DETERMINANT OF CUSTOMER INTENTION TO ADOPT MOBILE BANKING SERVICES IN SAUDI ARABIA

LAYLA HODAED ALSHEIKH

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DOCTOR OF PHILOSOPHY
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DETERMINANT OF CUSTOMER INTENTION TO ADOPT MOBILE BANKING SERVICES IN SAUDI ARABIA

By

LAYLA HODAED ALSHEIKH

Thesis Submitted to the Graduate School of Management, Universiti Putra Malaysia, in Fulfilment of the Requirements for the Degree of Doctor of Philosophy

October 2013
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DEDICATION

I dedicate my thesis work to my family.
ABSTRACT

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Doctor of Philosophy

DETERMINANT OF CUSTOMER INTENTION TO ADOPT MOBILE BANKING SERVICES IN SAUDI ARABIA

By
Layla Hodaed Alsheikh

October 2013

Chair: Associate Professor Jamil Bojei, PhD
Faculty: Graduate School of Management

Mobile technologies and services create a wide spectrum of business opportunities. Despite the availability of technologically advanced mobile devices, mobile banking services have not been widely accepted by bank customers. The purpose of this study is to examine the major factors that contribute towards customer’s intention to adopt mobile banking. In addition, the study aims to examine the direct and indirect effects of perceived value on behavioural intention.

This research uses primary data and the unit of analysis is individuals who are non-user of mobile banking services. The study questionnaires were distributed to samples throughout Saudi Arabia with emphasis on major cities. Four hundred and three valid responses were received and analysed through multivariate analysis process using Structural Equation Modelleing (SEM) via Analysis of Moment Structures (AMOS) software.
The findings of the research demonstrate four main results. First, mobile phone experience and awareness of service have a strong positive influence on benefit factors (performance expectancy, effort expectancy). Second, the findings show that benefit factors have significant and positive impact on perceived value. Third, the results also reveal that performance expectancy, effort expectancy, perceived risk and perceived value are significant predictors of intention to use mobile banking in the initial adoption stage. Fourth, the findings indicate that perceived value significantly mediates the relationship between benefit factors (performance expectancy, effort expectancy) and behavioural intention.

Several managerial and policy implications for Saudi commercial banks and Saudi Arabia Monetary Agency are presented which affect their on-going campaigns about information security of banking transactions through electronic banking channels. The study shows that mobile phone experience and awareness of service are critical in the comprehension of the technology and the related functionality and benefits while the lack of knowledge and information maximize the perception of risk. The principal conclusion is that mobile banking services have to demonstrate to the bank customer its uniqueness compared to other competing services in the same category (electronic banking services). Differentiation can be achieved by having more benefit factors than sacrifice factors (perceived cost, perceived risk) that can create perceived value for adopting mobile banking services in the future. Once the bank customers assess the mobile banking services based on their perceptions of what is received and what is given, they start to make decision that will influence behavioural intention to adopt or not to adopt mobile banking services.
ABSTRAK

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

PENENTU NIAT PELANGGAN MENGGUNA PERKHIDMATAN PERBANKAN MUDAH ALIH DI ARAB SAUDI

Oleh

Layla Hodaed Alsheikh

Oktober 2013

Pengerusi: Profesor Madya Jamil Bojei, PhD
Fakulti: Sekolah Pengajian Siswazah Pengurusan

Teknologi dan perkhidmatan mudah alih mewujudkan peluang perniagaan yang luas. Walaupun terdapat banyak peranti mudah alih berteknologi tinggi, namun perkhidmatan perbankan mudah alih tidak diterima secara meluas oleh pelanggan bank. Matlamat kajian ini ialah untuk mengkaji fakor utama mempengaruhi niat pelanggan menggunakan perbankan mudah alih. Di samping itu, kajian ini bertujuan untuk mengkaji kesan langsung dan tidak langsung Anggapan Nilai pada Niat Tingkah Laku.


Beberapa implikasi terhadap pengurusan dan dasar bank perdagangan Arab dan Agensi Kewangan Arab Saudi dibentangkan seperti cara mereka melakukan kempen berterusan mengenai keselamatan maklumat transaksi perbankan melalui saluran perbankan elektronik. Hasil kajian menunjukkan Pengalaman dan Kesedaran Perkhidmatan Telefon mudah alih adalah penting untuk memahami teknologi, fungsi dan faedah tetapi kekurangan pengetahuan dan maklumat meningkatkan persepsi risiko. Kesimpulan utama ialah perkhidmatan perbankan mudah alih hendaklah menunjukkan kepada pelanggan bank keunikannya berbanding lain-lain persaingan dalam kategori yang sama (perkhidmatan perbankan elektronik). Pembezaan boleh dibuat dengan memberikan lebih faktor faedah berbanding faktor korban (Kos Anggapan, Risiko Anggapan) yang boleh mewujudkan anggapan nilai bagi penggunaan perkhidmatan perbankan mudah alih pada masa depan. Apabila pelanggan bank menilai perkhidmatan perbankan mudah alih berdasarkan persepsi mereka mengenai apa yang diterima dan apa yang diberikan, mereka mula membuat keputusan yang mempengaruhi niat tingkah laku untuk menggunakan atau tidak menggunakan perkhidmatan perbankan mudah alih.
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Above all, I am most grateful for all the bounties that Allah has showered on me, enabling me to complete this doctoral thesis. I must say, “thank you Allah”.

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Appreciation is also due to many people who have been there along the way: my friends Sani, Areeg and Ilham, who have cared patiently about my work while having struggles of their own. Special recognition is extended to my father, my mother, my siblings and my in-laws for their endless love, continual understanding, sacrifice, prayers and unwavering faith in my ability to complete this study, as well as for gentle pushes given when needed.

Finally, very special thanks to my loving husband Majed and our wonderful daughters, Malath, Aeshah and Aljood. Thank you for your understanding during the crazy times and for your love and support always. In many ways, this thesis is ours. I dedicate the completion of my PhD work to all of you.
APPROVAL

I certify that a Thesis Examination Committee has met on 9 October 2013 to conduct the final examination of Layla Hodaed Alsheikh on her thesis entitled “Determinant of Customer Intention to Adopt Mobile Banking Services in Saudi Arabia” in accordance with the Universities and University Colleges act 1971 and the Constitution of the Universiti Putra Malaysia [P.U. (A) 106] 15 March 1998. The committee recommends that the student be awarded the Degree of Doctor of Philosophy.

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On behalf of,
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x
This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

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Declaration by Graduate Student

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Declaration by Members of Supervisory Committee

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- The research conducted and the writing of this thesis was under our supervision;
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<td>Confirmatory Factor Analysis</td>
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<td>CFI</td>
<td>Comparative-Fit-Index,</td>
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<td>CITC</td>
<td>Communication and Information Technology Commission</td>
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<td>EEX</td>
<td>Effort Expectancy</td>
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<td>GFI</td>
<td>Goodness-of-Fit Index</td>
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<td>HOE</td>
<td>Hierarchy of Effects Model</td>
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<td>ICT</td>
<td>Information and Communications Technology</td>
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<td>IFI</td>
<td>Increment Fit Index</td>
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<td>M</td>
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<td>MAT</td>
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<td>Mobile Phone Experience</td>
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<td>NCITP</td>
<td>National Communications and Information Technology Plan</td>
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<td>NFI</td>
<td>Normed Fit Index</td>
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<td>PCO</td>
<td>Perceived Cost</td>
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<td>PVA</td>
<td>Perceived Value</td>
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<tr>
<td>RMSEA</td>
<td>Root Mean Square Error of Approximation</td>
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<tr>
<td>S.D.</td>
<td>Standard Deviation</td>
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<td>SAMA</td>
<td>Saudi Arabia Monetary Agency</td>
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<tr>
<td>SEM</td>
<td>Structural Equation Modelling</td>
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<td>SPSS</td>
<td>Statistical Package for Social Sciences</td>
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<td>TLI</td>
<td>Tucker-Lewis coefficient Index</td>
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<td>UTAUT</td>
<td>Unified Theory of Acceptance and Use of Technology</td>
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CHAPTER ONE
INTRODUCTION TO THE STUDY

1.1 Preamble

This chapter presents an overview of the whole thesis. This includes the background of the study, the problem statement, and the research objectives. This chapter also introduces the reader to the research questions, the importance of the research and the scope of the study, and, subsequently, the definition of terminologies used in the study and the organisation of the thesis.

1.2 Background of the Study

The advancement of digital technology within the field of information and telecommunications has spurred the growth of markets throughout the world. As a result, businesses are hastening the pace of the information revolution by restructuring operations to exploit this online potential. For instance, Poon (2008) states that business-to-business (B2B), and business-to-customers (B2C) transactions are being completed either fully or in part via the Internet. The effects of this revolution are experienced in world markets such as the Saudi market, which is considered to be one of the largest IT markets in the Middle East region (Al-Ghaith, Sanzogni, & Sandhu, 2010). According to the Communication and Information Technology Commission (CITC) in Saudi Arabia, factors such as the reduced cost of Internet access and smart devices, broadband availability, growth in e-commerce, and the implementation of e-government applications have helped to increase Internet penetration by ten-fold, from approximately 1 million
Internet users in 2001 to a projected 15.8 million by the end of 2012 (Communication and Information Technology Commission [CITC], 2012).

Innovative mobile applications are also being developed in tandem with the aforementioned revolution. This has seen manufacturers making handsets that offer such wireless application platforms as WAP, GPRS, and 3G (Lee, McGoldrick, Keeling, & Doherty, 2003). These features have enabled mobile phone users to enjoy applications and services that had hitherto been a preserve only of those who owned personal computers. Now, however, the Internet is available to mobile users, along with all its versatile user application interfaces. Thus, the merging of mobile communications and the wireless Internet has given birth to m-commerce, typically defined as mobile commerce conducted via wireless applications (Anckar & D’Incau, 2002).

Consequently, researchers have reinvented the concept of e-commerce to include the capacity of mobile phones, which is now almost at the same level as that of personal computers (see e.g., Lee, Park, & Chung, 2009; Bouwman, Carlsson, Walden, & Molina-Castillo, 2008; Donner & Tellez, 2008). Mobile phones are more pervasive than personal computers, as evidenced by the fact that there are three times more mobile phone users than online PC users (Riivari, 2005). Furthermore, mobile applications have been cited as being more than just an extension of the more traditional computer user applications (Laukkanen, 2007; Laforet & Li, 2005). According to Anckar and D’Incau (2002) the value-creating characteristics of m-commerce can be classified according to five categories of needs: time critical, spontaneous, entertainment, efficiency and mobility-related needs. Such characteristics are giving businesses and individuals a chance to network in real time, and mean that mobile phone and m-commerce are an important
aspect of the information and communication industry, independent of the realm of personal computers. In essence, m-commerce has carved itself a new niche in the area of business transactions by being a cheaper alternative and more convenient to use than its e-commerce counterpart (Qingfei, Shaobo, & Gang, 2008).

Moreover, the capacity of the modern-day mobile phone has shifted from being a device for transmitting voice messages to a device that also carries data and money (Puschel, Mazzon, & Hernandez, 2010). Accordingly, this newly defined commercial portal has opened doors for industrialists and other providers of goods and services, such as financial service providers, to redefine their operations. New innovations have to take the growing demand for mobile applications into account, as is the case for financial services providers around the world (Pedersen & Ling, 2002). Various financial institutions have thus been expending time and resources producing fresh and novel products and services designed for mobile platforms, known collectively as mobile banking services (also known as M-banking, SMS banking, m-banking, etc).

The genesis of mobile banking services is among a number of recent innovations that use mobile devices such as smart phones, cell phones or personal digital assistants (PDA) in delivering banking services (Laukkanen & Kiviniemi, 2010; Barati & Mohammadi, 2009). M-banking provides customers with the opportunity to carry out banking transactions using their mobile phones. Indeed, the ubiquity of mobile devices, coupled with swift data transmission technologies, enables users to transform their mobile phones into banking units anywhere and at any time (Cruz, Neto, Muñoz-Gallego, & Laukkanen, 2010).
The intention to use mobile banking among customers can be combined with mobile phone usage behaviour to establish how likely it is that customers will adopt mobile banking services. From the literature, it can be seen that many scholars (Ajzen, 1991; Davis, 1989) have shown that individual behaviour can be explained in terms of behavioural intention. Intention to adopt refers to the deliberate and purposeful aim of taking on a certain novel course of action; this information is linked in turn to the concept of “using”, whereby the intention to adopt directly influences the rate of usage. Thus, usage or actual adoption is intimately related to intention. Customer intentions are also dependent on their understanding of product or service attributes, potential benefits offered by these products or services, perceived risk, and cost of acquisition (Upshaw, 1995). For the purpose of this research, intention to adopt is specifically considered in relation to mobile banking services.

The concept of mobile banking is relatively new and not yet recognised by customers in most parts of the world (Dewan & Dewan, 2010; Sulaiman, Jaffar, & Mohezar, 2007). This may in part explain the problem of why there is currently a sluggish rate of customer adoption and usage of mobile banking services (see e.g., Raleting & Nel, 2011; Laukkanen & Pasanen, 2008; Luarn & Lin, 2005). Saudi banks’ efforts to introduce mobile banking services should be marketed to customers to raise awareness of the benefits these services provide, which may then lead to an increase in customers’ adoption rate of mobile banking services. Some researchers (Zhou, Lu, & Wang, 2010; Kim, Chan, & Gupta, 2007) have called for more studies examining value perception among bank customers to identify its importance in driving their behaviour intention to use mobile banking services.
This thesis is based on treating behavioural intention as the key dependent variable in the context of mobile banking services in Saudi Arabia, with a focus on bank customers’ behavioural intention to adopt mobile banking services. Thus, this research aims to determine the factors that influence customers’ intention to adopt mobile banking services in Saudi Arabia from a value perspective.

1.3 Problem Statement

Mobile technologies and services are often identified as a potentially powerful force for creating a variety of business opportunities. However, the advanced technology now available in mobile devices does not necessarily mean that customers will be eager to adopt new mobile banking services. Countries like Japan and South Korea are showing increased usage in mobile services, but statistics from Europe, North America and the Asia-Pacific region, including Australia and New Zealand, show otherwise. In fact, these countries are significantly lagging behind in usage of the latest mobile technology services (KPMG, 2009). A similar situation is found in Middle Eastern and Africa countries, a KPMG (2009) survey revealed that only 27 per cent of consumers in the Middle East/Africa region are currently utilising banking or payment services through mobile devices. However, there are no exact figures regarding mobile banking users in Saudi Arabia alone. Hence, it is important to identify the factors that promote or hinder the adoption of mobile services in Saudi Arabia.

In this context, it is necessary to consider the fact that the personalisation, ubiquity and location specificity of mobile services makes them unique and distinct from other information and communication technology services. However, diffusion rates for the
usage of mobile devices in countries like Saudi Arabia differ from those of countries such as Japan and South Korea, and the reasons for this need to be examined if Saudi Arabia hopes to enhance the usage rate of mobile devices for various commercial applications, including banking services. According to statistics, there is a great divide between the technical advancements that have been made in the telecommunications sector and customers’ sceptical attitudes towards mobile financial services (CITC, 2009). Based on this finding, this thesis will aim to further investigate the reason for customers’ reluctance to adopt these services, especially among the Saudi populace.

Saudi Arabia, as developing economy, has increasingly embraced the capitalistic deregulation of commercial services, primarily as a result of joining the World Trade Organization (WTO) in 2005 (Al-Somali, Gholami, & Clegg, 2009). This has followed in line with the exponential globalisation of the information and telecommunications industry across the world. Contrary to this trend, however, the rate of adoption of mobile banking among Saudi bank customers remains disproportionately low (CITC, 2009; KPMG, 2009; Alsaab, 2009). Many studies on customer behaviour in terms of adoption of mobile banking services in banks have been carried out in developed economies, such as South Korea and Finland where collaboration between financial institutions and wireless telecommunications providers is well established. So far, however, limited empirical research has been undertaken in developing countries, especially in the Middle East (Alsaab, 2009). The development of mobile associated services has the capacity to integrate the social and business domains of mobile device users’ lives. Generally, the key factor in determining the success of such services is convenience; but the issues of awareness, lack of confidence in e-systems, accessibility, and affordability also tend to
play an important role in developing economies. This provides further impetus for the type of research being proposed.

Previous research in the realm of information technology has tended to focus on innovation attributes and user characteristics, rather than on the value-driven qualities of customers’ behaviour and their relative importance to understanding the adoption of e-services (Zhou, et al., 2010). However, the majority of the studies were conducted in the non-electronic context by adopting value as the key concept for predicting customer purchase decision making (Gupta & Kim, 2010). Moreover, although a number of factors have been suggested as important to understanding mobile banking adoption, very little attention has been given in the literature to exactly what constitutes value in terms of mobile banking services, and the role of awareness in fostering higher adoption rates. In fact, many studies have restated calls to examine the factors that can be used to predict the adoption behaviour of mobile phone banking (e.g., Wessels & Drennan, 2010; Laforet & Li, 2005; Luarn & Lin, 2005). Therefore, this study takes up those challenges by examining factors affecting behavioural intention to use mobile banking services and the value perceptions held by bank customers toward mobile banking services. The objectives of the present research are identified next.

1.4 Research Objectives

The objective of the research is to understand the problem identified above. To make this clearer an overall general objective, and specific objectives relating to each individual aspect of the study, are identified as follows:
General Objective

The general objective of this study is to determine the factors that affect customers’ intention to adopt mobile banking as an e-financial service among customers of Saudi commercial banks.

Specific Objectives

- To examine the relationship between previous experience of mobile phone experience (i.e., previous experience of mobile phone use) and perceived benefit factors (performance expectancy and effort expectancy).

- To identify the relationships between awareness of mobile banking services and performance expectancy, effort expectancy and perceived risk of using these services.

- To examine the relationship between benefit factors (performance expectancy and effort expectancy) and sacrifice factors (perceived cost, perceived risk) with reference to: (a) perceived value; and (b) behavioural intention.

- To identify the relationship between perceived value and behavioural intention.

- To investigate if perceived value mediates the relationship between benefit factors (performance expectancy and effort expectancy) and sacrifice factors (perceived cost, perceived risk) within behavioural intention.

1.5 Research Questions

From the above objectives, research questions for this study have been formulated, and are presented below:

1) Is there any significant relationship between previous mobile phone experience and benefit factors (performance expectancy and effort expectancy)?
2) Is there any significant relationship between awareness of mobile banking services, and performance expectancy, effort expectancy and perceived risk of using these services?

3) Is there any significant relationship between benefit factors (performance expectancy and effort expectancy) and perceived value of using mobile banking services?

4) Is there any significant relationship between sacrifice factors (perceived cost, perceived risk) and perceived value of using mobile banking services?

5) Is there any significant relationship between benefit factors (performance expectancy and effort expectancy) and behavioural intention to use mobile banking services?

6) Is there any significant relationship between sacrifice factors (perceived cost, perceived risk) and behavioural intention to use mobile banking services?

7) Is there any significant relationship between perceived value and behavioural intention to use mobile banking services?

8) Does perceived value mediate the relationship between benefit factors (performance expectancy and effort expectancy) and behavioural intention to use mobile banking services?

9) Does perceived value mediate the relationship between sacrifice factors (perceived cost, perceived risk) and behavioural intention to use mobile banking services?
1.6 Scope of the Study

In the present day, mobile technology has become a necessity, rather than just being a tool for communication. As a result, the adoption of mobile technologies considered from a cognitive behavioural perspective has become a predominant trend in IT adoption and implementation research. As mentioned previously, the main objective of the current research is to determine the factors which influence potential customers’ intentions to adopt mobile banking services in Saudi Arabia. This research is based on existing technology and innovation adoption theories, including the unified theory of acceptance and use of technology (UTAUT) model (Venkatesh, Morris, Davis, & Davis, 2003). The current study focuses on the factors that promote or hinder the adoption of mobile banking for potential customers. Therefore, this research considers the influence of mobile phone experience, such as potential customers’ experience of mobile services and awareness of mobile banking services. Moreover, the performance expectancy, effort expectancy, perceived risk and perceived cost associated with using these services are also investigated as possible explanations of perceived value and usage intention. Thus, the scope of this research extends to studying the influence of all these aspects of mobile banking services on customer usage intention.

To some extent, the scope of this study depends on the data gathered from bank customers in Saudi Arabia. The setting of the research, the Kingdom of Saudi Arabia, is a country with thirteen administrative regions. The population of interest is defined as bank customers who have a mobile phone (and who are currently non-users of mobile banking services) drawn from three major economic areas; namely, Jeddah, Al-Riyadh, and Dammam. In order to gather primary data, questionnaires were sent to banking customers
in commercial banks who do not use mobile banking services; since the study focuses on potential mobile banking customers, customers who are already using mobile banking services are excluded from the sampling population. Similarly, only those customers who could potentially be motivated to use mobile banking services are included in the sampling. Moreover, the study does not cover government banks’ customers, as these banks do not have the necessary setup to provide mobile banking services to their customers. The commercial/private banks operating in the Kingdom have already proven effective in providing e-banking services, and as such these banks present themselves as the best candidates for expanding the services they provide through mobile technology.

To summarise, the sample of this study is limited to potential adopters of mobile banking services from commercial banks in Saudi Arabia. The current research aims to identify the potential issues that may hinder the adoption of mobile technological services in the banking field, and to make some recommendations for both users and service providers to enable them to enhance the utility of the mobile banking services being provide to potential users.

1.7 Research Significance

As briefly mentioned earlier, recent developments in mobile technology have enabled users to convert their handsets from plain tools of communication, to versatile composite m-commerce gadgets. Nevertheless, only a handful of customers currently appear to be benefiting from the mobile banking applications that such technologies provide. Improving customer adoption behaviour of mobile banking would help expand the information and telecommunications sector, along with the financial services
industry. The results of this research will be able to assist academics, practitioners and policy makers to better understand the factors that affect adoption behaviour in relation to mobile banking services.

From an academic perspective, the research model presented is based on modifying UTAUT, and was subjected to empirical testing in the banking sector in Saudi Arabia. This model is potentially invaluable for researchers who are interested in electronic service markets, especially e-banking services. Generally speaking, the majority of existing literature in the area of e-banking services covers telephone banking or Internet banking (Wessels & Drennan, 2010). As mobile technology has become an increasingly vital element of mobile banking services there has been growing interest in understanding adoption behaviour processes and customer-perceptions involved in adoption behaviour. This has led to calls for more academic research to be conducted that could help advance knowledge of adoption behaviour in a mobile commerce context. The research model presented here could help fulfil this need by shedding light on customer behaviour in relation to mobile banking services; specifically, on how value perception together with the awareness of services available can affect the adoption intent of consumers, and the way this can be used to inform how electronic banking transactions are carried out. This research also draws upon the conception of awareness as constructed in the hierarchy of effect model (HOE), in order to examine the influence of awareness as an antecedent of perceived risk; a factor which has thus far been seldom researched.

In addition to the above, to the best of the researcher’s knowledge, this study is one of the first efforts to integrate UTAUT with mental accounting theory (MAT) in order to represent consumers’ adoption intention behaviour. To further enhance the information
that is already available, a particular construct of value perception drawn from MAT is
being proposed. The concept of value is used in numerous studies in non-electronic
contexts; however, it did not examine the risk factor that influences consumers’ intent
and behaviour in terms of the doubts that arose, especially in relation to mobile
electronics services (Gupta & Kim, 2010). Thus, this study aims to offer an insight into
mobile banking adoption intention behaviour using positive factors (performance
expectancy and effort expectancy) alongside sacrifice factors (cost and risk). Lastly, the
study also attempts to fill a gap in the literature by examining value perception as a
mediating variable within the research model. As a result, this study may present a
valuable point of departure for other studies in the subject area.

For practitioners involved in mobile banking services, the result of this study is not
only valuable for local Saudi banks, but also for other licensed foreign banks’ with
branches in the Kingdom, which have recently entered the Saudi market (Ramady, 2009).
It will enable these banks to develop a strategic plan in order to market their products and
services. It could also benefit organisations and firms that want to use similar facilities
and technology to transfer money through mobile banking, including the developers of
the services, or even entrepreneurs.

On the practical side, an initial investigation was conducted by the researcher with
a number of Saudi bank managers to ascertain that there is a demand for this study. They
support the need for this type of relevant information, on the basis that one needs to
observe the behaviour of customers in order to provide better financial services and
products. Thus, it is crucial for financial institutions to use the findings of this study to
develop their competitive advantage around the salient factors identified in this research,
and to address their relative strengths and weaknesses in what is a very competitive industry. Correspondingly, the findings will assist them to offer useful, easy and reliable mobile banking services, which will enhance the banks’ image and reputation.

For policy makers, the results of this study can be used to help the Saudi Arabia Monetary Agency (SAMA), as a supervisor of commercial banks, and the Communication and Information Technology Commission (CITC), as a telecommunications regulator, to design rules in order to provide high quality customer service. Additionally, the suggestions this study makes would be of value in carrying out their awareness campaigns.

1.8 Definition of Terms

The following items of terminology are defined and described in order to clarify some of the terms or variables used in this study. They are as follows:

Mobile Phone Experience

Experience of technology refers to the level of experience of using a similar type or class of technology a person has. Prior experience in this research is based on prior cell phone experience, defined as “a general experience with mobile services such as SMS, mobile broadcasting, mobile gaming, mobile learning, and mobile shopping, and not as an experience with one particular mobile service” (Chung & Kwon, 2009, p. 540).

Awareness of Service

Awareness of service is defined as the degree to which a bank customer knows about the existence of the service, and its availability for his or her use (Tibenderana, Ogao, Ikoja-Odongo, & Wokadala, 2010). Therefore, awareness of mobile banking
services can be defined as awareness of the existence of a mobile banking system and its benefits (Al-Somali, et al., 2009). According to Amin, Hamid, Lada, and Anis (2008), and Pikkarainen, Pikkarainen, Karjaluoto, and Pahnila (2004) bank customers’ awareness of mobile banking services can be measured by the amount of information they have about the services in question.

**Performance Expectancy**

Performance expectancy is defined by Venkatesh et al. (2003, p. 447) as “the degree to which an individual believes that using the system will help him or her to attain gains in job performance.” Thus, this construct will measure the degree to which a bank customer believes that using mobile banking will help him or her attain gains in performing banking tasks through mobile channels.

**Effort Expectancy**

Effort expectancy, as identified by Venkatesh et al. (2003, p. 450), is defined as “the degree of ease associated with the use of the system”. Effort expectancy has also been called “perceived ease of use”, such as in technology adoption model (TAM), reflecting user perceptions of how easy it is to use some given technology.

**Perceived Cost**

Perceived cost refers to the perceived quantifiable cost of acquisition and use of technology (Koenig-Lewis, Palmer, & Moll, 2010). Referring to Luarn and Lin’s (2005, p. 880) definition, perceived financial cost can also be defined as “the extent to which a person believes that using mobile banking will cost money.”
Perceived Risk

Previous research (Cunningham, 1967) has conceptualised perceived risk as a dual pronged phenomenon, involving uncertainty and consequences. A similar definition is introduced by Bauer (1967) and cited in Luo, Li, Zhang, and Shinm (2010, p. 225), and defines perceived risk as “a combination of uncertainty plus seriousness of an outcome involved.”

Perceived Value

Zeithaml (1988, p. 14) defines perceived value as “the consumer’s overall assessment of the utility of a product or service based on perceptions of what is received and what is given.”

Behavioural Intention

Behavioural intention is an indication of one’s readiness to perform a certain behaviour (Ajzen & Fishbein, 1980). According to Lin (2011), intention to adopt can be used to assess the likelihood of banks’ customers adopting mobile banking in the future.

1.9 Organisation of the Thesis

The thesis is divided into seven chapters. This first chapter provides the background of the study, followed by the problem statement, the research objectives, research questions, the significance of the research, the scope of the study, and a definition of terms used in the research. The remainder of the thesis is outlined as follows.

Chapter two describes the current status of the banking sector in Saudi Arabia. This chapter starts by describing the national economy of Saudi Arabia in relation to the services’ sector under the Development Plans. Following this, the current condition of the banking sector, the issues and challenges it faces and its future prospects are discussed.
Finally, the role of the telecommunication sector in providing banking services and the present status of mobile banking services among banks in Saudi Arabia are explained.

Chapter three presents a review of the prior literature on issues which relate to the subject area of this study. This chapter is divided into three subsections. The first part focuses on how adoption intention behaviour can be used in order to shed light on actual usage and intention to use behaviour, followed by a brief explanation of the various models that are developed and used in describing the adoption of new technology among individuals. Customer technology adoption behaviour in a mobile banking environment is also outlined in this subsection. The second part covers the history, definition, types and benefits of mobile banking services. This part also focuses on studies that have investigated adoption of mobile banking services and the factors hindering or enhancing such adoption behaviour. The final part of this chapter discusses the concept of perceived value, its definitions, benefit and sacrifice factors as determinants of the perceived value of mobile banking services, and how perceived value explains behavioural intention.

Chapter four outlines the theoretical framework used in this study. The chapter explains the theoretical foundations of this study, based on three theories; namely, the unified theory of acceptance and use of technology, mental accounting theory, and the hierarchy of effects model. It also discusses how the research model and hypotheses of the study were developed.

The research methodology of the study is presented in chapter five. To begin with, the choice of research design is examined. After this, the formulation of the research instrument, its measurement items, its scales, and its validity and reliability are detailed.
The chapter also describes the sampling design, data collection and data analysis methods employed in the study.

In chapter six, the empirical results of the study are analysed. First, the researcher uses descriptive statistics to summarise the data. Second, the hypothesis of the thesis is tested using two step structural equation modelling, and the results of this are presented.

Finally, chapter seven is dedicated to the discussion of these results and the final conclusions of the study. Specifically, it offers a summary of the key research findings and a discussion of the implications, contributions, and limitations of the study, as well as possible areas for potential future research and improvement.
REFERENCES


