ADOPTION OF MOBILE BANKING IN SAUDI ARABIA: AN EMPIRICAL EVALUATION STUDY

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ABSTRACT

This study explores the adoption of mobile banking practices in Saudi Arabia. It focuses on the existence of sufficient infrastructure, and the possible challenges that m-banking services may face. Also, discovers the potential opportunities in the country. A sample of banks in Saudi Arabia was surveyed via questionnaire, with a particular focus on the staff in the related IT departments. The findings demonstrate that although m-banking is believed to be important, there is a general lack of awareness, and it is still not widely accepted by the public. M-banking services provided should be easier to use and offer more security to its users. Furthermore, findings reveal that cooperation among the concerned parties is currently not extensive. From this, the researcher recommends that governing regulations and policies should be properly identified and put in place, and proposes that banking decision-makers in Saudi Arabia should re-evaluate their bank's strategic plans.

KEYWORDS

Information and Communication Technology, Banking Technology, Mobile Banking, Banking Services, Saudi Arabia

1. INTRODUCTION

Recent developments in the Information and Communication Technology (ICT) sector are spurring radical changes in banking institutions worldwide [1]. A number of electronic channels used in delivering banking services to consumers are becoming common, such as Automated Teller Machines (ATMs), e-wallets, Point of Sales (POSs), the Internet and mobile devices [2]. These electronic banking (e-banking) channels services offer the opportunity to banks' customers to perform banking transactions with excessive peace of mind and with the flexibility of time [3]. In addition, the adoption of Banking Technology (BT) has enabled banks to make the international market more truthful [4], with mobile devices becoming smarter and smaller. In software development, the development of mobile applications contributes to the largest innovation. At present, mobile channels and applications are considered as opportunities in ICT due to the diverse areas that could be applied to banking institutions [5].

In Saudi Arabia, the number of mobile internet users is increasing [6]. Whilst, Saudi Arabia is continually investing in telecommunications to develop telecommunications infrastructure, this supports the provision of various types of internet-enabled services [7]. For example, the subscriptions to mobile broadband were 14.27 million at the end of 2013 (contributing a 47.6% population mobile broadband penetration). In a different equation, from 2007 to 2012 the number of wireless connections in Saudi Arabia rose from 28.4 million to 53.0 million, which amounted to 1.82 connections for each resident. Furthermore, infrastructure mobility in Saudi Arabia is in the mature phase. Networks are new and continue to develop, with the high diffusion of internet-

enabled devices. As outlined by [8], 3G mobile devices are sufficient for the processing of banking transactions and were made existing since 2006 in Saudi Arabia. However, the diffusion rates of mobile devices are different in Saudi Arabia as compared to some other countries (e.g. Japan), which calls to be evaluated to increase the rate of the mobile devices usage for various banking services [9]. Furthermore, the regulations, rules, guidance, purposes and structures of mobile banking (m-banking) also vary from country to country [10].

Numerous empirical evaluation studies on consumers' adoption of m-banking have been conducted in developed countries, such as in Finland and South Korea. These studies are carried out in countries where cooperation between banks and electronic transaction service companies has been well established, and infrastructure is sufficiently developed. However, till now limited empirical evaluation studies were carried out in the Middle East, as well as, there being no empirically evaluated study conducted in Saudi Arabia [9]. It becomes clear that m-banking in Saudi Arabia requires further investigation [6].

Various studies have examined the potential factors affecting consumers' intention, adoption, acceptance and usage of m-banking services, and through the collection of data from consumers themselves. Despite this, no study has discovered the m-banking settings around those consumers through empirical evaluation of the availability of capable infrastructure to adopt m-banking services, so far. Likewise, evaluation of challenges related to consumer awareness, cooperation among relevant m-banking services parties, from IT bankers' perspective is also lacking. Therefore, this study serves to conduct an empirical evaluation of the obstacles in infrastructure capability for m-banking services. There is importance role of infrastructure capability, as e-banking measurement on choice and usage is oriented towards infrastructures more than users [11, 12]. [13] Discovered that different levels of mobile security awareness exist among consumers. In addition, there are differences in perception of wireless connection in mobile devices while on a public network, security protection among mobile users, security threat created by mobile devices and security threat awareness behaviour of users.

The purpose of this research is to contribute to the literature of e-banking in general, and m-banking in specific. The research offers a report on the evolution of m-banking; evaluates the capability of its adoption; and discovers the possible opportunities in Saudi Arabia. These support decision makers in Saudi Arabian banks in finding and formulating the strategic plans for maintaining their competitive advantage through delivering m-banking services.

2. BANKING SERVICES IN SAUDI ARABIA

2.1 Challenges of Electronic Transactions in Saudi Arabia

[14] Shows how banking supervision should be achieved, and classifies risk management of e-banking into three main categories, each category consisting of several principles:

a) Board and Management Oversight (3 principles)

b) Security Controls (7 principles)

c) Legal and Reputational Risk Management (4 principles)

Nevertheless, the above principles should be considered together by banks in conjunction with the policies issued by the Saudi Arabian Monetary Agency (SAMA). The principles are necessary to manage the risk of e-banking and thus, adopt a secure e-banking system. In fact, some of these principles have not been implemented in Saudi Arabia. Although all Saudi banks are governed by the regulation and the supervision of the SAMA in Saudi Arabia, each bank is responsible for

protecting its e-banking transactions, in particular through the issuance of security statements. Furthermore, a significant number of the main risks are a result of poor procedural or physical security, in addition to weak access controls to BT [15]. For instance, due to concerns about risk management, the policy states that consumers may negotiate with SAMA about the intraday overdraft limits [16].

Consumers in Saudi Arabia are progressing into full m-banking usage; however changes have been slow. In fact, many consumers are hesitant and apprehensive as concerned parties who have authority over the operations may not have the prerequisites to complete the m-banking transition. According to [15], Saudi banks are facing several challenges in the offering of m-banking services. These challenges are related to the managing of consumer relationships, and are mentioned as follows:

- Recognizing and addressing consumer concerns on m-banking.

- Recognizing weakness due to unknown inadequate.

- Building and maintaining the trust of consumers.

- Lack of experience by consumers.

- Convincing consumers to consent to the effects of secured access technology.

- Accepting the cost of access secured technology.

2.2 Literature Evidence of Challenges for Mobile Banking in Saudi Arabia

2.2.1 Security, Privacy and Trust

In [17] made a survey on m-banking usage in the Middle East/Africa region (Saudi Arabia and South Africa). It was discovered that security and privacy are crucial matters as asserted by consumers, and they may have an impact on consumer decision making in the usage of m-banking. Subsequently, another survey conducted in the same region by [18], evidenced the important role played by security and privacy (48%), and trust (56%) in consumers' decision-making in using m-banking. All of these issues are related to risk management challenges, which are collectively considered as infrastructural threats (e.g. network, m-banking application and WAP).

Diverse organizations offer numerous financial applications such as bill payment and money transfer from one person to another. Some financial transactions are provided completely by banks while others are provided only by telecommunication providers, yet some others are offered cooperatively by banks and telecommunications providers. Therefore, there is third party involvement in some cases of provision of m-banking services. In developing countries, the increased use of m-banking services requires extensive modifications to the demand and supply structure of the financial sector. In other words, network enhancement is required to promote the structure and idea of m-banking services amongst banks; while better software and hardware providers, mobile providers, customers, investors and regulatory agencies are needed to support the perception on the demand side, that m-banking is a valued change in financial practice [19].

In m-banking, the consumers are likely to be placing themselves at risk for security violation or technical failures while using m-banking services. In general, if m-banking applications and operations are sufficiently secured; then there would be consumer confidence in the banks. Thus,

the success of adoption of m-banking services is correlated with the excellence of mobile services providers. The reason is due to the common belief by consumers that third party entities (i.e. service providers) have the capability of misappropriating their money [20].

2.2.2 User's Awareness and Experience in Mobile Devices

[17] surveyed the usage of m-banking in the Middle East/Africa region (Saudi Arabia and South Africa), it was learnt that 25% of consumers are not aware of the offering of banking services by their banks via mobile devices. [18] discovered that 38% of consumers in the Middle East were unaware that their banks offered m-banking services, while in Saudi Arabia, most consumers complete their e-banking service transactions without prior awareness of security issues and potential risks therein [21]. Likewise, consumer experience in using mobile devices is one of the most critical factors for the Middle Eastern/African region, as only 54% of users stated their willingness in using m-banking [18].

Banks in Saudi Arabia should raise customers' awareness of the usefulness of using e-banking services through long-term customer services and advertising. Furthermore, banks should highlight the full functionality of their systems to response efficiently to the different banking needs of users [12].

2.2.3 Cost, Perceived Ease of Use and Perceived Utility

In addition, consumers have expressed concern about the cost of using m-banking, whereby 59% of worldwide consumers have conveyed that m-banking is crucial, but the required payment for using it becomes a barrier. Besides, consumer perception of the ease of use of m-banking is relatively significant, with 50% of consumers not being comfortable in using m-banking services in Saudi Arabia and South Africa [17]. Similarly, [22] observed that most consumers prefer the use of ATM in Saudi Arabia, due to their perception of utility, which remains as a crucial factor in determining the acceptance of m-banking.

2.3 Electronic Transaction Service Controllers in Saudi Arabia: Saudi Arabian Monetary Agency (SAMA)

The SAMA was established in 1952, with the aim of supervising all the banks in Saudi Arabia. SAMA is responsible for managing and operating all interbank e-banking service systems in Saudi Arabia, as well as globally. SAMA has issued various laws to manage e-banking service systems in Saudi Arabia, such as the "Electronic Transactions Law" issued in 2007, with the aim of providing a legal framework, and controlling and regulating e-banking. Meanwhile, to employ the SAMA strategies in this regard, SAMA has launched a special department which is responsible for the development and improvement of the e-banking systems amongst local and international banks in Saudi Arabia. The department is named Banking Technology Department (BTD), under the guidance of the Directorate of Banking Control (DBC) [16].

Furthermore, SAMA requires banks in Saudi Arabia to hold an SAMA license to provide e-banking services to/from consumers located in Saudi Arabia or abroad. On top of this, banks that own a valid SAMA license are required to obtain a prior statement from SAMA allowing the addition of any new e-banking products or services or to modify an existing e-banking product or service. These are founded on the principles of risk management for e-banking in print by the [14], on Banking Supervision [23].

2.4 Evolution of E-Banking and M-Banking in Saudi Arabia

Referring to [24], the top four banks in Saudi Arabia are namely, Saudi American Bank (abbreviated as SAMBA), Al-Rajhi Bank, Al-Ahli Bank (abbreviated as CNB), and Al-Riyadh Bank. In addition, [25] made a comparison among the banks in Saudi Arabia, and found that the Saudi American Bank is perceived as having a key strength, as an e-banking and international linked bank, whereas most of other Saudi banks are not. Therefore, this study evaluates the four mentioned top banks in Saudi Arabia and focuses on Saudi American Bank.

2.4.1 Technology banking in Saudi Arabia

In the early 1980s, Saudi American Bank developed and implemented the main banking system of Citigroup, named DEFINE, following deemed modification to streamline it with the settings in Saudi banking. Moreover, during that period, it became compulsory to use the SWIFT network for making international payments for all the banks.

In 1986, an Automated Cheque Clearing System (ACCS) was established which allowed for effective interbank settlements and cheque clearing.

Until the early 1990s, DEFINE equipped the business requests of the Saudi American Bank when the Saudi Payments Network (SPAN), a national ATMs network was acquired and activated by SAMA.

In the mid-1990s, Saudi American Bank has initiated a network of 106 ATMs and 803 POSs terminals. They have also developed an Electronic Business (E-business) platform for e-banking products and services, as well as established the Electronic Securities Information System (ESIS).

In 1995, Saudi American Bank has changed DEFINE to an open-system platform and improved its entire hardware facilities. In addition, it has also facilitated the integration of the fragmented IT system.

In 1996, a phone banking service was launched and was named Saudi American Bank Phone, which continues to run on the open back-office system.

In 1997, Saudi American Bank had launched a linkage using the National Electronic Funds Transfer (EFT) system, named the Saudi Arabian Riyal Interbank Express (SARIE) provided by SAMA.

2.4.2 E-banking in Saudi Arabia

In late 1999, the Saudi American Bank has started its first website over the Internet, namely, Saudi American Bank.com, containing static web information content that delivers information to current and prospective consumers on the products and services of the bank.

In mid-2000, a number of 8 banks (i.e. 8 of 11 banks, which is approximately 73% of banks) in Saudi Arabia have established their online presence via websites. However, only two of them were offering Internet banking services [26].

2.4.3 M-banking in Saudi Arabia

Various channels were introduced to provide m-banking services, such as SMS-banking, downloading application and WAP-banking (using GPRS) in Saudi Arabia [9].

In 2001, the Saudi American Bank launched its internet banking services for both corporate and retail consumers, namely Saudi American Bank Access and Saudi American Bank Online

respectively, and operated an SMS-banking, Saudi American Bank Alert, to provide updates to consumers on their banking transactions via their mobile phones.

In 2002, the Saudi American Bank supplied its consumers with online national and international brokerage services, named Saudi American Bank Tadawul and Saudi American Bank Direct. It is worth mentioning that this was the first Saudi bank to offer such services and that the Saudi American Bank offers an almost comprehensive choice of e-banking via the internet, as well as mobile and brokerage services [27].

In 2004, the national Electronic Bill Presentment and Payment System (EBPP) was developed and activated through SADAD. SADAD provided full interactions and processes through all banking channels in Saudi banks and was developed in an attempt to build a comprehensive electronic payment infrastructure that is streamlined, secured, integrated and cost-effective.
In mid-2009, two unique services were added to the SADAD system. Firstly, to allow the payment of government services, with an immediate fee inquiry. Moreover, secondly, a refund service request via banking channels [16].

[28] analyzed the remote banking services in Saudi Arabia. The results reported that an astounding 15 of the 18 registered banks in Saudi Arabia offer internet banking and merely SMS services while only five banks offer full m-banking services.

In addition, the Saudi American Bank has recently announced the official launch of their m-banking applications for the Blackberry and Apple iPhone. It is an entirely transactional service, which allows the consumers of Saudi American Bank to check on their accounts, pay bills and make money transfers via their mobile phones, at anytime and anywhere. Moreover, consumers are also able to use their same user account on computer web-based internet banking [29]. However, in general, m-banking services via WAP (mobile internet) are still in the preliminary stage of implementation in Saudi banks [9].

In the present time, not only Saudi American Bank but also most of the large banks in Saudi Arabia such as Al-Riyadh, Al-Rajhi and Al-Ahali have made extensive investments in m-banking capabilities. For example, Al-Riyadh Bank offers comprehensive m-banking services, which allow consumers to: check account information, view statement, pay bills, transfer money amongst bank accounts in the local banks or to banks overseas, make loan payments as well as pay credit card bills. Likewise, Al-Rajhi Bank was the first bank to have offered equity dealing services via the mobile phone in Saudi Arabia [30]. Al-Ahli Bank, on the other hand, offers Al-Ahli Mobile with free SMS services. Al-Ahli m-banking is obtainable for Apple (iOSTM), Blackberry and Android devices, and is also accessible for download by Al-Ahli's consumers on the Apple App Store^{TM}, via Google Play^{TM} and from Blackberry World [31].

Additionally, m-banking enables consumers to withdraw cash without the use of a debit card [31]. According to [32], there has been an increase in the usage of financial cards in Saudi Arabia, with 26% of consumers engaging in m-banking in 2013. The results reveal that m-banking is the fastest growing channel regarding growth in financial card usage in the Saudi Arabia. In addition, statistics provide the evidence that in 2012 the usage was SAR388 million, and this grew to SAR 1,144 million in 2013, and finally reached as much as SAR1, 800 million in 2014. Therefore, it is expected that m-banking would continue to proliferate, as a number of government projects aimed at upgrading the internet infrastructure come on stream and banks further strengthen their transactions and payment networks.

3. MATERIALS AND METHODS

The researcher considered the Information Technology (IT) department staffs of the banks in Saudi Arabia as sample population respondents for participation in the survey questionnaire. A sample of the four major banks in Saudi Arabia namely, Saudi American Bank, Al-Rajhi Bank, Al-Ahli Bank and Al-Riyadh Bank was selected, where the staffs in the related IT departments, who have experience in m-banking, were chosen. A total of 90 questionnaires were distributed to the respondents, of which 33 were returned, but only 31 of the received questionnaires were valid and thus were analysed. Data collected were statistically analysed using suitable tests to prove the research hypotheses. The Cronbach's Alphatest and Chi Square tests were carried out. In addition to this, descriptive statistics were utilized and which included the frequencies and percentages tests. After the results had been interpreted and discussed, the researcher came out with some final recommendations.

3.1. Research Hypotheses

Hypothesis 1: The concerned parties are not aware of the importance of m-banking in Saudi Arabia.

Hypothesis 2: M-banking in Saudi Arabia lacks an inadequate infrastructure.

3.2. The Survey Questionnaire

The questionnaire consists of two sections. The first section comprises of demographic questions (such as expertise in m-banking, working experience and age). The second section contains a set of questions, which are structured to answer the research hypotheses. This section which is made up of 15 questions focuses on the importance of existing m-banking services, the level of satisfaction on strategies of m-banking adoption, the level of information provided about m-banking, the capacity of transactions, current challenges, and prospects and opportunities.

All the questionnaire questions were adopted from [1], except questions numbered 9-10 which were adopted from [9]. In addition, these questions have been modified to suit and meet the aims of the study. The questions were based on English in the original references and had been translated into the Arabic language by an Arab native speaker for the purpose of the questionnaire, as this study was carried out in Saudi Arabia (i.e. an Arab country). The questionnaire was self-administered by the researcher (i.e. hand to hand), to provide clarifications and/or explanations to participants (where necessary) and to ensure that the questionnaires were completed by the sample of IT department staffs in the selected banks, as intended.

The questionnaires were distributed to different Saudi banks located in the various regions of Saudi Arabia, which resulted in an unequal number of valid returned questionnaires from each bank, as follows:

The number of participants from the various banks was, 8 from the Saudi American Bank (25.8%), 11 from Al-Rajhi Bank (35.5%), 7 from Al-Ahli Bank (22.6%) and 5 from Al-Riyadh Bank (16.1%), respectively.

4. ANALYSIS AND RESULTS

The reliability of the study was examined by submitting the questionnaire items to Cronbach's Alpha test. The results show a value of 0.81 for the entire questionnaire items, which is highly accepted. The following is an analysis of the two sections of the questionnaire:

4.1. Participants Demographic Profile

   i.   All the participants were IT staffs, who have experience in m-banking (as planned by the researcher).

   ii.   Almost half of the participants (48.4%) have 13 or more years of experience in using the mobile phone. Another portion of participants (38.8%), have between 8 to12 years of experience while a small percentage has low experience. The results show that the participants have an overall high experience in using the mobile phone.

   iii. The participants' work experiences in IT departments were normally distributed. A percentage of 32.2 % have a long working experience of 13 years and more while 51.6% of them is having between 4 to 12 years.

   iv. A majority of the participants are young. A percentage of 48.4% are in their twenties of age, 35.5% in their thirties of age while the balance of 16.3% is in the age range of 40 to 50 years old or more.

Based on the results of analysing the demographic questions, the researcher has assumed that the subject respondents of the sample are sufficiently mature and efficient to consider the significance of the results.

4.2. Hypotheses Testing

A total of 15 questions were analysed to prove the research hypotheses (second section) of the questionnaire. The questions are classified into two tables; each table consisting of a set of questions with associated answers structured to test a particular hypothesis, as follows:

Hypothesis 1: The concerned parties are not aware of the importance of m-banking in Saudi Arabia.

A Chi-square test was performed to the questions (1-11). The results revealed a range of values, ranging from 0.87 to 1.00. This implies that hypothesis 1 is supported.

Table 1. Results of testing the concerned parties' awareness of the importance of m-banking in Saudi Arabia.

No.	Question	Options	Number of Participants	Percentage
1	Is m-banking important to the Saudi Arabia community?	Agree	28	90.3%
		Disagree	3	9.7%
2	From a technology perspective, what do you think is the top m-banking channel?	SMS	3	9.7%
		Internet browser	11	35.5%
		Both options	17	54.8%
3	What do you believe is the probable value of m-banking?	Channel for unbanked people	3	9.7%
		Improves consumer services	4	12.9%
		Reach all kinds of consumers	6	19.4%
		All options	18	58.1%
4	Who would benefit most from m-banking?	Consumers	20	64.5%
		Banks	9	29.0%
		Economy	1	3.2%

		Vendors	1	3.2%
5	How does m-banking enhance your bank?	Rises revenue	2	6.5%
		Maintains and Attracts consumers	1	3.2%
		Enhance bank's reputation	4	12.9%
		All options	24	77.4%
6	How can you evaluate your bank's strategy for adopting m-banking?	Weak and developing	1	3.2%
		Good	8	25.8%
		Excellent	22	71.0%
7	What is the greatest managerial strategy for adopting m-banking in your bank?	An external vendor	6	19.4%
		An outsource	6	19.4%
		In-house development	19	61.3%
8	Does your bank provide m-banking services via professional service providers?	Yes	27	87.1%
		No	4	12.9%
9	Does your bank send enough information about the benefits of using m-banking services?	Yes	24	77.4%
		No	7	22.6%
10	Does your bank send enough information on how to use m-banking services?	Yes	23	74.2%
		No	8	25.8%
11	What are the obstacles that you possibly face when providing m-banking?	Network problems	10	32.3%
		Consumers' unawareness	11	35.5%
		Consumers' non-acceptance	10	32.3%

As shown in Table 1, the results from analysis of the evaluation study are as follows:

- A majority of the respondents (90.3%) voiced the importance of m-banking to the community in Saudi Arabia.

- Almost half of the sample (54.8%) believes that both SMS and internet browsers are primary channels in delivering m-banking services. However, the percentage for internet browsers was higher (35.5%) than for SMS (19.3%).

- 19.4 % of the respondents believe that the most probable value of m-banking is its ability to reach all kinds (various types) of consumers; followed by their capacity to improve consumer services (12.9%).

- A majority of the respondents (64.5%) believe that the consumers benefited the most from m-banking, followed by banks (29.0%).

- 77.4% of the sample believes that m-banking can support banks by collectively enhancing the bank's reputation, raise revenue and finally, maintaining and attracting

consumers. Meanwhile, 12.9% of the sample indicated that enhancing the bank's reputation was the most important.

- 71% of the sample believes that the bank's strategy in adopting m-banking is excellent while only 25.8% of them evaluated this as at least good.

- 61.3% stated that the best managerial strategy for adopting m-banking is in-house development, while, the external vendor strategy and outsource strategy were similar weight at 19.4% each.

- A high percentage (87.1%) of respondents state that their banks are providing m-banking services via professional service providers. Furthermore, banks are providing sufficient information on the benefits of m-banking (77.4%), as well as adequate information concerning the usage of m-banking services (74.2%).

- The key obstacle faced when offering m-banking services is consumers' unawareness (35.5%), and this is followed by consumers' non-acceptance and network problems, with each making an equal contribution of 32.3% of the obstacles encountered.

Hypothesis 2: M-banking in Saudi Arabia lacks an incapable infrastructure.

A Chi-square test was executed to the questions (12-15). This resulted in different values, where the minimum was 0.83, and the maximum was 1.00. This indicates that hypothesis 2 is also supported.

Table 2. Results of testing the m-banking infrastructure in Saudi Arabia

No.	Question	Options	Number of Participants	Percentage
12	Which of the following issues is of less importance while using m-banking in Saudi Arabia?	Security and privacy	12	38.7%
		Cost	19	61.3%
13	When would m-banking turn into the core transaction channel in Saudi banks?	By 2020	16	51.6%
		By 2025	8	25.8%
		After 2025	7	22.6%
14	What is the feasible reason in making m-banking more popular for consumers in future?	More utility	3	9.7%
		More cost-effective	4	12.9%
		Easier to use	18	58.1%
		More secured	6	19.4%
15	Would m-banking succeed and resolve existing challenges in Saudi Arabia?	Agree	23	74.2%
		Disagree	2	6.5%
		I do not know	6	19.4%

As shown in Table 2, the results from analysis of the evaluation study are as follows:

- On the cost issue, 61.3% of the respondents are not very concerned about the costs of using m-banking services. However, 38.7% of them are apprehensive about security and privacy issues. The researcher believes that this may be due to the high-income level in Saudi Arabia.

- Approximately half of the sample (51.6%) believes that m-banking services would become the core transactional channel by 2020. This reflects the anticipated common and wide-spread use of m-banking, since 2020 merely 5 years into the future.

- As much as 58.1% of the respondents are of the opinion that m-banking would be made more popular with consumers in the future if it becomes easier to use while 19.4% believe this can be achieved by improving its security, 12.9% by reducing cost and 9.7% by improving its utility.

- 74.2% of the sample is optimistic about the future success of m-banking in Saudi Arabia.

5. DISCUSSION

In view that the community of Saudi Arabia believes in the importance of m-banking, it deserves to be taken into consideration, and their requirements should be fulfilled. This could assist in the full adoption of m-banking in Saudi Arabia.

As the consumers are expected to benefit the most from m-banking, thus all other parties (e.g. banks, providers and the government) should seek to achieve consumer satisfaction to make m-banking a success. For example, providing a better network infrastructure is a priority, provide the community in Saudi Arabia with easier use of m-banking services. In addition, the society in Saudi Arabia should be provided with more information about the benefits and ways of utilizing m-banking. This would promote more awareness and acceptance of m-banking by the consumers.

The community in Saudi Arabia should be updated with new m-banking services, particularly on security and privacy issues. Likewise, the consumers should be informed and educated on the benefits of m-banking services. These would also assist to give them greater assurance of the privacy of their financial and personal information.

6. CONCLUSION

This study contributes by adding to the literature of e-banking in general, and m-banking in specific. The research offers a report on the evolution of m-banking; evaluates the capability of its adoption; and discovers the possible opportunities in Saudi Arabia. In addition, this study highlights the aspects affecting the behavioural intention to adopt m-banking, specifically in Saudi Arabia, which should be explored.

The survey of this study determines the major factors (either as inhibitors or motivators) that play a role towards customers' intention to adopt m-banking, especially in Saudi Arabia.

Based on the results, the researcher came out with several recommendations. Future research should examine on the acceptance of m-banking services in Saudi Arabia through various technology acceptance models and theories. They are also advised to explore on the acceptance of m-banking in rural areas, where the community is faced with a weaker network infrastructure and have less experience in the use of mobile devices.

As this study has not taken into consideration of the cultural and demographical factors affecting the adoption of m-banking services, it is suggested that it is essential for future research to focus on investigating the influence of demographic variables on the acceptance of m-banking services, where the low income, low education, gender and age of consumers may play a role.

Similarly, this study has collected data in Saudi Arabia, with no distinction made between Saudi and non-Saudi consumers. Therefore, prospective researchers should take into account of cultural factors in Saudi Arabia that may assist the banks in formulating more effective strategies for dealing with both local and foreign consumers in the country. Moreover, researchers are advised to uncover the reasons for the consumers' worries (i.e. trust) with regards to security and privacy issues in using m-banking services.

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