CHAPTER 2: LITERATURE REVIEW

Introduction

The earlier researches were done on the usage of EFTPOS which mainly focused on demographic and psychographic profile of ATM users (Ho et al., 1989; Wiley and Richard, 1974), and users' prior experience of using other new financial services and its relationship with EFTPOS adoption (Swinyard and Ghee, 1987). There were also studies on customer motivations, fears and behaviors that are associated with the EFTPOS services as well as the differences of consumers' risk perceptions among alternative payment methods. However, there is no specific research had been conducted in discussing the elements to increase the usage of different payment methods especially debit card.

The acceptance of credit versus debit cards

Besides cash, generally credit and debit card are the payment method that is used by most consumers when they do purchases in retail stores. Kim, Y.S. and Lee, M (2010) stated that traditionally, shopping has often been restrained to either cash or credit card. However, in some developing countries such as China; debit card is now used more often than credit at the EFTPOS, and increased acceptance and improved security have been important proximate drivers of recent growth. Shy and Tarkka (2002) stated that the acceptance of credit and

debit card to the consumers is equivalent where both cards enjoy similarly widespread acceptance as payments devices.

In order to understand the consumer's behavior, this research believes that it is necessary to define and differentiate the characteristics of credit cards versus debit cards from a consumer's perspective. According to the study by Ho (1985; 1991), some potential barriers to credit card usage via EFTPOS include: consumers' inherent resistance to change, loss of benefit of credit card float, unavailability of service when needed, fears of invasion of personal privacy, potential plastic card fraud and errors, lack of provision of leverage against a merchant or vendor in case of a dispute, and lack of adequate consumer awareness, education and participation. Due to may be for some of these reasons, many consumers would have a high perceived risk of the service and therefore seem rather reluctant to use credit card via EFTPOS for any retail purchases. American consumers may be surprised to know that debit card is a popular mode of payment there (Borzekowski et al. 2008) since it is only lately that Visa and MasterCard, pushed the use of debit cards in lieu of credit cards as a payment mode in the United States as well as their other markets including Malaysia. However, in other countries like China, debit card usage preceded credit card usage for some time and is more prevalent (Hu, 2006). Similar pattern could be observed in Western European countries that also use debit cards more than Americans (Hancock and Humphrey, 1998).

The different acceptance of payment would have different effects on a consumer's willingness to spend and this makes a research on payment methods is crucial especially for the card issuers or banks. However, consumer research on credit and debit cards has been always in favor of credit cards. Hirschman (1979) found differences in consumer purchase behavior based on credit card characteristics. Feinberg (1986) stated that credit cards can serve as a facilitating stimuli that encourages spending. He suggested that consumers become "conditioned" to spend. King and King (2005) showed that consumers are always better off using credit cards over debit cards. The authors suggest that such is true only if the card holder does not carry a balance or has not reached the credit limit for the card. However, King and King (2005) pointed that the rapid increase of debit card usage is due to two reasons:

1. The fact that even for individuals who do not carry a balance and therefore, do not pay interest, credit cards are not seen as a substitute for a debit card

2. Consumers' fear of credit because of how credit could affect their wallets and spending habits.

The latter conclusion is consistent with the findings of Drentea (2000) that higher ratio of credit card debt to income increases anxiety.

Continuous usage on selected payment method

Marketers are also interested in focusing on continuous usage in addition to payment mode choice. User's satisfaction would be a determinant for a repeated choice and usage of a particular payment mode. Churchill and Suprenant (1982) defined customer satisfaction as a comparison of the rewards and costs associated with the use or purchase of a good or service in relation to the anticipated consequences of the use or purchase. Besides, they suggested that satisfaction is related to the size and direction of the disconfirmation of expectations experience. Thus, in addition to the leading role of expectations (Prakash and Lounsbury, 1984), performance (Churchill and Suprenant, 1982) and desires (Spreng et al., 1996) are also determinants of customer satisfaction.

Usage of debit card on EFTPOS is considered a payment service to the consumers. Bitner and Hubert (1994) suggested that customer satisfaction of services consists of two elements:

1. Service encounters satisfaction
2. Overall service satisfaction.

Bitner and Hubert (1994) suggested that a cumulative positively satisfying service encounter creates a more global feeling of satisfaction. High levels of customer satisfaction have been linked to behavioral intentions including attitude change (Bolton and Drew, 1991), repeat purchase intentions, and customer

loyalty (Boulding et al., 1993; Ryan and Ployhart, 2003). A metric to gauge satisfaction would be the rate of acceptance of the payment mode. The customer satisfaction literature indicates that one of the effects of satisfaction is positive word-of-mouth (File and Prince, 1992). The positive word-of-mouth would consequently lead to a higher acceptance rate. On the other hand, dissatisfaction would lead to negative word-of-mouth and eventually, a slower acceptance rate. This conclusion is also appeared in the research on diffusion. Gatignon et al. (2001) found that as social interaction increased, the propensity to imitate also increased.

Malaysian banks that issue debit card believe that a reward program could boost the card usage as well as consumers spending using their debit card. Even though card issuers have mainly relied on rewards programs as their main strategy to increase usage, there is scarce evidence on the effectiveness of these programs (Santiago and José, 2011). Besides, there were only four studies that have been done to examine the effects of payment card rewards on consumer choice of payment instruments and empirically prove that rewards program could encourage consumers to increase the use of debit cards. Even the research done by Santiago and José has stated that rewards are mainly being used for competing market shares between card issuers, instead of getting more people to use the payment cards. All the studies done previously regarding the effect of rewards program were analyzing different markets (US market in Ching and Hayashi, 2010; Australia in Simon et al. (2010); and Spain in Santiago

and José, 2011), the three papers were complementing each other and have policy implications. It has been stated that the regulations that aim to reduce the fees that merchants' banks pay to issuers' bank (interchange fees) may have implications on the quantity and quality of rewards.

There was also research that claimed reducing interchange fees and rewards enhanced efficiency in payment systems because rewards are used to entice consumers to use payment methods that are more costly to society (credit cards are more costly than debit cards). Other studies argued that reducing rewards deteriorates efficiency because it makes consumers use more costly payment instruments, such as cash, rather than less costly payment cards. However in the study done by Santiago and José (2011), the research examined empirically both the effects of incentive programs on payment choice, the impact on the substitution of cash by cards and they concluded the study by stating that rewards does serve to be more effective for debit cards and stimulate the consumers usage.

The technology adoption

The technological aspects when designing an electronic payment system are the system's ability to adapt to users' changing needs, the effectiveness and security of each transaction, the degree of compatibility among other payment systems, and the complexity in adapting to the system all need to be taken into account (Hsiao et al., 2002).

The rate of technologies or innovations adoption for different countries varies according to the characteristics of these countries (Takada and Jain, 1991). Absent regulatory conditions, rapid acceptance of the innovation may be seen as increasing satisfaction with the product (Rust and Zahorik, 1993). On the contrary, a slow rate of adoption may be a signal that the product has not been effectively communicated to the target population. Worse still, it may be a sign that the product does not meet the needs of the target market.

Santomero and Seater (1996) have stated in their study that the large dependency on consumers, merchants and debit card issuers determine the diffusion of electronic payment media. The rate of diffusion as a function of innovation's characteristics (i.e. relative advantage, compatibility, simplicity, observability, and trialability) and the adaptor's characteristics (e.g., cultural, economic, demographic, and psychographic variables) is discussed in the diffusion theory. For example, Abdul-Muhmin (1998) showed that there were significant differences in attitudes and usage of EFTPOS between genders and among cultural backgrounds and income levels. The hypotheses of this research are made from the critical factors that were believed would influence the level of adoption as well as the usage intention at a different extents. Hence, consumers' behavior towards electronic payments especially debit card would have an impact upon the decision to use such systems. "Adoption" is a term that is hard to explain, since it is based on a person's unpredictable behavior. However, this behavior can be explained by behavioral theories such as the theory of reasoned

action (TRA) (Fishbein and Ajzen, 1975) and the subsequent technology acceptance model (TAM); (Davis, 1989; Bagozzi et al., 1992), TAM2 (Venkatesh and Davis 2000) and UTAUT (Venkatesh et al. 2003).

There are various frameworks that could explain the consumers" intention to use new technology. Among those widely accepted frameworks which have been developed includes the:

1. Theory of Reason Action, TRA (Fishbein & Ajzen, 1975)
2. Technology Acceptance Model, TAM (Davis, 1989)
3. Theory of Planned Behavior, TPB (Ajzen, 1991)
4. Diffusion of Innovation, DOI (Rogers, 1995)
5. Technology Acceptance Model 2 (Venkatesh & Davis, 2000)
6. Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003).

Jeyaraj, Rottman, & Lacity (2006) commented that DOI and TAM are the two common frameworks used in the association with technology adoption studies. However, this research would be using Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003) to discuss the consumer acceptance and intention to use the debit card technology.

Technology adoption lifecycle

Technology adoption life cycle (Moore, 1999 and Rogers, 2003) stated that people adopt technology differently. Some individuals adopt new technologies more naturally than others (Leonard-Barton and Deschamps, 1988). Five different personalities are described in the technology adoption cycle:

1. Innovators

2. Early Adopters

3. Early Majority
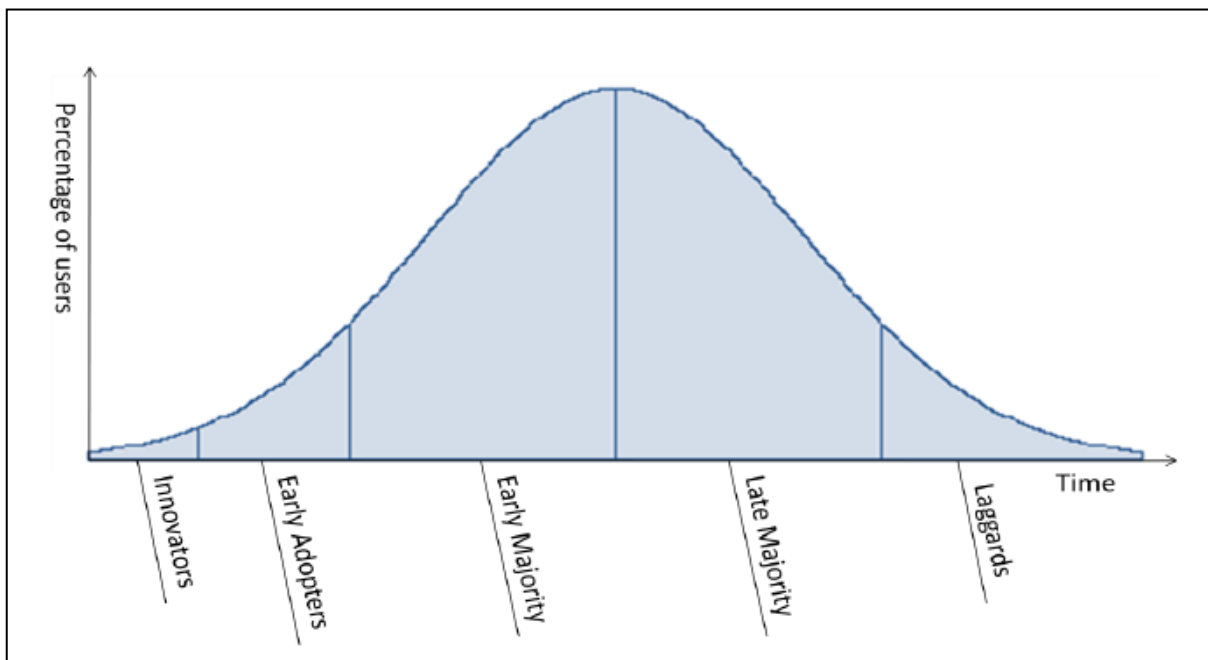
4. Late Majority

5. Laggards.

Figure 7: Technology Adoption Life Cycle (Moore, 1999)

The people that seek for new opportunities and are not difficult to try out new things are called innovators. These innovators are usually technologists, which mean their interest is normally focused on the new technology (Moore, 1999). Early Adopters adopts technology at an early stage, open minded to new technologies and try to find benefits with technology. The Late Majority is the consumers that wait for a technology to become something common before adopting it. Laggards are people that are not interested in new technology; conservative and usually resist to change. In technological arena, the majority of consumers are from Early Majority and Late Majority.

However, when discussing about the payment method users, the consumers or the debit cardholders could not be categorized as only from Early Majority and Late Majority, as there are consumers that willing to adopt the new payment method technology such as debit card and there are still group of cardholders that still reluctant to use this new technology.

Individual adoption models

Relevant models and frameworks for adopting debit card technology as a new payment method are reviewed from an individual consumer's point of view. The theories may developed and used for different purposes but it is still applicable to be used in discussing the adoption of debit card and its usage intention since we consider debit card as one of technology in electronic payments. The consumer's

knowledge, belief and readiness are a crucial factor when implementing new technologies in electronic payments.

Most of the complex problems in the implementation process are related to human factors. This is one of the reasons why individual technology adoption models play an important role and are widely researched. There are many theories and models that describe the individual technology adoption. The most cited and used traditional adaption models when implementing new technologies in an organization are: Diffusion of innovations, The Theory of Reasoned Action, the Technology Acceptance Model (TAM), the Theory of Planned Behavior, Social-Cognitive Theory, and the Unified Theory of Acceptance and Use of Technology (UTAUT). The most influential model has been TAM and its extended version TAM 2 (Gallivan, 2001). There is no commonly accepted adoption model, all of the models mentioned above, are used. Researchers choose a model and modify it, which has led to a number of variations of each model and research being farther away from a commonly accepted model (Benbasat and Barki, 2007). UTAUT is used in the empirical part of this research and are therefore described in the following sections.

Technology Acceptance Model (TAM)

One of the most used and cited implementing theories is the Technology Acceptance Model (TAM), shown in Figure 8 (Davis, 1989 and Davis et al. 1989). This model was developed by Davis from Ajzen and Fishbein's Theory of

Reasoned Action (TRA), which explains an individual's actions when adopting a new technology. TAM describes how and what factors contribute to the individual's behavioral attitude changes when implementing new technologies. In Technology Acceptance Model, the fundamental factors that influence consumers' attitudes towards using debit card and intention to use are Perceived Usefulness and Perceived Ease of Use. Perceived Usefulness is how consumer feels that the technology contributes to make the payment activity easier and improves the whole experience.
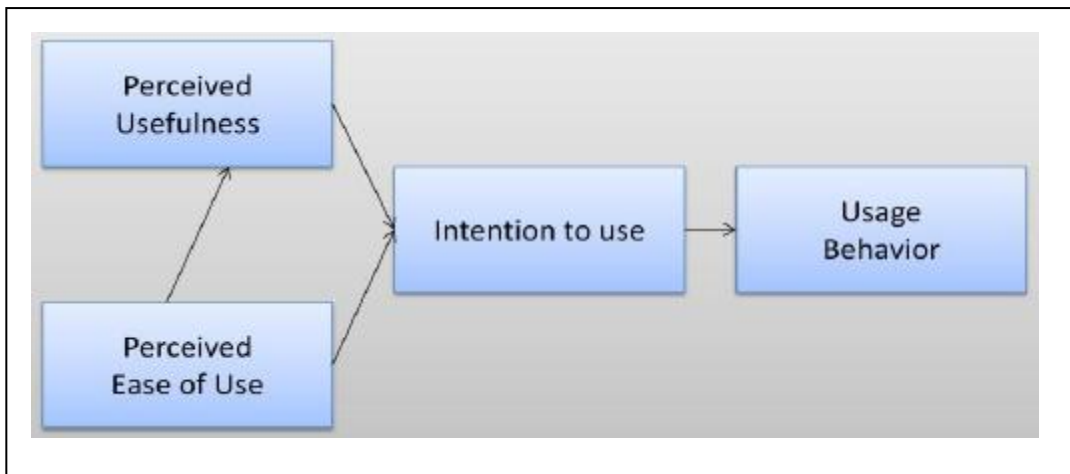

Figure 8: Technology Acceptance Model (Venkatesh and Davis, 2000)

Perceived Ease of Use measures the consumer efforts that have to put forth to use the technology. They are both influenced by external variables. Venkatesh and Davis (2000) extended the model with explanations on what contributes to Perceived Usefulness and Perceived Ease of Use. The new model is called TAM 2 (Venkatesh and Davis 2000 and Chuttur, 2009).

Unified Theory of Acceptance and Use of Technology (UTAUT)

Venkatesh et al. (2003) proposed The Unified Theory of Acceptance and Use of Technology (UTAUT). The model has compared and combined eight previous adoption theories through empirical studies; the Theory of Reasoned Action, Technology Acceptance Model, Motivational Model, Theory of Planned Behavior, Combined TAM and TPB, Model of PC Utilization, Innovation Diffusion Theory, and Social Cognitive Theory. UTAUT is used in this research in the analysis of the gathered data. The results of this research are organized according to the factors affecting both Behavioral Intention and Use Behavior.
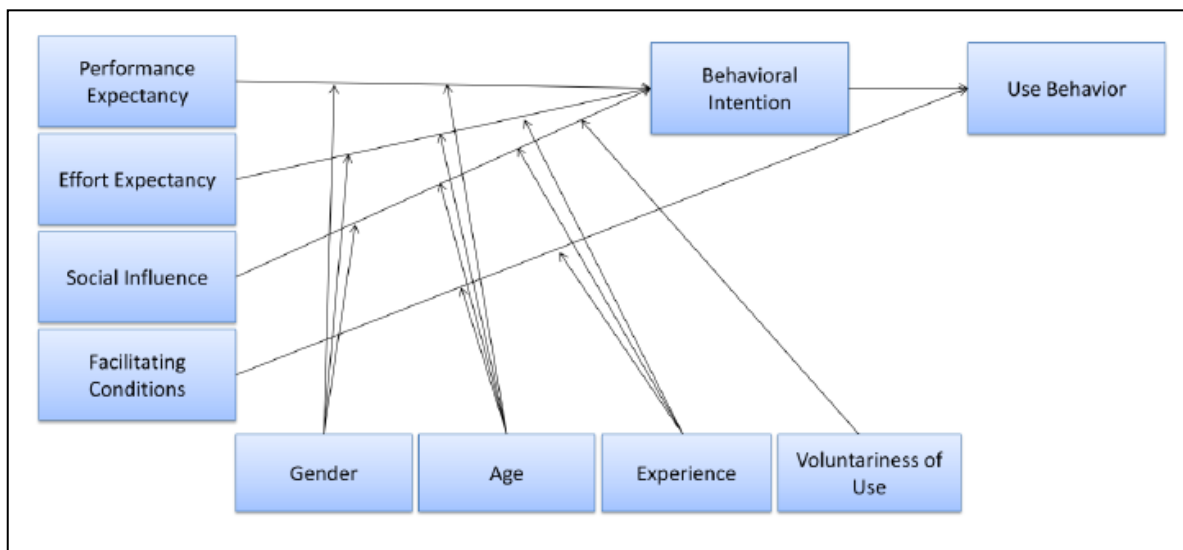

Figure 9: The Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003)

According to UTAUT, there are three forces which influence Behavioral Intention; Performance Expectancy, Effort Expectancy, and Social Influence. Two

determinants affect actual use: Behavioral Intention and Facilitating Conditions. The model also has four moderators that have an effect on how strong the determinants would be perceived. The four key moderators are Gender, Age, Experience, and Voluntariness of Use.

Venkatesh et al. (2003) define Performance Expectancy as how the user perceives the system to improve performance and argues that this is the most influential force on behavioral intention. Both gender and age affect Performance Expectancy. Effort Expectancy is how much time and effort that consumer thinks would be spent using the technology. This can be compared to the TAM models Perceived Ease of Use. As in the TAM model, experience and the cardholder's knowledge about debit card have a substantial impact on the perceived Effort Expectancy.

Social Influence is what consumer considers others to think about the technology. When debit card is used voluntarily, the effect of Social Influence on Behavioral Intention is minimal. Over time, when the cardholder becomes more used to the technology, the effect of Social Influence diminishes. Social Influence is important in the beginning of adoption when the newly implemented technology is mandatory. According to Venkatesh et al. (2003), women are more sensitive to the opinions of others.

Performance Expectancy, Effort Expectancy and Social Influence affect the Behavioral intention to use. Facilitating Conditions and Behavioral Intention have

together a great impact on actual use. Facilitating Conditions is the environment where the technology is used. It includes use of EFTPOS to accept the debit card and the available support.

Phases of adoption

Rogers' (2003) model of Diffusion of Innovations has been used in many different circumstances ranging from agricultural tools to innovations in organizations (Venkatesh et al., 2003). It has been adapted to better suit individual adoption of technologies by Moore and Benbasat (1991). The original theory consisted of five attributes that influence the adoption of a new innovation: Relative Advantage, Compatibility, Complexity, Observability, and Trialability (Rogers 2003). The modified theory for adopting information technologies (Moore and Benbasat, 1991) includes seven attributes that influence the adoption of an innovation: Compatibility, Relative Advantages, Ease of Use, Result Demonstrability, Image, Visibility, Trialability, and Voluntariness. Rogers (2003) also describes five phases that an instructor goes through when adopting a new technology. Rogers calls this the innovation-decision process:

1. Knowledge   **4. Implementation**

2. Persuasion   **5. Confirmation**

3. Decision

The process starts when the individual gets information about the innovation. Rogers (2003) describes this with the word Knowledge. The second phase of the process, Persuasion, occurs when an individual forms an attitude, positive or negative, towards the innovation. Already in this stage the technology becomes favorable or unfavorable for the user. In the third step, the individual decides if he or she wants to use the innovation or not. The fourth phase is Implementation, and in this phase the innovation is put into practice. In the last phase, Confirmation, the individual strengthens his or her decision to adopt the product, reduce the use of the product, or discontinue use of the product (West et al., 2006).

West et al. (2006) identified patterns in the fourth phase, Implementation, of Rogers' Diffusion of Innovations model when implementing it to education. The five proposed phases of implementation are as follows:

1. **Experimentation**   4. **Increased Comfort Level**

2. **Technical Challenges**   5. **Adaptation**.

3. **Integration Challenges**

The first phase of Implementation is Experimentation. When adopting the innovation the user starts to experiment with the technology. The Experimentation is usually self learning. The user tries to find out what the different applications do. Both Rogers (2003) and West et al. (2006) found out

that a user does not start using all features of a technology in the beginning of adoption. This is called trialability as cardholder test the technology with a couple of attempts. After the early experimentation, the cardholder would face some Technical Challenges. The Technical Challenges include usage of time and how effective the innovation is. After overcoming the Technical Challenges, the individual would face Integration Challenges. Most individuals know how to use new devices or learn to use them fast, but they don't know how to integrate them in to a daily life context. The fourth phase is naturally Increased Comfort Level after the challenges have been overcome. In the last phase, with an Increased Comfort Level, the card issuers can adjust the innovation and a re-invention of some features occurs. The phases in the implementation process do not have to happen in a linear order, they can also overlap each other.

After the implementation process, the user makes a decision of whether to continue using the new technology. The decision is based on how well the implementation process proceeds and how the person adopts the new technology, in this case the usage of debit card. West et al. (2006) found three different outcomes that the user decides to do after the implementation process: continuation, reduction, or discontinuation.

The continuation decision means that the user finds the technology useful and starts using consistently. Reduction implies that the user chooses to use the technology but only when necessary. The user does not feel committed to the

technology and can try new ones. The third option, discontinuation, is that the user stop using the debit card.

In summary, the previous studies were done focusing on the consumer experience of using other new financial services and its relationship (Swinyard and Ghee, 1987) and also their risk perceptions among alternative payment methods. Understanding the characteristics of credit cards versus debit cards from a consumer's perspective (Ho, 1985; 1991) is important in studying the consumer adoption to these two methods of payment. Consumer experience is related to satisfaction level of the individual customer which it defines a comparison of rewards and costs associated with the use or purchase of a good or service in relation to the anticipated consequences of the use or purchase (Churchill and Suprenant, 1982). This research takes rewards program as one of the subjects since there is limited evidence on the effectiveness of these rewards programs in increasing the usage of debit card (Santiago and José, 2011). The system's ability to adapt to users' changing needs, the effectiveness and transaction security, the degree of compatibility among other payment systems, and the complexity of system adaptation (Hsiao et al., 2002) are the important aspects when designing an electronic payment facility. The behavioral theory of UTAUT combines eight previous adoption theories which include the forces that influence Behavioral Intention and determinants that affect the actual use of debit card.