

**FACTORS AFFECTING ONLINE BANKING ADOPTION BASED ON
UNIFIED THEORY OF ACCEPTANCE AND USE OF TECHNOLOGY
(UTAUT)**

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**FACTORS AFFECTING ONLINE BANKING ADOPTION BASED ON
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(UTAUT)**

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To my beloved family and friends

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ABSTRACT

Internet revolutions have brought a huge impact on banking industry. It had also created a novel way for handling banking transactions via online banking channel. There was approximately 23.6% increase in online banking subscribers in Malaysia since 2005 to 2010. However, past literature reviews claimed that online banking was not favorable in Malaysia. Hence, this study attempts to examine the factors that affecting the intention to adopt online banking based on unified theory of acceptance and use of technology (UTAUT). Other than the four constructs from UTAUT, one additional construct has been added into this model for the purpose of this study. The five determinants were performance expectancy, efforts expectance, facilitating conditions, social influence and personal innovativeness in IT were examined in this study. A total of 400 questionnaires were distributed among UTM students, where respondents were randomly selected. Principle component analysis and Cronbach's alpha were used to test the validity and reliability of the measurement scale. Pearson correlation was employed to examine the relationships between variables, and multiple regressions were used to test the hypothesis of this study. Regression model in this study found that 48.5% of the variance had been significantly explained by the predictors. As a conclusion, the findings of this study revealed that all the factors except facilitating conditions are significantly affecting the intention to adopt online banking.

ABSTRAK

Revolusi internet telah membawa kesan yang besar terhadap bank industri. Internet telah memberikan suatu cara yang baru and senang untuk megendalikan transaksi perbankan melalui saluran perbankan internet. Dari tahun 2005 hingga 2010, pengguna perbankan internet telah bertambah sebanyak 23.6%. Walau bagaimanapun, kajian terdahulu menyatakan perbankan internet di Malaysia tidak menggalakkan. Maka, kajian ini bertujuan untuk mengkaji factor-faktor yang mempengaruhi keinginan pengguna untuk menggunakan perbankan internet berdasarkan *Unified theory of acceptance and use of technology* (UTAUT). Selain daripada empat dimensi daripada UTAUT, satu dimensi tambahan telah ditambah ke dalam model ini bagi tujuan kajian. Lima faktor tersebut ialah dimensi berguna (performance expectancy), dimensi senang guna (efforts expectance), kemudahan capaian internet (facilitating conditions), kesan sosial (social influence) and inovasi individu dalam informasi teknologi (personal innovativeness in IT). Sebanyak 400 borang soal-selidik telah diedarkan di kalangan pelajar UTM yang mana teleh diedar secara ramah. Analisis komponen utama dan Cronbach alpha telah digunakan untuk menguji kesahihan dan kebolehpercayaan skala pengukuran tersebut. Korelasi Pearson digunakan untuk menguji hubungan di antara pembolehubah, dan analisis regresi digunakan untuk menguji hipotesis kajian ini. Analisis regresi dalam kajian ini menunjukkan bahawa 48.5% varisi pembolehubah bersandar boleh diterangkan oleh pembolehubah tidak bersandar. Kesimpulannya, kajian ini menunjukkan bahawa semua faktor kecuali kemudahan capaian internet (facilitating conditions) mempengaruhi keinginan pengguna untuk menggunakan perbankan internet.

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CHAPTER I

INTRODUCTION

This chapter provides the background of study, overview of online banking in Malaysia, identify the problem statement, objectives of study, scope of study as well as the significant of study. Finally, the organization of study is provided before end of this chapter.

1.1 Background of Study

Information technology (IT) revolution is no longer something new to be heard in the 21st century. As we can see, most of our daily activities nowadays have a significant relationship with information technology. One of the most important IT applications is internet. The rapid growth of internet has become a potential medium for electronic commerce (Crede, 1995). E-commerce may help to increase business opportunities, reduce cost and lead time and provide more personalized service to the consumers (Turban *et al.*, 2008). Thus, a lot of business opportunities have commenced from internet.

Obviously, the widespread of internet had bought a huge impact in the banking industries. It has given birth to online banking which is a new and increasingly famous banking way among customer nowadays (Mukherjee and Nath, 2003). Internet has

served the banking industries an alternative way to reach their customers instead of traditional brick and mortar branches. Nehmzow (1997) and Seitz and Stickel (1998) claimed that internet is considered as a strategic weapon since it will overturn the delivery and operation way of banks as well as the way to compete against other banks, especially when there is a diminishing of competitive advantages in traditional branches networks. Birch and Young (1997) and Lagoutte (1996) further claimed that customers nowadays are more demanding than before; thus, traditional retail may not be able to fulfill their needs anymore since they are looking for a new level of convenience and flexibility. Therefore, to expand without geographical constraints and meet the customers need, online banking is one of the popular services that have been adopted by bank and offered to customers.

Online banking allows customers to perform their financial transactions electronically via the bank's Web site, which is a more convenience way since it is 24 hours and 365 days function. Before online banking was introduced, customers may only be able perform their financial transaction at bank branches, telephone or automated teller machine (ATM), but online banking has bring in a new opportunities to bank to stay connect with their customers. Apart from that, online banking enhances the relationship between customers and banks as well (Rotcakitumnuai and Speece, 2005).

Furthermore, adoption of online banking is one of the important costs saving instrument as well. It could be a replacement of manual service functions provided by bank employees, and eliminate the brick and mortar investment required of financial institutions (Dandapani *et al.*, 2008). Carrington *et al.* (1997), Kassim and Abdulla (2006) and Mols (2002) stated that online banking is more effective and efficient in cost reduction and satisfaction of customers' needs, which could achieve competitive advantages. By implementing online banking, banks are expected to reduce operating cost, strengthen relationship with customers and enable business diversification (Carlson *al et.*, 2001 and Centeno, 2003). Undoubtedly, the advantages of internet banking have

prompted banks to redefine their strategic in order to sustain and achieve competitive advantages.

It can be observed that online banking has been accepted pleurably. Nevertheless, technology acceptance always draws the attention of researchers to study in depth in order for further improvement or enhancement as well as good acceptance among users. As Davis and Venkatesh (1996) mentioned, it will only bring full benefits to organization if the users are willingly to accept an information system. The level of acceptance can actually affect the willingness of a user to make changes in their practices and spend time and put effort to adopt an information system (Succi and Walter, 1999). Thus, Davis (1993) viewed user acceptance as a crucial factor in deciding the success or failure of an information system project. This study attempts to use Malaysia online users as a sampling frame work to find out the influential determinants to online banking adoption.

1.2 Online Banking in Malaysia

Pang (1995) claimed that electronic revolution in Malaysian banking started since 1970s. In 1981, Automated Teller Machines (ATMs), the first visible form of electronic innovation was launched in Malaysian banking industry. The presentation of ATMs could be considered as a good substitution for brick and mortar bank branches, it extends the financial connection between bank and customer with minimizing the geographical location and time constraints.

By utilizing Automated Voice Response (AVR) Technology, telebanking was introduced in Malaysia in the early 1990s. Telebanking allows bank to have another delivery channel via telecommunications devices. However, the rapid innovation and advancement in telecommunications and information technology has culminated banks offerings their services through PC banking or desktop banking, which is also known as

online banking. Researcher had found PC banking or desktop banking was more popular among banks' corporate customers rather than retail customers (Guru *et al.*, 2002).

Bank Negara Malaysia (BNM) or Central Bank of Malaysia finally approved domestic bank to provide full range of services over the internet effectively from 1st June 2000. On June 15, 2000, Maybank, the largest domestic bank became the first bank to offer online banking services in Malaysia. The basic online services offered include bill payment, funds transfer, credit card payment, account detail as well as transaction history. The second domestic bank, which offered online banking services, was Hong Leong Bank. It commenced its internet banking operations known as "EC-banking" in December 2000. Subsequently, the Southern Bank had followed the trend by offering online banking services as well. Alliance Bank's internet banking service was launched in June 2001 and Bank Islam was also launched its internet banking in 2003. In between 2000 and 2007, AmBank, Bumiputra Commerce, Public Bank, RHB Bank, Citibank, HSBC Bank, OCBC Bank and UOB Bank started to launch its online banking services in Malaysia. Affin Bank BHD is poised to catch up with the rest of the online world. The bank has finally launched affinOnline.com, its very own internet based retail banking facility on 1st Jan 2009, followed by Bank Simpanan Nasional offered internet banking services to its clients on 2nd Dec 2009. Subsequently, AmIslamic Bank, Bank Kerjasama Rakyat, Bank Muamalat, CIMB Bank, EON Bank, RHB Islamic Bank, Al Rajhi Banking & Investment Corporation, Bank of America Malaysia, Bank of Tokyo-Mitsubishi UFJ, Deutsche Bank (Malaysia), HSBC Amanah Malaysia, J.P. Morgan Chase Bank, Kuwait Finance House (M) and Standard Chartered Bank Malaysia launched internet banking services in Malaysia between 2008 and 2011 (www.bnm.gov.my). Generally, most of the online banking services offered by bank are compatible to each others. Nevertheless, internet banking services in Malaysia is only allowable for bank licensed under the Banking and Financial Institution Act 1989 (BAFIA) and Islamic Banking Act 1983 (Mohamad Rizal *et al.*, 2007).

Table 1.1 shows banks with online banking services in Malaysia and Table 1.2 shows the milestones of internet services in Malaysia.

Table 1.1: Banks with Internet Services in Malaysia

1. Affin Bank Berhad
2. Al Rajhi Banking & Investment Corporation (Malaysia) Berhad
3. Alliance Bank Malaysia Berhad
4. AmBank (M) Berhad
5. AmIslamic Bank Berhad
6. Bank Islam Malaysia Berhad
7. Bank Kerjasama Rakyat Malaysia
8. Bank Muamalat Malaysia Berhad
9. Bank Simpanan Nasional
10. Bank of America Malaysia Berhad
11. Bank of Tokyo-Mitsubishi UFJ (Malaysia) Bhd
12. CIMB Bank Berhad
13. Citibank Berhad
14. Deutsche Bank (Malaysia) Berhad
15. EON Bank Berhad
16. Hong Leong Bank Berhad
17. HSBC Amanah Malaysia Berhad
18. HSBC Bank Malaysia Berhad
19. Malayan Banking Berhad
20. OCBC Bank (Malaysia) Berhad
21. Public Bank Berhad
22. RHB Bank Berhad
23. RHB Islamic Bank Berhad
24. Standard Chartered Bank Malaysia Berhad
25. United Oversea Bank (Malaysia) Berhad
26. Kuwait Finance House (M) Berhad
27. J.P. Morgan Chase Bank Berhad

Source Bank Negara Malaysia (2011)

Table 1.2: Milestones of Internet Services in Malaysia

Years	Events
1981	The introduction of Automated Teller Machines (ATMs).
Early 1990's	Telebanking was introduced.
1 st June 2000	Malaysian government provided the legal framework for domestic banks to offer internet banking services.
15 th June 2000	Maybank became the first bank to launch the country's first internet banking services.
December 2000	Hong Leong Bank commenced its internet banking operations known as 'ec-banking'.
Nil	Southern Bank offers its internet banking via www.sbbdirect.com.my .
June 2001	Alliance Bank internet banking service was launched in June 2001.
2003	Bank Islam launched its internet banking.
Between 2000 and 2007	Ambank, Bumiputra Commerce, Bank Islam, Public Bank, RHB Bank, Citibank, HSBC Bank, OCBC Bank, UOB Bank launched its internet banking services in Malaysia.
1 st Jan 2009	Affin Bank Bhd launched affinOnline.com , its very own internet-based retail banking facility.
2 nd Dec 2009	Bank Simpanan Nasional (BSN) offered internet banking services to its clients.
Between 2008 and 2011	AmIslamic Bank, Bank Kerjasama Rakyat, Bank Muamalat, CIMB Bank, EON Bank, RHB Islamic Bank, Al Rajhi Banking & Investment Corporation, Bank of America Malaysia, Bank of Tokyo-Mitsubishi UFJ, Deutsche Bank (Malaysia), HSBC Amanah Malaysia, J.P. Morgan Chase Bank, Kuwait Finance House (M) and Standard Chartered Bank Malaysia launched internet banking services in Malaysia.

1.3 Problem Statement

Moving towards an industrialization nation, Malaysia has aware of technology application. With the proliferation of internet expansion and computer usage, lifestyles of consumer have been changed, more and more transactions are doing through the

online potential. The government tax rebate incentives for the purchase of a personal computer every five years has further reinforced the phenomena of computer usage and encourage the online transaction. In order to be compatible in the e-marketplace, it was ideally for Malaysia's bank developed online banking in the mid of 2000.

In the year of 2010, there are approximately 16.9 million of internet users in Malaysia corresponding to a penetration of rate of 64.4 percent and a growth rate across the period 2000 to 2010 of 356.8 percent (www.internetworldstats.com/stats3.htm#asia). According to Telekom Malaysia (TM) (2007), in the next coming five years Malaysia's internet subscribers are going to reach 10 million. Malaysia has the growing trend of internet users in the last three years. There is about 0.6 million of subscribers increased in 2005 compared to 2004, and it was almost close to 5 million of subscribers in Malaysia in 2006 (www.internetworldstats.com/asia/my.htm). Subsequently, this encouraging growing trend will provoke the opportunities for increasing the adoption of online banking in Malaysia. According to Bank Negara Malaysia (BNM) (2010), there is 9.4 million of internet banking subscribers in Malaysia in the year of 2010, which reached 33.4 penetration rates to population. It was a 23.6% increase since 2005 to 2010.

However, although all the tendency has been observed, unfortunately, prior studies shown the adoption of online banking in Malaysia are still in the stage of infancy (Ndubisi and Sinti, 2006) if compared to U.S or European. Okunola (2008) also found that the usage of internet banking is increasing in Asian countries but it is still slower than estimated (ACNielsen, 2002). As noted by Nor Linda and Manjit Singh (2004), out of 35 percent (8.6 million) of internet users, less than two percent of customers performed online banking services in Malaysia. A similar study in M-commerce adoption done by Sreenivasan and Mohd Noor (2010) in Malaysia, also found that Malaysian less committed to such online application despite of its benefits. These findings have shown contradict to the internet banking subscribers increasing rate. Since there is an increase in internet banking subscribers but what are the factors that discourage the adoption of online banking?

A review of literature showed that numerous of research regarding the online banking adoption has been carried out by researcher in different countries, and there are few theories has been discussed and adopted broadly in technology acceptance researches as well. However, despite the usefulness or frequency of these theories been revised, researchers are still interesting to study, extend or modify these theories upon the rapid change in technology or environment (Kripanont, 2007). And more importantly, the results of each research are not necessary to be consistent and applicable to all organization or countries.

In order to answer the questions aroused above, this study keen to identify factors that will affect online banking adoption in Malaysia context. This study is based on unified theory of acceptance and use of technology (UTAUT), a theory which is believed to be new, less adopted and validated by numerous of studies (Green, 2005).

1.4 Objectives of Study

The objectives of research are as follow:

- i) To identify factors that will influence the intention of online banking adoption.
- ii) To determine the relationship between performance expectancy, efforts expectancy, social influence, facilitating conditions, and personal innovativeness in IT towards intention of online banking adoption.
- iii) To examine the most influential factors that will influence the intention of online banking adoption.

1.5 Research Questions

The primary objective of this study is to find out the factors that will influence the adoption of online banking. Hence, this study attempted to answer the following research questions.

- i) What are the factors that will influence the intention of online banking adoption?
- ii) Does performance expectancy, effort expectancy, social influence, facilitating conditions, and personal innovativeness in IT influence the intention of online banking adoption?
- iii) Among performance expectancy, efforts expectancy, social influence, facilitating conditions, and personal innovativeness in IT, which are the most influential factor to affect the intention of online banking adoption?

1.6 Scope of Study

In order to achieve the objectives as mentioned above, the scope of study has been narrowed down to focus only on students in University Technology Malaysia. Data were gathered randomly from all faculty and categories of students. The reason of these categories of respondents was chosen due to their demographic characteristic. In Malaysia, the age for university student normally is in the range from 19 to 25 years old. As the finding of Poon (2008) shown that age will affect the online banking adoption because youngster are more computer literacy and easier to accept new technologies adoption. Besides, Wells and Ken (2006) also mentioned that youngster is more conform to the group of peer whom they are socialized. Sreenivasan and Mohd Noor (2010) believed that university students can provide wide cross section of race and culture.

Besides, students are perceived as a good substitute of banking customer as they are current banking customers, have participation in traditional banking services and are most likely have fair knowledge or encountered with online banking (Khalil, 2005). Hence, students will be able to reflect current and future banking customers. Moreover, in the study of Teo and Lim (1999) found that most internet users are youths whose less than 21 years old (22.5 percent) and 56.6 percent from young adults whose age between 21 to 31 years old. Thus, Khalil (2005) believed that using students as samples could draw a presumption of online banking adoption from existing and future customers.

1.7 Significant of Study

Hopefully, this research may be significant useful to bank or financial company. El-Kasheir *et al.* (2009) suggested that in order to monitor customer traffic, online banking is a better channel to serve customers. They also suggested bank to use online banking as a marketing strategies. Thus, getting better understanding of factors affecting online banking adoption, bank can actually redesign their strategy in order to approach consumers more effectively. Besides, this research may not only beneficial in Malaysia, but for other developing country. Perhaps, they may question about the technology adoption issue also, thus, this study might be a reference.

In addition, this study is extending the technology unified theory of acceptance and use of technology (UTAUT) by incorporating additional determinant which is personal innovativeness in IT; it may enrich the study of this model in online banking context. Finally, it could explode our point of view regarding the determinants that are relevant to online banking adoption in Malaysia. Hopefully, the outcome of this study will be useful and widen the academics or scholar standpoint and enable other research studies to be conducted in Malaysia and also in other IT context. Last but not least, this

study may work as an additional reference to future researchers who are concerned about attitude and adoption of online banking.

1.8 Organization of Study

This study consists of five chapters and the summary of each chapter is described as following:

Chapter one begins with background of study, followed by overview of online banking in Malaysia, problem statement, objectives of study, research questions and scope of study. Finally, significant of study are also addressed.

Chapter two introduces the various types of theories that relevant to this study and preview of previous studies. Framework of study and hypothesis is built based on prior research studies and the rationale of framework will be addressed in chapter two also.

Chapter three introduces the research methodology that is used in this study. It begins with research purposes, followed by sampling design, data collections, method of study and data analysis method. Questionnaires design is addressed in method of study.

Chapter four discusses the data collection and finding from questionnaires. Reliability and validity test result are showed in this chapter. The research outcomes which derived from multiple regression analysis are also reported in this chapter. The outcomes of analysis consist of the findings on the factors influencing online banking adoption.

Chapter five concludes the finding and implications of study; it provides an overall picture of this study. Recommendations and limitations are also stated in this chapter as well.

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