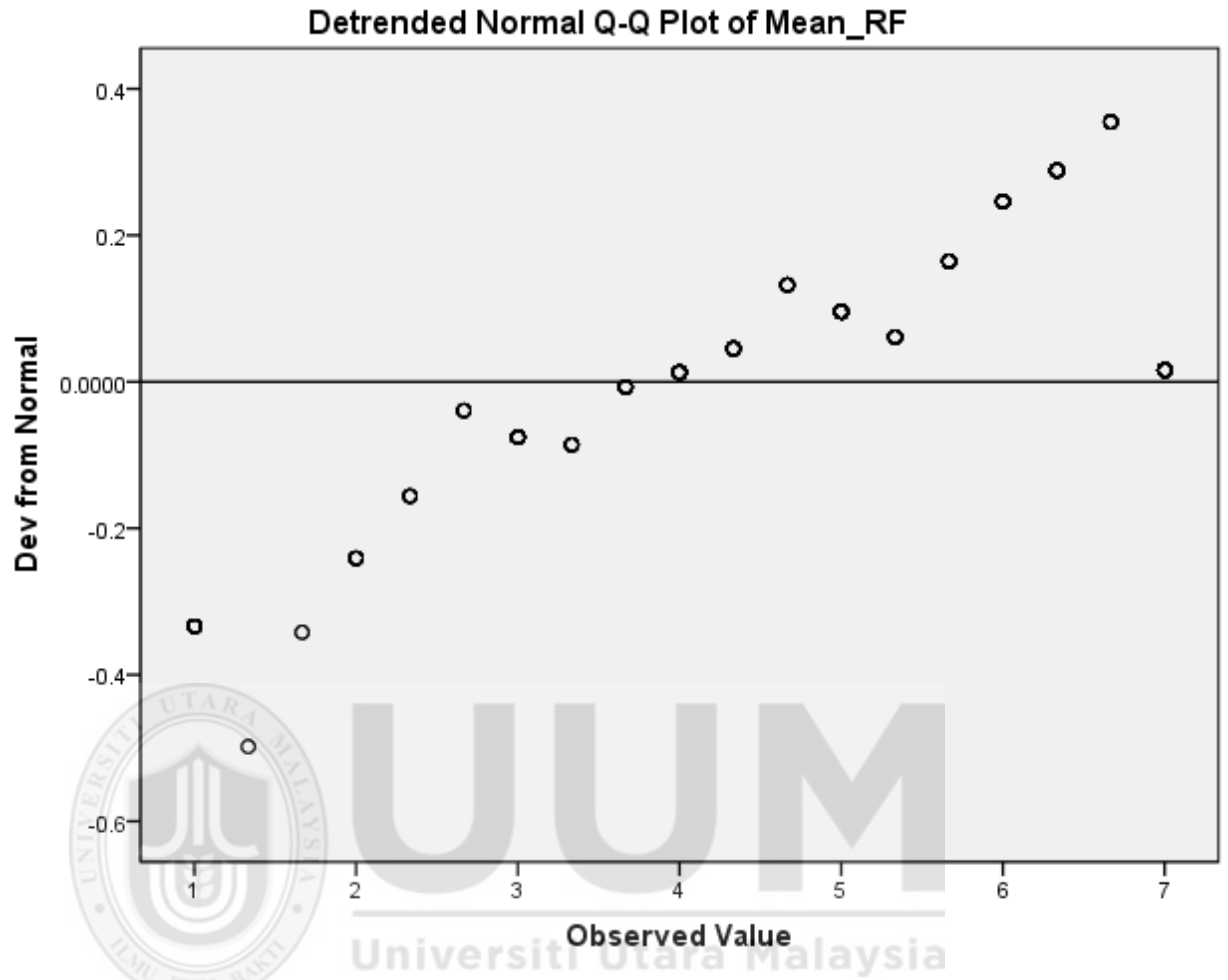
Mean\_RF

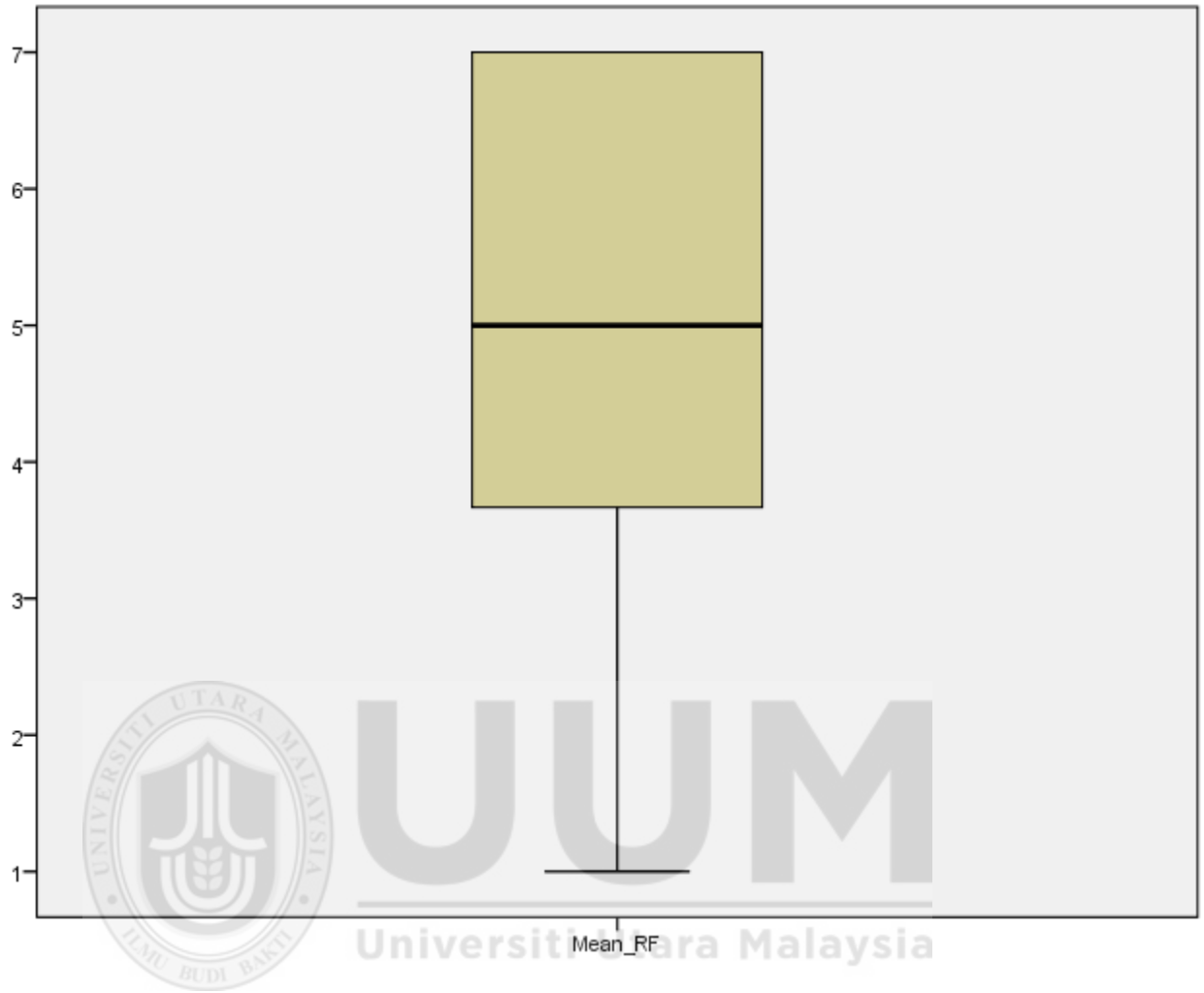


Mean\_RF Stem-and-Leaf Plot

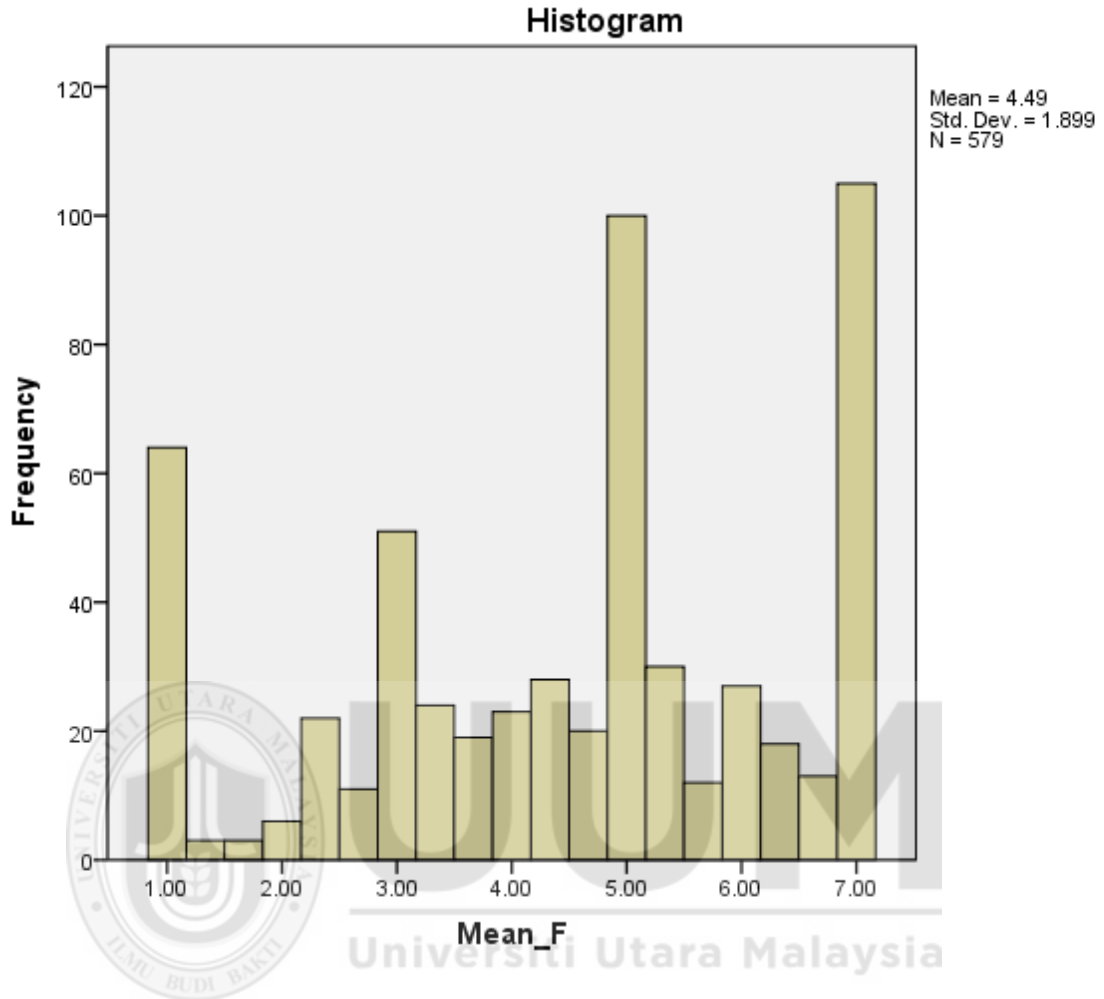
Frequency	Stem &	Leaf
43.00	1 .	000000000000000000000003
2.00	1 .	6
19.00	2 .	000000333
7.00	2 .	666
60.00	3 .	0000000000000000000000033333
25.00	3 .	6666666666
62.00	4 .	000000000000000000033333333333
16.00	4 .	6666666
99.00	5 .	00000000000000000000000033333333
19.00	5 .	66666666
59.00	6 .	0000000000033333333333333333
12.00	6 .	66666







Mean\_F



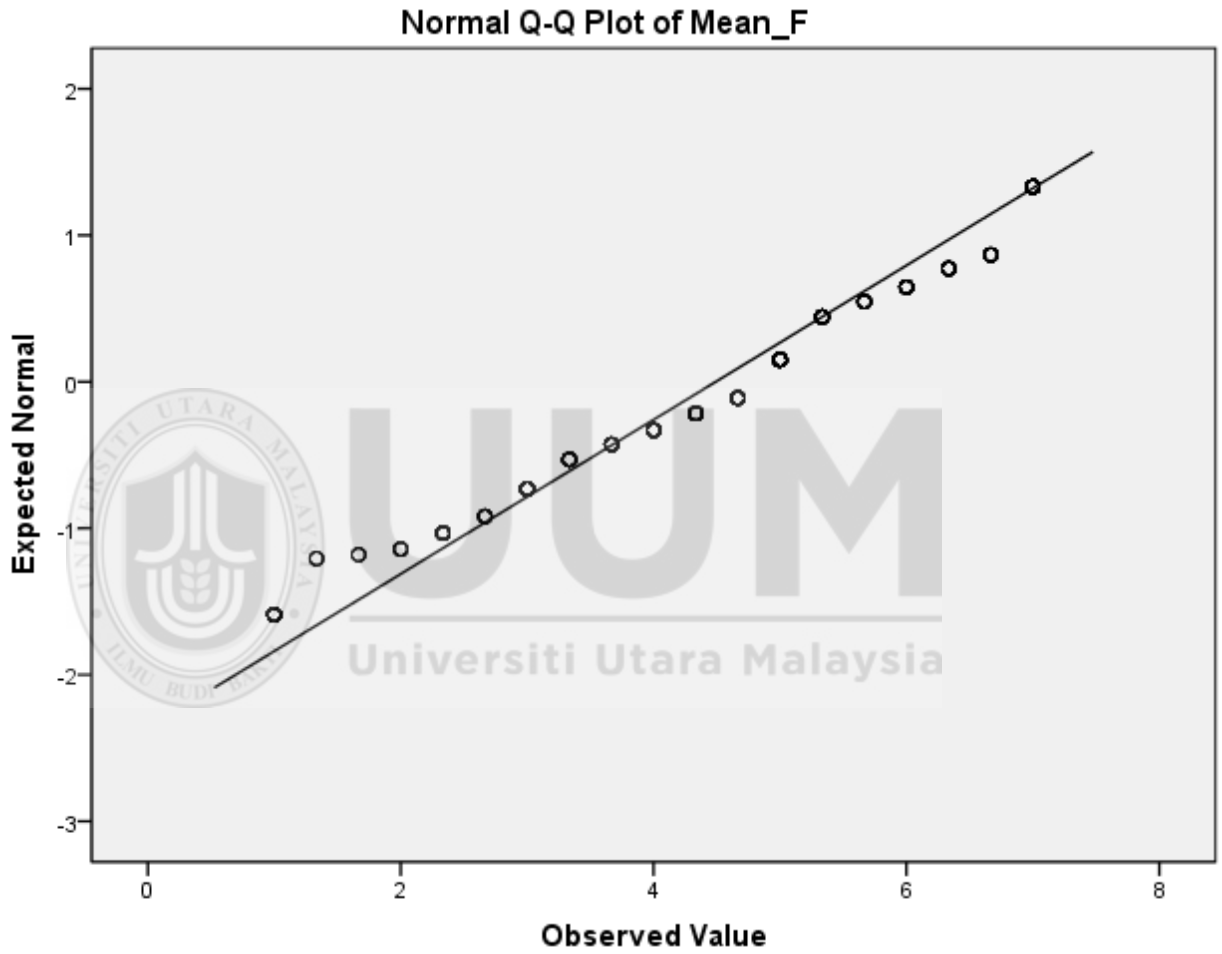
Mean\_F Stem-and-Leaf Plot

Frequency	Stem & Leaf
67.00	1 . 00000000000000000000000000000003
3.00	1 . 6
28.00	2 . 0003333333333333
11.00	2 . 6666
75.00	3 . 00000000000000000000000003333333333333
19.00	3 . 66666666
51.00	4 . 0000000000333333333333333333
20.00	4 . 66666666
130.00	5 .
0003333333333333333	
12.00	5 . 666666
45.00	6 . 0000000000003333333333
13.00	6 . 66666

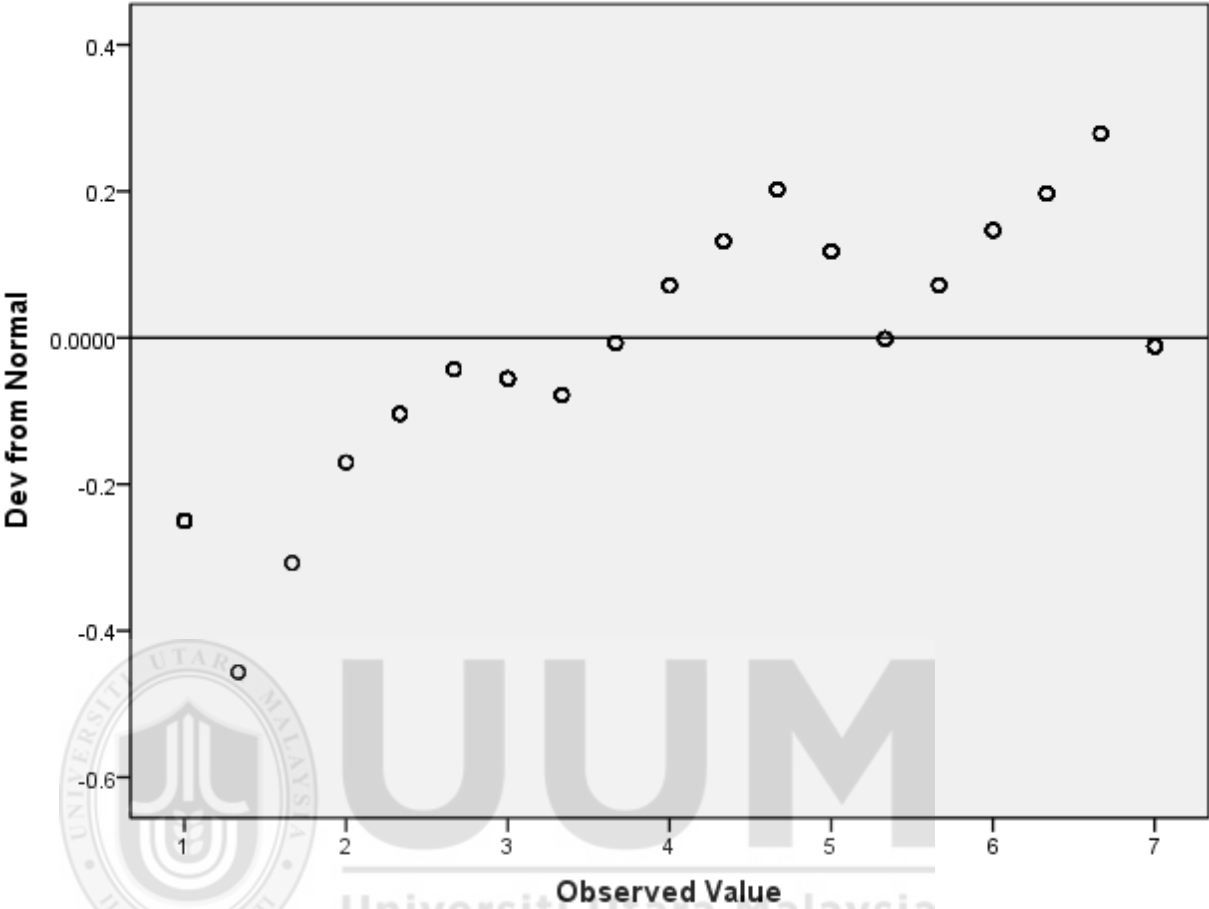


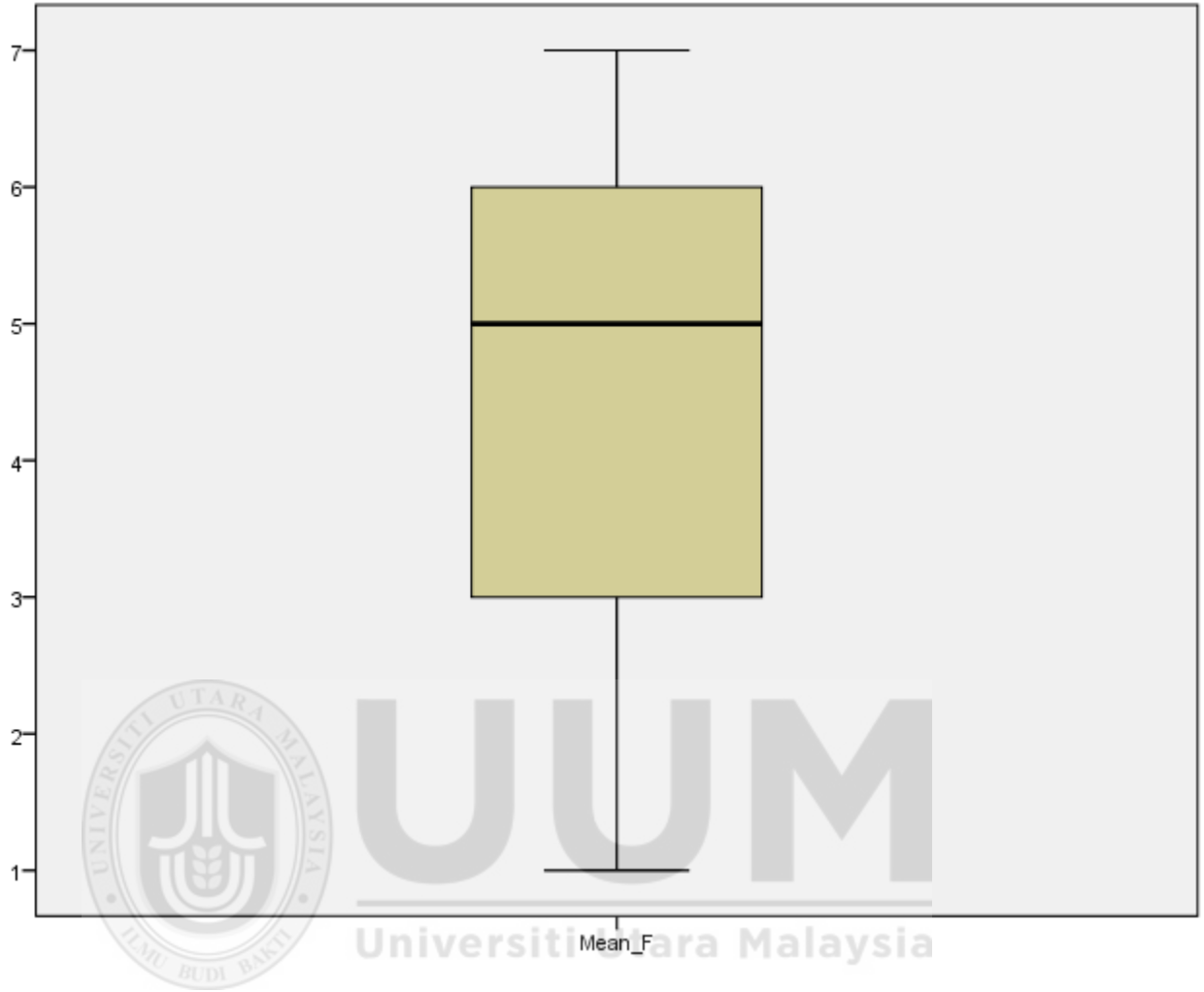
105.00            7 .  
00

Stem width:        1.00  
Each leaf:         2 case(s)



Detrended Normal Q-Q Plot of Mean\_F





## Appendix 2

### Questionnaire



**UNIVERSITI UTARA MALAYSIA**  
**06010 UUM SINTOK, Kedah Darul Aman, Malaysia**

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Dear Sir/Madam;

We are a group of researchers from Universiti Utara Malaysia. Currently, we are conducting a study on customer intention. The main objective of this study is to understand the customer intention to use e-money in Indonesia. Hence, we would really appreciate it if you could spend a few minutes (20 min) to answer the questions in this questionnaire. All information given will be kept confidential and will only be used for academic purposes.

The questionnaire is prepared in two languages (Bahasa Indonesia and English). Therefore, you could choose to answer in a language that you are most fluent. If you are unsure of the answer to the questions, please choose an answer that closely describes your feelings or opinion. We really hope that you could provide answers to all questions because each of questions is very important to the study.

Please return your completed questionnaire or send to [s95256@student.uum.edu.my](mailto:s95256@student.uum.edu.my). Your cooperation is greatly appreciated.

Sincerely,

Husnil Khatimah  
Email: [s95256@student.uum.edu.my](mailto:s95256@student.uum.edu.my)  
Handphone: 010-2940357

Assoc. Prof. Dr. Fairol Halim  
Email: [fairol@uum.edu.my](mailto:fairol@uum.edu.my)



**UNIVERSITI UTARA MALAYSIA**  
**06010 UUM SINTOK, Kedah Darul Aman, Malaysia**

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Yang terhormat Bapak/Ibu/Saudara/i,

Kami merupakan kelompok peneliti dari Universiti Utara Malaysia. Saat ini, kami sedang melakukan studi tentang niat pelanggan. Tujuan utama dari penelitian ini adalah untuk memahami niat pelanggan untuk menggunakan uang elektronik pada ponsel di Indonesia. Oleh karena itu, kami akan sangat menghargai jika Anda bisa meluangkan waktu beberapa menit (15 menit) untuk menjawab pertanyaan-pertanyaan dalam kuesioner ini. Semua informasi yang diberikan akan dijaga kerahasiaannya dan hanya akan digunakan untuk tujuan akademik.

Kuesioner disusun dalam dua bahasa (bahasa Indonesia dan Inggris). Oleh karena itu, Anda bisa memilih untuk menjawab dalam bahasa yang Anda paling lancar. Jika Anda tidak yakin dari jawaban atas pertanyaan-pertanyaan, silahkan pilih jawaban yang erat menggambarkan perasaan atau pendapat. Kami benar-benar berharap bahwa Anda dapat memberikan jawaban atas semua pertanyaan karena sangat penting untuk penelitian.

Sila kembalikan kuesioner Anda setelah selesai diisikan atau dapat menghubungi [s95256@student.uum.edu.my](mailto:s95256@student.uum.edu.my). Kerjasama Anda sangat dihargai.

Terima kasih,

Husnil Khatimah

Email : [s95256@student.uum.edu.my](mailto:s95256@student.uum.edu.my)

HP : 010-2940357

Assoc. Prof. Dr. Fairol Halim

Email: [fairol@uum.edu.my](mailto:fairol@uum.edu.my)

## BAGIAN A

### (Part A)

**Sebuah deskripsi singkat dari uang elektronik (e-money) untuk sistem pembayaran pada ponsel.**

sistem pembayaran uang elektronik di ponsel memungkinkan kita untuk melakukan transaksi pembayaran mikro lebih pada ponsel. Hal ini memungkinkan kita untuk memeriksa saldo rekening, transfer uang kita ke rekening lain, membayar tagihan kita, angkutan dan banyak hal lainnya. Kita bisa melakukan transaksi ini dari mal, rumah, kantor, sekolah, warnet, dll selama kita memiliki ponsel yang dapat didaftarkan untuk mengakses uang elektronik di ponsel.

***A brief description of e-money (electronic money) for mobile payment system.***

*e-money mobile payment system enables us to do micro payment transactions over the mobile. It allows us to check account balance, transfer our money to another account, pay our bills, transportation and many other things. We can do these transactions from mall, home, office, school, cafe, etc. as long as we have a mobile that can registered to access e-money.*

**Petunjuk: Silakan menjawab pertanyaan di bawah ini dengan melingkari pilihan Anda (1 = sangat setuju, 7 = sangat setuju tidak).**

***(Instruction: Please respond to questions below by circling your choice***

***(1=strongly agree, 7=strongly disagree)***

**Sangat setuju** \_\_\_\_\_ **Sangat tidak setuju**  
*Strongly Agree* \_\_\_\_\_ *Strongly Disagree*

No	Pertanyaan	1	2	3	4	5	6	7
1	Saya berniat untuk menggunakan uang elektronik di ponsel secara terus menerus di masa depan  <i>I intend to use e-Money in mobile phone continuously in the future</i>							

No	Pertanyaan	1	2	3	4	5	6	7
2	Saya akan merekomendasikan orang lain untuk menggunakan uang elektronik di ponsel <i>I will recommend others to use e-Money based in mobile phone</i>							
3	Saya akan sering menggunakan uang elektronik di ponsel di masa depan <i>I will frequently use e-Money in mobile phone in the future</i>							
4	Saya pasti akan tetap menggunakan layanan pada ponsel dalam pembayaran dengan transaksi uang elektronik. <i>I will definitively keep using advanced mobile services on e-money transaction payment</i>							
5	Saya berharap bisa menggunakan layanan pada ponsel dalam pembayaran dengan transaksi uang elektronik di masa depan juga <i>I expect to be using advanced mobile services on e-money transaction payment in the future as well</i>							
6	Saya berharap bahwa layanan pada ponsel dalam pembayaran dengan transaksi uang elektronik akan membuat segalanya lebih mudah di masa depan. <i>I expect that advanced mobile services on e-money transaction payment will make everything easier in the future</i>							
7	Saya juga berpikir bahwa harus menggunakan layanan pada ponsel dalam pembayaran dengan transaksi uang elektronik. <i>I think other should use advanced mobile services as well on e-money transaction payment</i>							

No	Pertanyaan	1	2	3	4	5	6	7
8	Menggunakan uang elektronik di ponsel akan memungkinkan saya untuk menyelesaikan tugas-tugas lebih cepat <i>Using e-Money in mobile phone would enable me to accomplish tasks more quickly</i>							
9	Menggunakan uang elektronik di ponsel akan meningkatkan kinerja ponsel saya <i>Using e-Money in mobile phone would improve my mobile phone performance</i>							
10	Menggunakan uang elektronik di ponsel akan meningkatkan produktivitas saya <i>Using e-Money in mobile phone would increase my productivity</i>							
11	Menggunakan uang elektronik di ponsel akan meningkatkan efektivitas saya di ponsel <i>Using e-Money in mobile phone would enhance my effectiveness on mobile phone</i>							
12	Menggunakan uang elektronik di ponsel akan membuat lebih mudah untuk melakukan pada ponsel <i>Using e-Money in mobile phone would make it easier to do on mobile phone</i>							
13	Saya akan menemukan uang elektronik berguna dalam ponsel <i>I would find e-Money useful in mobile phone</i>							
14	Belajar untuk mengoperasikan uang elektronik di ponsel akan mudah bagi saya <i>Learning to operate e-Money in mobile phone would be easy for me</i>							



No	Pertanyaan	1	2	3	4	5	6	7
15	Saya akan merasa mudah untuk mendapatkan uang elektronik di ponsel dalam melakukan apa yang saya ingin lakukan  <i>I would find it easy to get e-Money in mobile phone to do what I want it to do</i>							
16	Interaksi saya dengan uang elektronik di ponsel akan jelas dan dimengerti  <i>My interaction with e-Money in mobile phone would be clear and understandable</i>							
17	Saya akan menemukan uang elektronik di ponsel menjadi fleksibel untuk berinteraksi  <i>I would find e-Money in mobile phone to be flexible to interact with</i>							
18	Akan mudah bagi saya untuk menjadi terampil dalam menggunakan uang elektronik di ponsel  <i>It would be easy for me to become skillful at using e-Money in mobile phone</i>							
19	Saya akan menemukan uang elektronik di ponsel mudah digunakan  <i>I would find e-Money in mobile phone easy to use</i>							
20	Kemungkinan bahwa saya akan kehilangan uang jika saya menggunakan uang elektronik di ponsel  <i>There is chances that you stand to lose money if i use the e-Money in mobile phone</i>							
21	Menggunakan layanan uang elektronik di ponsel memfokuskan pada rekening saya yang berpotensi penipuan.  <i>Using an e-Money in mobile phone services subjects my checking account to potential fraud</i>							

No	Pertanyaan	1	2	3	4	5	6	7
22	<p>Persetujuan saya untuk menggunakan uang elektronik di ponsel akan mengakibatkan kerugian keuangan bagi saya.</p> <p><i>My signing up for and using an e-Money in mobile phone would lead to a financial loss for me</i></p>							
23	<p>Menggunakan layanan uang elektronik di ponsel memfokuskan pada rekening saya dengan risiko keuangan.</p> <p><i>Using an e-Money in mobile phone services subjects my checking account to financial risk</i></p>							
24	<p>Uang elektronik di ponsel mungkin tidak melakukan kerja dengan baik dan menciptakan masalah dengan kredit saya.</p> <p><i>The e-Money in mobile phone might not perform well and create problems with my credit</i></p>							
25	<p>Sistem keamanan yang dibangun ke dalam uang elektronik di ponsel tidak cukup kuat untuk melindungi rekening saya.</p> <p><i>The security systems built into the e-Money in mobile phone are not strong enough to protect my checking account</i></p>							
26	<p>Kemungkinan bahwa akan ada sesuatu yang salah dengan kinerja uang elektronik di ponsel atau tidak akan bekerja dengan baik</p> <p><i>There is likelihood that there will be something wrong with the performance of the e-Money in mobile phone or that it will not work properly</i></p>							
27	<p>Mengingat tingkat pelayanan yang diharapkan dari kinerja uang elektronik di ponsel, saya akan mendaftar untuk menggunakannya.</p> <p><i>Considering the expected level of service performance of the e-Money in mobile phone for me to sign up for and use it would be</i></p>							

No	Pertanyaan	1	2	3	4	5	6	7
28	Uang elektronik di ponsel mungkin tidak berfungsi dengan baik dan proses pembayaran tidak benar. <i>e-Money in mobile phone may not perform well and process payments incorrectly</i>							
29	Risiko uang elektronik di ponsel yang tidak diautoritaskan memiliki tingkat pengawasan proses pembayaran yang rendah <i>The risk of an unauthorized e-Money in mobile phone overseeing the payment process low</i>							
30	Risiko rendah terhadap penyalahgunaan informasi rahasia dari uang elektronik di ponsel saat menggunakan layanan pembayaran menggunakan ponsel. <i>The risk of abuse of confidential information of e-Money in mobile phone is low when using mobile payment services</i>							
31	Saya akan menemukan layanan uang elektronik di ponsel yang aman dalam melakukan transaksi pembayaran. <i>I would find e-Money in mobile phone services secure in conducting my payment transactions</i>							
32	Nama pengguna dan sandi uang elektronik di ponsel yang disahkan itu penting <i>The authorized username and password e-money on mobile phone are important</i>							
33	Saya tidak menyimpan nama pengguna dan sandi pada uang elektronik di ponsel <i>I do not save my login number and password on the e-money on mobile phone</i>							

No	Pertanyaan	1	2	3	4	5	6	7
34	<p>Saya tidak meninggalkan nama pengguna dan sandi di ponsel tanpa pengawasan, sementara terhubung ke layanan uang elektronik</p> <p><i>I do not leave on mobile phone unattended, while connected to the e-money services</i></p>							
35	<p>Kepercayaan mempengaruhi permintaan atas layanan uang elektronik di ponsel</p> <p><i>Trust affects the demand for e-money on mobile phone services</i></p>							
36	<p>Budaya dan orang disekitar yang mempengaruhi perilaku saya berpikir untuk harus menggunakan uang elektronik di ponsel</p> <p><i>Cultural and people who influence my behavior think that I should use e-Money in mobile phone</i></p>							
37	<p>Budaya dan orang yang dekat dengan saya berpikir bahwa saya harus mengirim uang dengan transaksi uang elektronik di ponsel.</p> <p><i>Cultural and people who are important to me think that I should e-Money in mobile phone</i></p>							
38	<p>Budaya, kerabat dan teman-teman telah membantu dalam penggunaan uang elektronik di ponsel</p> <p><i>The cultural, relatives and friends have been helpful in the use of e-Money in mobile phone</i></p>							
39	<p>Secara umum, lingkungan social dan budaya telah mendukung penggunaan uang elektronik di ponsel</p> <p><i>In general, the social and cultural environment has supported the use of e-Money in mobile phone</i></p>							

No	Pertanyaan	1	2	3	4	5	6	7
40	<p>Jika seorang kerabat berada dalam kesulitan keuangan untuk menggunakan uang elektronik di ponsel, saya akan membantu sesuai kemampuan saya</p> <p><i>If a relative were in financial difficulty to use e-money on mobile phone, I would help within my means</i></p>							
41	<p>Saya suka berbagi hal-hal kecil tentang uang elektronik di ponsel dengan tetangga saya</p> <p><i>I like sharing little things about e-money on mobile phone with my neighbour</i></p>							
42	<p>Ini mengganggu saya ketika orang lain menjalankan e-money pada ponsel lebih baik dari yang saya lakukan</p> <p><i>It annoys me when other people perform e-money on mobile phone better than I do</i></p>							
43	<p>Saya biasanya mengorbankan kepentingan pribadi saya untuk keuntungan penggunaan uang elektronik di ponsel dari keuntungan kelompok saya</p> <p><i>I usually sacrifice my self-interest for the benefit to use e-money on mobile phone of my group</i></p>							
44	<p>Saya tidak suka untuk tidak setuju dengan orang lain dalam kelompok saya tentang uang elektronik di ponsel</p> <p><i>I hate to disagree with others in my group about e-money on mobile phone</i></p>							

No	Pertanyaan	1	2	3	4	5	6	7
45	<p>Ketika orang lain melakukan transaksi uang lebih baik dari pada saya, saya bisa tegang dan terprovokasi</p> <p><i>When another people does transaction e-money on mobile phone better than I do, I get tense and provoked</i></p>							
46	<p>Ketika saya berhasil pada uang elektronik di ponsel, itu biasanya karena kemampuan saya</p> <p><i>When I succeed on e-money on mobile phone, it is usually because of my abilities</i></p>							
47	<p>Saya lebih suka secara langsung dan terus terang saat berdiskusi dengan orang-orang tentang uang elektronik di ponsel</p> <p><i>I prefer to be direct and forthright when discussing with people about e-money on mobile phone</i></p>							
48	<p>Saya menerima informasi yang cukup tentang uang elektronik di ponsel</p> <p><i>I receive enough information about electronic money in mobile phone</i></p>							
49	<p>Saya menerima informasi yang cukup tentang manfaat uang elektronik di ponsel</p> <p><i>I receive enough information about the benefits electronic money in mobile phone</i></p>							
50	<p>Saya menerima informasi yang cukup untuk menggunakan uang elektronik di ponsel.</p> <p><i>I receive enough information of using electronic money in mobile phone</i></p>							

No	Pertanyaan	1	2	3	4	5	6	7
51	Saya tidak pernah menerima informasi tentang uang elektronik di ponsel dari penerbit <i>I never received information about electronic money on mobile phone from issuers</i>							
52	Saya memiliki pendapat positif dalam uang elektronik di ponsel <i>I have positive opinion in electronic money on mobile phone</i>							
53	Saya pikir untuk penggunaan selanjutnya uang elektronik di ponsel adalah baik bagi saya <i>I think continuance usage electronic money on mobile phone is good for me</i>							
54	Saya pikir untuk penggunaan selanjutnya uang elektronik di ponsel adalah sesuai untuk saya <i>I think continuance usage electronic money on mobile phone is appropriate for me</i>							
55	Orang yang mempengaruhi perilaku saya berpikir bahwa saya harus menggunakan uang elektronik pada ponsel <i>People who influence my behavior think that I should use electronic money in mobile phone</i>							
56	Orang yang penting bagi saya berpikir bahwa saya harus menggunakan uang elektronik pada ponsel <i>People who are important to me think that I should use electronic money in mobile phone</i>							
57	Orang berpendapat bahwa saya harus menggunakan uang elektronik pada ponsel <i>People whose opinions I value think I should use electronic money in mobile phone</i>							

No	Pertanyaan	1	2	3	4	5	6	7
58	Orang yang dekat dengan saya berpikir bahwa saya harus menggunakan uang elektronik di ponsel  <i>People who are close to me think that I should use electronic money in mobile phone</i>							
59	Orang yang mempengaruhi keputusan saya berpikir bahwa saya harus menggunakan uang elektronik di ponsel.  <i>People who influence my decisions think that I should use electronic money in mobile phone</i>							
60	Saya akan dapat menggunakan uang elektronik di ponsel saya dengan baik ketika dalam transaksi pembayaran.  <i>I will be able to use the e-money in my mobile so well when in payment transaction</i>							
61	Menggunakan uang elektronik di ponsel sepenuhnya dalam kendali saya.  <i>Using e-money in mobile is entirely within my control</i>							
62	Saya memiliki sumber daya, pengetahuan, dan kemampuan untuk menggunakan uang elektronik di ponsel saya.  <i>I have the resources, knowledge, and ability to use e-money in my mobile</i>							
63	Saya yakin menggunakan uang elektronik di ponsel bahkan jika tidak ada seorang pun di sekitar untuk menunjukkan cara menggunakannya.  <i>I am confident of using electronic money in mobile phone even if there is no one around to show me how to use it</i>							



No	Pertanyaan	1	2	3	4	5	6	7
64	<p>Saya yakin menggunakan uang elektronik pada ponsel bahkan jika saya belum pernah menggunakannya sebelumnya.</p> <p><i>I am confident of using electronic money on mobile phone even if I have never used it before</i></p>							
65	<p>Saya yakin menggunakan uang elektronik di ponsel jika saya hanya memiliki petunjuk online untuk referensi.</p> <p><i>I am confident of using electronic money on mobile phone if I have only the online instructions for reference</i></p>							
66	<p>Sumber daya yang dibutuhkan untuk menggunakan uang elektronik pada ponsel tersedia untuk saya.</p> <p><i>The resources needed to use electronic money in mobile phone are available to me</i></p>							
67	<p>Saya bisa dengan mudah mendapatkan akses ke sumber daya yang diperlukan untuk menggunakan uang elektronik di ponsel</p> <p><i>I could easily get access to the resources that are needed to use electronic money in mobile phone</i></p>							
68	<p>Saya memiliki sumber daya yang cukup untuk menggunakan uang elektronik di ponsel</p> <p><i>I have sufficient resources to use electronic money in mobile phone</i></p>							
69	<p>Saya menggunakan uang elektronik pada ponsel karena keluarga saya menggunakannya.</p> <p><i>I use electronic money in mobile phone because my family uses it</i></p>							

No	Pertanyaan	1	2	3	4	5	6	7
70	Saya akan harus menggunakan uang elektronik di ponsel jika keluarga saya sudah menggunakannya.  <i>I will have to use electronic money in mobile phone if my family has already used it</i>							
71	Saya harus menggunakan uang elektronik pada ponsel karena keluarga saya berpikir saya harus menggunakannya.  <i>I have to use electronic money in mobile phone because my family thinks I should use it</i>							

## BAGIAN B

### (Part B)

Isilah data dibawah ini dengan benar dan berilah tanda lingkaran (O) pada jawaban pilihan anda. (Please fill out the data below correctly and mark the circle (O) on the answers of your choices)

1. Jenis Kelamin/ *genders* : a. Laki-laki/*male*

b. Perempuan/*female*

2. Umur/ *age* :

a. 18- 25 tahun (*years old*)

e. 41- 45 tahun (*years old*)

b. 26 - 30 tahun(*years old*)

f. 46 – 50 tahun (*years old*)

c. 31 - 35 tahun(*years old*)

g. 51 – 55 tahun (*years old*)

d. 36 - 40 tahun(*years old*)

h. 56 tahun keatas (*56 years old and above*)

3. Pendapatan perbulan/ *Income per month*:

a. 0 < IDR 500.000

b. IDR 500.000 s/d IDR 1.000.000

c. IDR 1.000.000 s/d IDR 1.500.000

d. > IDR1.500.000

4. Pendidikan/ *educations* : a. SD/ *elementary school*

b. SMP/ *juniorhigh school*

c. SMU/SMK/ *senior high school*

d. D1-D3/ *diploma*

e. S1/ *undergraduate*

f. S2/S3/ *postgraduate*

5. Pekerjaan/*jobs* : a. Pegawai Negeri/ *civil servant*

b. Pegawai Swasta/ *private employee*

c. Wiraswasta/ *Self Employed*

d. Pelajar/Mahasiswa / *student*

e. Lainnya/ *others*

6. Kecamatan /*District* :.....

7. Sebelum berpartisipasi dalam survei ini, apakah Anda tahu apa yang e-money untuk ponsel?/ *Before participating in this survey, did you know what e-money mobile is?*

a. Ya/ *Yes*

b. Tidak /*No*

8. Sebelum berpartisipasi dalam survei ini, apakah Anda tahu bahwa e-money untuk ponsel tersedia di Indonesia?/ *Before participating in this survey, did you know that e-money mobile is useable in mobile cellular in Indonesia?*

a. Ya/*Yes*

b. Tidak/*No*

9. Apakah Anda pernah menggunakan e-money untuk ponsel?/ *Did you use e-money mobile?*

a. Ya/*Yes*

b. Tidak/*No*

Jika ya, beri tanda centang (√) dari produk berikut telah anda gunakan?/ *If yes, give checklist in its product*

No	Penerbit/Issuers	Produk/Products	Centang/check (√)
1	PT. Indosat	Dompetku	
2	PT. Skye Sab Indonesia	Skye card	
3	PT. Telekomunikasi Indonesia	Flexy Cash	
		i-Vas Card	
5	PT. Telekomunikasi Selular	T-Cash	
5	PT. XL Asiata	XL Tunai	
6	PT. Finnet Indonesia	FinChannel	
7	PT. Artajasa Pembayaran Elektronis	Mynt	
8	Bank Permata Tbk	BBM Money	
9	PT. Nusa Satu Inti Artha	DokuPay	
10	PT. Bank CIMB Niaga	Rekening Ponsel	
11	PT. Bank Nationalnobu	Nobu e-Money	

10. Apa yang Anda terutama menggunakan ponsel untuk? (Berikan tanda centang pada pilihan jawaban anda)/ *What do you primarily use your mobile cellular? (Give checklist on your answer)*
- a. Surat Elektronik/ *E-mail*
  - b. Mengumpulkan informasi produk/ *Gathering Products' Information*
  - c. Membaca berita, olahraga / *Reading news, sports*
  - d. Membeli barang atau jasa/ *Buying goods or services*
  - e. Obrolan atau mengirim pesan/ *Chats or Meessage borads*
  - f. Melihat ke atas harga saham/ *Looking up stock quotes*
  - g. Pekerjaan rumah untuk sekolah/ *Homework for school*
  - h. Membeli dan menjual saham / saham/ *Buying and selling stocks/shares*
  - i. mencari Job/ *Job searches*
  - j. Banking secara online/ *Online Banking*
  - k. Pekerjaan / bisnis yang berhubungan/ *Work/business related*
  - l. Hanya berselancar/ *Just surfing*
  - m. Hiburan (games, musik, film)/ *Entertainments (games, music and movie)*
  - n. Meneliti hobi/ *Researching hobbies*
  - o. Lain/*etc*.....
11. Rata-rata, berapa banyak waktu per minggu yang Anda habiskan pada ponsel untuk SMS?/ *How much times per weeks do you spend for SMS?*
- a. Tidak ada/ *None*
  - b. 0 - 4 jam / *More than 0 to less than 5 hours*
  - c. 5 jam - 9 jam / *5 hours to less than 10 hours*
  - d. 10 jam - 14 jam/ *10 hours to less than 15 hours*
  - e. 15 jam -19 jam/ *15 hours to less than 20 hours*
  - f. 20 jam - 24 jam/ *20 hours to less than 25 hours*
  - g. 25 jam dan lebih/ *25 hours and more*

12. Rata- rata, berapa banyak waktu per minggu yang Anda habiskan di ponsel selain SMS?/ *On average, how much time per week do you spend in mobile cellular other than SMS?*
- a. Tidak ada/ *None*
  - b. 0 - 4 jam / *More than 0 to less than 5 hours*
  - c. 5 jam - 9 jam / *5 hours to less than 10 hours*
  - d. 10 jam - 14 jam/ *10 hours to less than 15 hours*
  - e. 15 jam -19 jam/ *15 hours to less than 20 hours*
  - f. 20 jam - 24 jam/ *20 hours to less than 25 hours*
  - g. 25 jam dan lebih/ *25 hours and more*



**SELESAI**  
**TERIMA KASIH**  

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**Universiti Utara Malaysia**