FACTORS INFLUENCING UPTAKE OF MOBILE BANKING TECHNOLOGY AMONGST FEMALE CUSTOMERS OF COMMERCIAL BANKS IN KENYA: A CASE OF KENYA COMMERCIAL BANKS, NAKURU TOWN

BY

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DECLARATION

This research project is my original work and has not been presented in any other university or institute of higher learning.

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This project has been presented for examination with my approval as the University Supervisor.

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DEDICATION

This research proposal is dedicated to my husband Jairus Mecha, my mother Mary Ngarari, my father Jamlick Ngarari, my brothers Edwin Ngarari and Haniel Ngarari and my sister Morine Kinyua for their great support and encouragement during my studies.

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LIST OF ABBREVIATIONS AND ACRONYMS

KCB   Kenya Commercial Bank

TAM   Technology Acceptance Model

DIT   Diffusion Innovations Theory

M-Banking   Mobile banking

CBA   Commercial Bank of Africa

ICT   Information and Communication Technology

KYC   Know Your Customer

SME   Small and Medium Enterprises

AML   Anti Money Laundering

ATM   Automatic Teller Machine

CCK   Communication Commission of Kenya

E-Commerce   Electronic Commerce

E-Banking   Electronic Banking

MMT   Mobile Money Transfer

TRA   Theory of Reasoned Action

PI   Personal Innovativeness

PU   Personal Usefulness

RA   Relative Advantage

ABSTRACT

Mobile banking has transformed the banking experience and it is expected that with the enormous benefits of mobile banking service every customer in the bank would embrace it. This however is not the case as most of female customers have continued to line up in the banking halls for services such as account balances, withdrawal of funds despite the high costs of over the counter withdrawals and deposits. This makes them waste time queuing and spending high costs on banking. The study thus aimed at establishing the factors influencing the uptake of mobile banking among female customers of commercial banks in Kenya: A case of Kenya Commercial Bank - Nakuru Town. The specific objectives of the study were: To determine the influences of technology, to establish the influences of M-banking service costs, to evaluate influences of customer income level and to assess the extent to which perceived security risk influences uptake of mobile banking amongst female customers of KCB Nakuru Town. The study employed descriptive survey design, focusing on KCB ó Nakuru Town. A representative sample of 360 respondents was selected using simple random sampling from a total targeted population of 6,575 female customers of the bank who were eligible for mobile banking. A sampling frame of the eligible customers was obtained from the bank. Structured questionnaires were used as data collection instruments. The collected data was analyzed using statistical package for social sciences (SPSS) employing both descriptive and correlation statistic. Tables were used to present the findings of the study. The findings of the study indicated that a weak positive correlation existed between influence of technology and uptake of M-banking r= .278 significant at p= 0.00< (0.005), there was a negative weak correlation between cost of services and uptake of M-banking among r=-310 significant at 0.00< (0.005), income levels and M-banking uptake had a moderate positive correlation with an r value of .053 and a p value of 0.000< (0.005) and lastly there was a negative strong correlation between perceived risk and uptake of M-banking r=-.683 which was further significant at p= 0.00< (0.005). The study concluded that technology skills had an influence on uptake of M-banking by women although lack of it also did not keep women from using M-banking, use of M-banking services is not entirely restrained by the cost of the service, income levels play a very important role in the uptake of M- banking by female bank client and lastly perceived security had an influence on the up take of M-banking. The study recommended a need to come up with systems that function properly to enable increase in use of technology. There should be a cost differentiation between those who cannot afford to use M-banking and those who can, this will ensure absorption of female bank client of all income levels and finally there is need to come up with adequate safety measures to ensure customerøs money is secure.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Mobile banking or M-Banking in short is a relatively recent technological development. It has been variously defined as a channel that allows the customer to interact with the bank through a mobile device (Barnes & Corbitt, 2003). According to Chung and Kwon (2009) mobile banking is the convergence of mobile technology and financial services. In banking circles, M-banking is an important technological development as it allows customers to easily access their banking operations through their mobile phones (Yu & Fang, 2009).

Recent studies have established that around fifty percent of the adult population around the world does not have access to basic financial services. The studies also elucidate the sad fact that the majority of these people are women (Ling, 2013), reason being that women are majorly spread in rural areas and are involved in traditional activities that do not yield much for banking. Several studies have evidenced the fact that mobile banking has been crucial in facilitating the financial transactions between banks and their customers (Kleijnen et al., 2004; Luarn and Lin, 2005; and Mattila, 2003). Pegueros (2012) described mobile technology as the current õhot areaö where new investments and new ideas are emerging in the hopes of being part of the next õbig thingö that generates healthy returns and wealth. As, she asserted, õconsumers are embracing mobile in their day to day lives and are more likely to forget their wallet at home than their mobile phoneö.

KCB is one of kenyaøs largest commercial banks with over 215 branches Kenya and the East African region. KCBøs M-Banking was introduced in 2009. Initially introduced as a market differentiation product (then known as ÷KCB Connectø and later changed to ÷KCB Mobi bankø for KCB customers and ÷KCB M-Benkiø for non-customers subscribed to Mpesa service), the service provides mobile phone user to access full banking services on their mobile phone. KCB has collaborated with the leading mobile telecommunications service providers Safaricom, Airtel and Yu (www.kcb.co.ke)

A Communications Authority of Kenya 2013 report, puts the number of mobile phone subscribers in Kenya is about 30 million against around 10 million bank account holders in Kenya. This provides an opportunity to banks to access and deliver financial services to both the ±banked√ and ±unbanked√ population through the use of mobile banking.

In spite of this massive opportunity provided by mobile technology to enhance banking services, there has been a relatively slow uptake of the service, especially among women. Several studies have been done to determine the factors influencing the adoption of mobile banking. For instance, a study by Ndumba and Muturi (2012) found that the risk of loss and fear of system failure were among the main reasons for the low adoption of mobile banking among customers of KCB.

Another study by Venkatesh and Morris (2000) determined that gender was a significant factor in technology adoption and usage. They found out that males were more responsive to technological innovation than females hence more likely to adopt mobile banking. This is backed up by other studies by Monsuwé (2004) and Laforet (2005) which confirmed that men tended to exhibit greater interest with using different types of technology.

1.2 Statement of the Problem

As discussed earlier much study has been done regarding mobile banking in kenya but little has been done in regards to mobile banking and gender in regards women. Traditionally the Kenyan women had specific roles to play which included looking after the children, Disciplining Children and fixing things around the house while men were the sole bread winners. But the roles have changed gradually with increase in technologies, increase in educational opportunities, more persons coming in contact with other cultures, as well as a change in laws. This has seen women taking up formal employment while others have engaged in self-employment within the SME and corporate world to take care of their families on issues such as education, housing. Some of these projects need huge sum amounts of money to be completed and this can be achieved through the intervention of financial institutions (banking industry) that can offer financial advice and finances that may enable the women to achieve their objectives. Most commercial banks have adopted the mobile banking technology that can be operated at one's own comfort without having to make a trip to the bank. Through this technology customers can access their funds, borrow loans, and make deposits and transfer of funds and they are able to build up their portfolio through

regular inflow and outflow of funds that gives the bank the confidence to offer them loans for development. However despite the introduction of mobile banking technology by commercial banks in Kenya and its benefits, it is observed that there have been serious challenges regarding its adoption amongst the female customers yet it would be of much help to them in carrying out their stipulated roles. This is evidenced by the fact that the use of mobile banking services is much lower among the female customers than the male customers. For instance demographic indicators show 59% of CBA Mshwari product users by March 2015 were male customers while female customers constituted 41%.In the year 2014 data released by Kenya commercial bank revealed that 61% of mobile banking customers were male customers while 39% were female customers. Additionally within the three branches of KCB Nakuru Town, Nakuru County, the current data reveals that about 68% of mobile banking customers are male while 32% are female indicating that the use of mobile banking service is still low among the female customers of KCB Nakuru town thus denying them the benefits of the service.

It is expected that with the enormous benefits of mobile banking technology every customer in the bank would embrace it but its adoption by female customers is minimal. This therefore raises the question, why most female customers of commercial banks are reluctant to embrace mobile banking technology, thus necessitating a study on factors influencing uptake of mobile banking amongst female customers of KCB Nakuru town.

1.3 Purpose of the Study

The purpose of the study was to investigate the factors influencing uptake of mobile banking technology amongst female customers of commercial banks in Kenya: A case study of Kenya Commercial Bank - Nakuru Town.

1.4 Objectives of the Study

i. To determine the extent to which technology influences uptake of mobile banking technology amongst female customers of KCB Nakuru Town.

ii. To establish the extent to which m-banking service costs influences uptake of mobile banking technology amongst female customers of KCB Nakuru Town.

iii. To evaluate the extent to which customer income level influences uptake of mobile banking technology amongst female customers of KCB Nakuru Town.

iv. To assess the extent to which perceived security risk influences uptake of mobile banking technology amongst female customers of KCB Nakuru Town.

1.5 Research Questions

i. How does technology influence uptake of mobile banking technology amongst female customers of KCB Nakuru Town?

ii. How do M-banking service costs influence uptake of mobile banking technology amongst female customers of KCB Nakuru Town?

iii. How does customer income level influence uptake of mobile banking technology amongst female customers of KCB Nakuru Town?

iv. How does perceived security risk influence uptake of mobile banking technology amongst female customers of KCB Nakuru Town?

1.6 Significance of the Study

As an important player in the banking sector, KCB provides much needed banking services to the Kenyan populace, women included. Modern banking has moved on from the traditional õbanking hallö oriented service to the modern õtechnology-basedö oriented banking of which M-banking is a part. However not many women use the service. This study was significant in that it intended that its findings could assist the organization to understand the factors that influence the uptake of mobile banking among its female customers. It also hoped that the findings of this study will inform the banking strategists on these factors in order to promote the M-banking service especially within the female customers who are largely missing out in the M-banking sector. The study could also enable women have a clear understanding of what mobile banking entails in terms of its usefulness and reliability.

1.7 Delimitation of the Study

The study targeted female customers of KCB ó Nakuru town. The bank has three branches spread around the town with a total population of 47,995 customers. The organizationøs records reveal that although 20,595 customers are eligible for mobile banking, a large percentage of these customers have not embraced mobile banking. The records also reveal that 6,575 female customers are considered eligible for mobile banking. The studyøs independent variables included: aversion to new technology, customerøs level of income,

costs of the m-banking service and customer's perceived risk. Its dependent variable will be uptake of mobile banking. (www.kcb.co.ke)

The study focused on KCB's three branches in Nakuru town, the fourth largest town in Kenya. Founded in 1904, Nakuru town is located 178km Northwest of Nairobi, the capital city of Kenya at an altitude of 1,859m above sea level. Tourism, agriculture, commerce & industry are the major economic activities in Nakuru Town. The town is well represented in the banking sector (by Kenyan standards) with over 25 commercial banks situated in the town. The town is currently ranked as the fastest growing town in East and Central Africa. This rapid growth offers a great opportunity for both the banking sector and the spread of mobile banking in Kenya. (www.kenyaspace.com)

1.8 Limitations of the Study

The study was limited by time for data collection however the researcher engaged research assistants in the collection of data. Finances also posed a challenge in the study since the researcher was self-sponsored, to overcome this, the researcher maximized on volunteers in the administration of research instruments to the respondents. The female customers were not willing to volunteer information; this was overcome by assuring them that the information provided was used for academic work only.\

1.9 Assumptions of the Study

The study assumed that the target respondents would be cooperative enough and that they would provide accurate and reliable data. The sample was also expected to be representative of the entire population.

1.10 Definitions of Significant Terms

Female customers	Bank clients who are female
Male customers	Bank clients who are men.
Mobile Banking	A service provided by the bank that enables the user to receive information, make payment and transfer money to third parties based on instructions sent via the mobile phone.

Mobile phone It is a portable telephone that does not require use of landline. It enables users to make and receive calls as well as send text messages.

Commercial banks These are institutions where people or businesses can keep their money.

Mobile banking service costs These are prices or fees incurred while carrying out mobile banking transactions.

Technology Refers to the system that facilitates mobile banking.

Perceived security risks This refers to the anticipated security threats that may be experienced in mobile banking transactions.

Level of income Refers to the amount of money that a person earns over a defined period of time.

Banked population Refers to the members of a population that have access to formal banking services

Unbanked population Refers to the members of a population that do not have access to formal banking services.

Target respondents Refers to female customers responding to the research instrument.

Financial services- This refers to banking services such as account opening,cash withdrawals,cash deposits ,provision of loans and credit cards.

Uptake of mobile banking The adoption of mobile banking

Modern banking- The use of available technology to make transactions such as mobile banking and internet banking**.**

Traditional Banking- It refers to access of banking services over the counter

Formal Banking These are financial services that originate from private or public institutions that provide formal credit and savings facilities to customers

1.11 Organization of the Study

Chapter one covers the background pertinent to the study. It goes further to state the research problem, the purpose of the study, the research objectives and questions to guide the study. Covered further in the chapter is the description of the scope of the study, the rationality of the study and limitations, and concludes with definition of terms significant to the study.

Chapter two presents the literature review relevant to factors influencing uptake of mobile banking amongst female customers. The findings by other researchers are presented, discussed and a summary of gaps highlighted. The chapter ends with a theoretical and conceptual framework.

Chapter three explains the research design, population of the study, the sample size and sample selection. It discusses the research instruments including their administration, validity and reliability. The chapter ends with a discussion of data analysis methods and operational definition of variables.

Chapter four explains the data analysis made and how the analyzed data is to be presented. It reduces raw data to intelligible and interpretable form using statistics. It discusses the relationships, differences and meaning of research results.

Chapter five gives a summary of the findings of the study. A discussion of the findings is done in this chapter. This is done by comparing and contrasting of the findings with other empirical findings show how the findings agree or disagree with the existing body of knowledge.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of relevant literature related to the objectives of this study. It is important because it allows the researcher to evaluate the various literature that exists in the field, hence determine if a knowledge or research gap exists in the area. The chapter begun with a comprehensive literature review followed by both theoretical and conceptual framework for the study.

2.2 Mobile Banking

Mobile banking is a channel that allows the customer to interact with the bank through a mobile device (Barnes & Corbitt, 2003). Chung and Kwon (2009) defined mobile banking as the convergence of mobile technology and financial services.

Ivatury and Mas (2008) determined that financial institutions, challenged in providing profitable banking services to less privileged client through õtraditional channelsö, perceive mobile financial services as a type of banking which lowers the costs involved in serving customers. As a result, several banks launched multiple service access methods using new technological innovations such as ATM, internet and through mobile phones (Laukkanen & Pasanen, 2007). Pegueros (2012) categorized mobile banking into three key areas: the first one is informational which include functions such as balance and transaction history, loan, mortgage, and credit information. Secondly is transactional services which included account transfers, bill pay, person to person payments and remote deposit capture and lastly is service features that include functions that enhance the customerøs experience including contact options, help information, and alerts.

Generally, there are two basic dimensions of mobile banking: additive and transformational (Porteous, 2006). Cases whereby the mobile phone simply acts as a channel to the customerøs bank account are referred to as additive, while transformational refers to cases whereby the phone to access financial services by people who do not have a formal bank account.

A study of Kenyan mobile banking users revealed that most respondents used their mobile phones to access banking services than accessing the internet for other uses. Additionally, the most used banking services through the mobile phone were checking bank balances, money withdrawing and funds transfer (Luvanda, 2014)

2.3 Influence of Technology on Uptake of Mobile Banking Technology

A study by Venkatesh and Morris (2000) determined that gender was a significant factor in technology adoption and usage. They found out that males were more responsive to technological innovation than females hence more likely to adopt mobile banking. This is backed up by other studies by Monsuwé (2004) and Laforet (2005) which confirmed that men tended to exhibit greater interest with using different types of technology.

Alafeef et al (2011) determined that the highest percentage of Jordanian internet users consisted of males (88.31%), while females only constituted 11.69% reflecting the influence of gender in the adoption of new technology.

Additionally, Singh (2004) determined that men tended to use mobile banking more than women, while the majority of mobile banking users tended to come from high-income groups such as small business owners, salaried employees and senior managers. Moreover, the negative perception about computers and technology especially that they were õhard-to-use imageö influenced peoplesø thinking about mobile banking (Fain & Roberts, 1997). This illustrates the influence of socio-economic background and culture of potential users as factors that influence the usage of mobile banking, especially in cultures where women traditionally occupied a lower status. The rapid growth of mobile technology and related services such as mobile banking over the years has been attributed to a variety of factors. Alafeef et al (2011) attribute this tremendous growth to the following factors: demographic factors, trust and security. In their study, they determined that demographic factors however had the biggest influence in the adoption of new any technology, most notably, age, gender, income, and education level. Another study conducted by Ndumbi and Muturi (2014) found that 77% of KCB customers found M-banking easy to use due to its accessibility, time savings and comfort which was in line with the findings of Brown et al (2003), Dasgupta et al (2011) and Yang (2009).

A Kenyan study conducted identified money security as an important factor influencing mobile banking. The study conducted in Muranga, Kitui and Kibera determined that mobile banking tended to empower women and enable them to manage and secure their money (Plyler et al, 2010). This illustrated a gain in both privacy and control over their expenses. This is further confirmed by a study by White (2012) done in Migori county which indicated that mobile banking offered security, ease of access to funds, and opportunity to save for the women in the county

2.4 Influence of Mobile Banking Service Cost on Adoption of Mobile banking technology

Cost efficiency is an important consideration in mobile banking. Payment transaction costs vary based on key factors such as wireless capability, maintenance and upgrades (Mattila & Pento 2002; McCall, 2002). A study by Mallat (2007) showed that the cost of a payment transaction has a direct effect on consumer adoption if the cost is passed on to customers. He argued that the transaction costs should be low to make the total cost of the transaction competitive. Thus, the transaction costs of sending money through mobile payment technology should be lower than those of banks and money transfer companies. On the other hand, Rajanish and Sujoy (2011) found that the cost of mobile financial services was a common complaint among Indian villagers interviewed in their study. Additionally, Nah, Siau, and Sheng (2005), determined that the cost of mobile devices and mobile services was a major investment concern for many potential banking clients. This was supported by a study by Luarn and Lin (2004) who also argued that financial cost was one of the greatest concerns in adoption of mobile banking services. Ram and Sheth (1987; 1989) affirmed that it was not viable for consumers to change their way of performing their banking tasks without offering them a strong performance-to-price advantage.

Laukkanen et al, (2007) stated that the price of banking services may have an opposite effect with respect to the adoption of mobile banking, resulting in consumers preferring the traditional banking services. While users may agree to pay a reasonable fee to use a service, this would depend on both the bank and the mobile service provider. Therefore, the provision of a lower service cost is a major benefit for consumers using mobile banking thus making

the õvalue for moneyö factor another factor influencing the adoption of mobile banking services (Laukkanen et al, 2007).

2.5 Influence of perceived Security Risks on uptake of Mobile Banking technology

Kabir (2013) asserted that customerø perceptions about the risks associated with mobile banking manifests in different dimensions, namely: privacy risk, financial risk, system risk and physical security risk. Lee et al (2009). The first risk is Privacy risk which is a potential loss due to fraud or internet hacking (such as revealing of personal and financial information). The second risk is financial risk which is looked at as the potential for monetary loss and lastly is the system risk can be described as the deficiencies or malfunctions of mobile banking system.
On the other hand, physical security risk is used in reference to any exposure to attacks and threats to the user of mobile banking that may result to physical bodily harm or injury and loss of money.

Consumersø perception of insecurity has been continuously mentioned as the key deterrent against the adoption of mobile banking. A survey conducted by the Federal Reserve determined that 48% of respondents cited concerns about security as their main reason for not using mobile banking. Additionally, 32% of the respondents rated the security of mobile banking for protecting their personal information as somewhat unsafe and very unsafe, whereas 34% were not sure of the security. (Consumer and Mobile Financial Services ,2012).

Pegueros (2012) argues that customersø perceptions may not necessarily be irrational when you analyze the security risks of mobile banking. She asserts that the relative immaturity of mobile banking brings many inherent risks in the areas of new technologies, new inexperienced entrants in the field and the complex nature of the supply chain. A majority of these new entrants may be innovative and dynamic but have minimal experience or attention to the area of security. Mobile application development, mobile hosting and personal privacy are some of the areas that are prone to the highest risk.

Pegueros (2012), further observes that the security risks associated with mobile devices are very similar to those evident in any other computing device with a few key exceptions namely: that mobile devices have a smaller form factor and therefore are more susceptible to loss or theft; secondly, mobile devices are more personal and there will be a tendency for

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users to use devices in a more personal and confidential way, and; lastly, the security controls and tools available have not matured to accommodate the constraints of limited processing power and limited battery life.

A study conducted by Luvanda et al (2014) on Kenyan mobile phone users determined that the majority were more interested with the ease at which they could use their phones to perform financial transactions rather than with the related security issues, in total disregard of the evident manifestation of the latter. The researchers asserted that the increased use of mobile phones in financial transactions also increases the risks associated with such transactions, especially from internet based hackers. This is despite the fact that the majority of the users are unaware of the potential of such attacks. The Kenya Cyber Security Report, 2014 discovered that most local banks have not sufficiently protected their mobile banking services against fraud. The study that focused on thirty three banks revealed that only two had adequate safety measures geared towards securing their customersø money from fraudsters (TESPOK, 2014)

2.6 Influence of Customer Income Level on Uptake of Mobile Banking technology

A study by Monsuwé et al (2004) showed that customers with higher household incomes tended to be more receptive towards adoption of new technologies as compared to those with lower incomes hence indicating the importance of level of income on adoption of mobile banking. As evidenced in the study, low income level is a major deterrent against the adoption and usage of mobile banking, largely due to the cost of acquiring an advanced mobile device and internet connectivity, both regarded as an add-on cost of such banking services.

Research has also indicated the need to balance technology with a reasonable human interface. A study by Lyman et al. (2008) for instance, asserted that individuals with a low income and education status tend to attach a high premium to personal interaction and interpersonal relationships. They prefer face-to-face financial dealings rather than using electronic devices even though the latter are faster and convenient. This is supported by Singh (2004) who determined that the majority of mobile banking users tended to come from high-income groups such as small business owners, salaried employees and senior managers.

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2.7 Theoretical Framework

Over the past three decades, several theories have been developed relating to the intentions to use and subsequent adoption of new technology. Some of the key theories in this respect include:

- The Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975)
- The Technology Acceptance Model (TAM) (Davis, 1989)
- The extended Technology Acceptance Model (TAM2) (Venkatesh & Davis, 2000)
- The Diffusion Innovation Theory (DIT) (Rodgers, 1995)

One of the most significant models used to describe the uptake of new technology is the Technology Acceptance Model. TAM is basically a reconstruction of an earlier model (Theory of Reasoned Action ó TRA) that was adapted to suit the information systems field. Although the TAM model is focused on the adoption of information technology and information systems, it is based on social psychology theory, and has valid and reliable instruments (Luarn & Lin, 2005).

According to TAM, perceived usefulness and perceived ease of use influences a personøs intention to use a system. Perceived usefulness is furthermore viewed as being directly impacted by perceived ease of use (Davies, 1989). He asserts that perceived usefulness and perceived ease of use are the two most important factors in explaining individual usersø adoption intentions and actual usage.
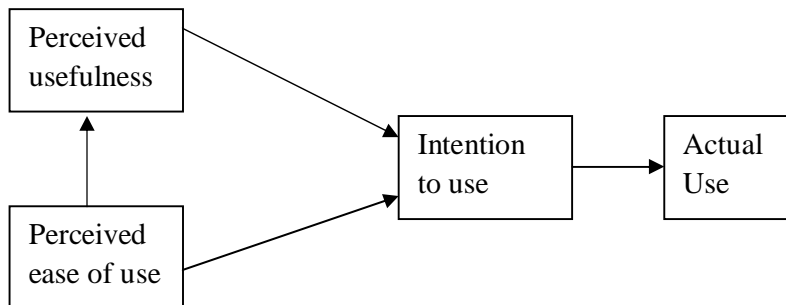
Figure 1: Technology Acceptance Model (TAM)

Source: Davis (1989), Davis, Bagozzi and Warshaw (1989)

Davis (1989) defines Perceived usefulness (PU) as the degree to which a person believes that using a particular system will enhance his or her job performance. On the other hand, Perceived Ease of Use (PEOU) refers to the degree to which the person believes that using the system will be free of effort. According to Masinge (2010), õTAM has been extensively tested and validated and is a widely accepted model, which can be modified or extended using other theories or constructs.ö

A study conducted on Malaysian M-banking adoption revealed that factors such as perceived usefulness (PU), perceived ease of use (PEOU), relative advantages (RA) and personal innovativeness (PI) were positively related to the intention to adopt mobile banking services (Cheah et al, 2011). This further validated and expounded the constructs developed in the TAM model. As mentioned earlier, this study attempted to extend the Technology Acceptance Model (TAM) through adding a few constructs that were relevant to the study. As such, the õperceived ease of useö was considered as an intervening variable that is directly influenced by the aforementioned independent variables and is itself a direct influence on the dependent variable (See Fig. 1 above). Venkatesh & Morris, (2000) asserted that both the direct and indirect effects of perceived ease of use remain important over time. They concluded that a system which is easier to use will facilitate more system use and task accomplishment than systems that are hard to use (Venkatesh & Morris, 2000). This illustrates that this is an important variable that directly influenced the uptake of mobile banking.

Quite a number of previous studies have shown that perceived usefulness is an important antecedent to intention to adopt and use a technology (Davis et al, 1989; Venkatesh, 1999, 2000; Venkatesh & Davis, 2000). The TAM model further illustrates this (Davies, 1989).

2.8 Conceptual Framework

This research study will seek to identify the factors influencing slow uptake of mobile banking among the female customers of KCB ó Nakuru by extending Technology

Acceptance Model (TAM) through adding a few constructs that are relevant to the study. The figure below depicts the dependent and independent variables of the research and the relationship among them. The independent variables include aversion to new technology, customer's level of income, costs of the m-banking service and customer's perceived risk. The intervening variable (intention to use) and moderating variables (perceived ease of use and perceived usefulness) have also been depicted.
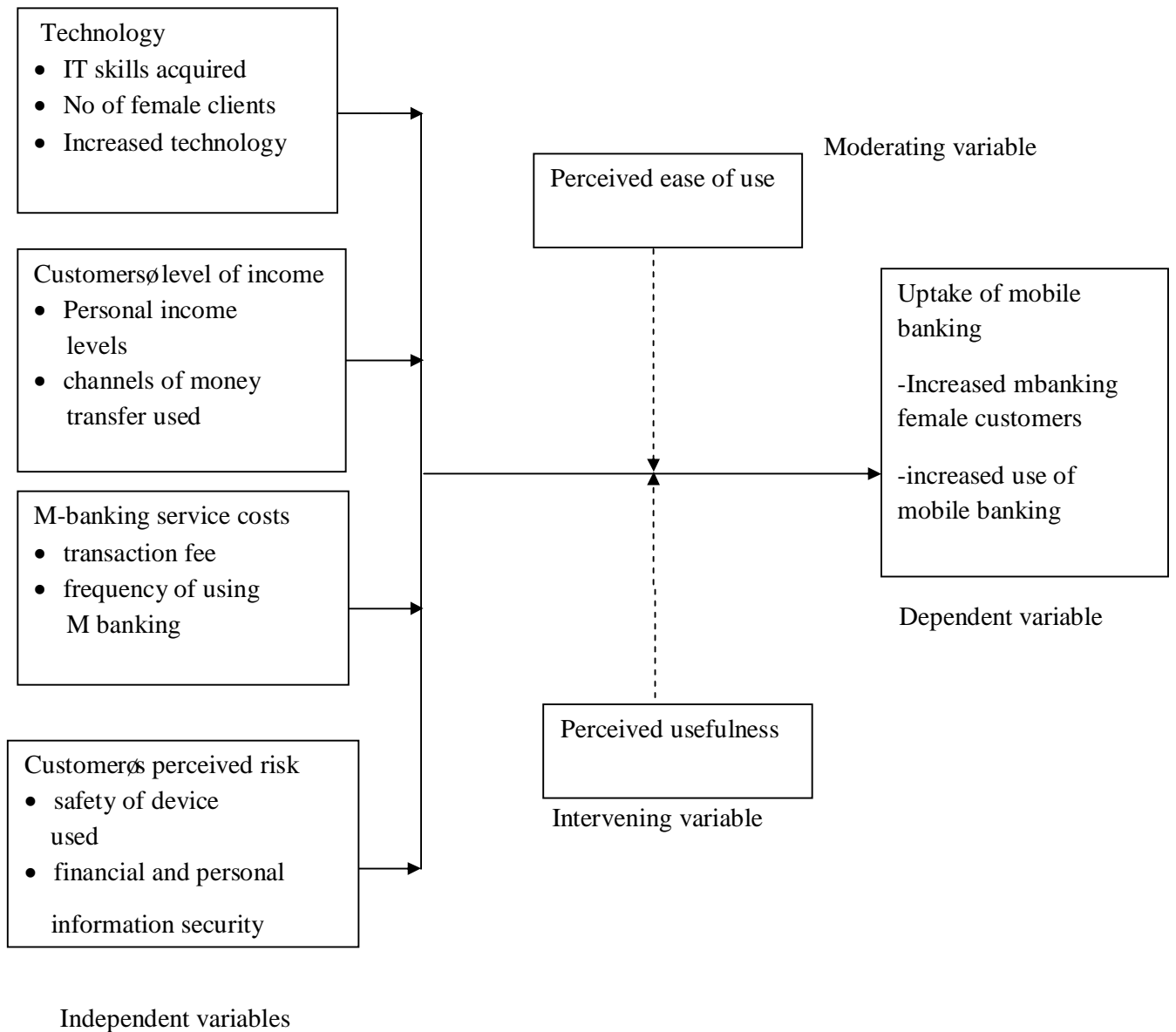
Figure 2: Conceptual Framework

Source:Author

2.9 Summary

This chapter has provided an in-depth literature review. Related studies in Kenya and other countries have been analyzed and reveal that there exists a knowledge gap in understanding factors influencing uptake of mobile banking technology amongst female customers of commercial banks. The literature was divided basing on the variables of the study which included technology, mobile banking service costs, customer income levels and perceived security risks. The theoretical framework linking the variables identified in the study was also reviewed in this chapter and concludes by identifying the conceptual framework and knowledge gaps.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This section highlights the research design, population and sample design, data collection instruments and procedures, and data analysis procedures that were employed in the study.

3.2 Research Design

Research design, according to (Kothari, 2004), constitutes the blueprint for collection, measurement and analysis of data. According to Mugenda and Mugenda (1999), research design is a systematic inquiry in to which the researcher does not have direct control to the independent variable because their manifestation has already occurred. A descriptive survey was used for this study. Mugenda and Mugenda (1999) observe that descriptive survey attempts to describe such things as possible behavior, attitude, values and characteristics. He further describes that descriptive data is collected in order to answer questions concerning the current status of the subjects in the study and whenever possible draw conclusions from the facts discovered. The design was appropriate for the study because it allowed collection of reliable data for factors influencing pertaining to the research problem directly from the field in a highly economical way. Descriptive survey was appropriate for the study as it enabled designed to the researcher establish the factors influencing the slow uptake of mobile banking amongst female customers of Kenya Commercial Bank - Nakuru town

3.3 Target Population

The target population for this study was the female customers of KCB ó Nakuru Town. The bank is comprised of three branches spread across Nakuru town, namely: Nakuru town Branch, Flamingo Branch, and Menengai Branch. The three branches have a total of 47,995 account holders out of which 20,595 are considered to be eligible for mobile banking. The study targeted 40 staff members of KCB- Nakuru town and About 4,900 of the bankøs female customers who are eligible for mobile banking all of whom will represent the total target population for the study (see Table 1 below).

Table 3.1: Population Characteristics

Branch	Total No. of Customers	No. of customers eligible for M-banking	No. of female customers eligible for M-banking
Nakuru	29,000	11,310	3,166
Flamingo	9,000	5,130	1539
Menengai	9,995	4,155	1870
TOTAL	47,995	20,595	6575

3.4 Sampling Procedure

3.4.1 Sample Size

Sample size is a small part of the population to be studied and sampling procedure is the process by which samples are selected in a study (Kothari, 2007). The of the total sample size of the study was 390 respondents as per the sampling procedure below.

3.4.2 Sampling Procedure

This is the strategy that is used to select representative elements from the accessible population. Simple random sampling was used to select the female customers that were eligible for mobile banking and a census on the 30 female staff members of KCB-Nakuru Town. Simple random sampling is favorable where the group is larger or large population. Each individual member has an equal opportunity of being included in the sample.According to Mugenda and Mugenda (2003), in social science research, the following formula can be used to determine the sample size.

If the target population is less than 10,000, the sample size is determined using the following formula;

$$nf = \frac{n}{1 + n/N}$$

Where:

nf= desired sample size when the population is less than 10,000.

n = desired sample size when the population is more than 10,000

N = estimate of the population size.

Therefore, the sample size for the study was:

$$nf = \frac{384}{1 + 384/6575} = 360$$

Using the above formula a sample size of 360 female customers was derived from a sampling frame of 6575 female customers. A complete census was taken from all the 30 female front office female staff of the three KCB Nakuru town branches. This gave a total sample size of 390 respondents.

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3.5 Data Collection Procedure

The researcher wrote an official letter to the Branch Manager requesting permission to carry out the study in the organization. Once permission was granted, the researcher prepared questionnaires which were approved by the research supervisor before being administered to the selected respondents. Questionnaires were thereafter distributed to 360 female customers randomly selected from a sampling frame that lists all the female customers who are eligible for mobile banking and the entire 30 female front office staff of KCB Nakuru town.

Questionnaires were the main instruments used in primary data collection. Secondary data however was obtained from various books, internal reports, journals and the internet. The questionnaires were administered to the respondents on a drop and pick-up later basis.

3.6 Validity and Reliability of Research Instruments

Validity refers to the degree to which an instrument measures what it is supposed to. The validity of the instrument was ascertained using expert judgment. The researcher discussed

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the instruments with the supervisor to determine whether they would be able to elicit responses and information that could facilitate the achievement of the study objectives. This was done by ensuring that the indicators as per each variable were appropriate and that the sample was a representative of the population.

Reliability is the extent to which an experiment tests or any measuring procedure yields the same results on repeated trials (Mugenda & Mugenda, 1999). It can also be referred to as the extent to which the measurement or tests of the same subject under identical conditions gives the same results. Reliability of the instruments was determined by conducting a pilot study of 10 female customers of KCB Menengai branch to pretest the instrument. Those who were involved in the pilot study did not form part of the final study. Test retest technique was used by employing Pearson's product moment formula for the test- retest to compute reliability coefficient. A coefficient of 0.80 is taken to be reliable (Mugenda & mugenda, 2003). Table 3.1 show the results obtained after computing the test retests reliability statistics.

Table 3.2: Test Retest Reliability

		Test 1	Test 2
Test 1	Pearson Correlation	1	.871[**]
	Sig. (2-tailed)		.000
	N	278	278
Test 2	Pearson Correlation	.871[**]	1
	Sig. (2-tailed)	.000	
	N	278	278
**. Correlation is significant at the 0.01 level (2-tailed).

3.7 Data Analysis Procedure

After collection of the data, it was first coded then analyzed using descriptive statistics which included cross tabulation, frequencies and percentages and descriptive summaries. Correlation analysis was thereafter used to establish the interaction of the results in the study. The results were then presented in the form of tables for ease of interpretation.

3.8 Summary

Summarily, the study adopted the descriptive survey design in which the target population was the female customers of Kenya Commercial Bank ó Nakuru town who were selected using simple random sampling. The questionnaire was the main data collection instrument which was administered to the selected respondents. Applicable tests were also employed to ensure reliability and validity of the research instruments. Both descriptive and correlation statistics were utilized during data analysis

3.9 Operational Definition of Variables

Variable	Type of Variable	Indicator	Measurement Scale	Instrument	Statistical Analysis
Influences of Technology	Independent	-No of female clients using technology. -increased skills in Technology	-Nominal -Scale	Questionnaire	Descriptive Statistics. Correlation statistics Qualitative analysis
M-banking service costs	Independent	-Transaction fees -Frequency in use of M-banking	-Nominal -Scale -Ordinal	Questionnaire	Descriptive Statistics. Correlation statistics
Customers Income Levels	Independent	-Availability of personal income. -Other channels of money transfer used.	-Nominal -Scale	Questionnaire	Descriptive Statistics. Correlation statistics
perceived security risk	Independent	-Safety of device used - Security of personal or financial information. - security of the funds accessible through the service	-Nominal -Scale	Questionnaire	Descriptive Statistics. Correlation statistics
uptake of mobile banking	Dependent	-Increased M-banking female clients. -Increased use of banking services -Income passing through the bank	-Scale	Questionnaire	

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSIONS

4.1 Introduction

This chapter presents the results of the data analyzed. Presentations and interpretations have been given. Descriptive and correlation statistics have been employed. Presentations have been done using tables for uniformity and ease of interpretations.

4.2 Questionnaire Return Rate

Out of the 390 questionnaires issued, 278 were filled and returned representing a questionnaire return rate of 71% which was considered adequate enough and could be used for generalization of similar studies. Table 4.1 presents the return rate.

Table 4.1 Questionnaire Return Rate

	Issued	Returned	Percent
Questionnaires	390	278	71

4. 3 Demographic Information of Respondents

To better understand and conceptualize the study, back ground information was undertaken. A presentation of the demographic information is given in Table 4.2. The study established that respondents between 20 ó 30 years had 48.2%, 31 ó 40 years had 35.3%, 41 ó 50 years had 9.4% and above 50 years had 7.2%, but this did not vary between the respondents (x^2 =134.029, df=1, p<0.001). This meant that a majority of the respondents were 20 ó 30 years of age, which comprise the youthful age bracket.

On marital status, the respondents who are married were 45.3%, the single were 43.9%, divorced were 8.6% and widowed were 2.2%, but this did not vary between the respondents (x^2 =173.396, df=1, p<0.001). This meant that a slight majority of the respondents were married.

On the highest level of education, no schooling had 2.9%, primary had 9.4%, secondary had 15.1%, college had 25.2%, undergraduate had 37.4% and post graduate had 10.1%, but this did not vary between the respondents (x^2 =132.158, df=1, p<0.001). This meant that most respondents had undergraduate level of education.

On the employment status, self-employed had 25.9%, employed had 41%, casual had 7.9%, contractual had 7.2%, student had 15.1%, and those not working were 2.9%, but this did not vary between the respondents (x^2 =172.906, df=1, p<0.001). This meant that most of the respondents were employed.

Table 4.2: Demographic Information of Respondents

Variable	Frequency	Percentage	Chi-square	P value
Age of respondents				
20-30 years	134	48.2		
31-40 years	98	35.3		
41-50 years	26	9.4	134.029	0.001
Above 50 years	20	7.2		
Marital Status				
Married	126	45.3		
Single	122	43.9		
Divorced	24	8.6	173.396	0.001
Widowed	6	2.2		
Highest Level of Education				
No schooling	8	2.9		
Primary	26	9.4		
Secondary	42	15.1		
College	70	25.2	132.158	0.001
Undergraduate	104	37.4		
Post Graduate	28	10.1		
Employment Status				
Self Employed	72	25.9		
Employed	114	41.0		
Casual	22	7.9	172.906	0.001
Contractual	20	7.2		
Student	42	15.1		
Not Working	8	2.9		

The respondents were asked whether they were registered user of mobile banking. The findings of the study have been presented in Table 4. 3.

Table 4.3: Registered User of Mobile Banking

	Frequency	Percent
Yes	226	81.3
No	52	18.7
Total	278	100.0

From the results presented in Table 4.3, it was revealed that 81.3% of the respondents indicated that they were registered users of mobile banking while 18.7% were not. This meant that most of the respondents in the study were registered users of mobile banking. Being registered as a mobile user implied the female customers were at least conversant with technology.

There was need to determine the reasons as to why the 18.7% were not registered using mobile banking. The responses included: it was risky registering with M-banking, others did not know how to use M-banking, not aware of availability of M-banking, lack of interest, no need to use M-banking, not safe and high cost transaction charges and availability of other means of saving.

Of the 81.3% who affirmed to be registered users, they were required to indicate the frequency of their use. The findings are presented in Table 4.4 as follows.

Table 4.4: Frequency of the use of Mobile Banking

		Frequency	Percent
	Daily	34	12.2
	Weekly	64	23.0
	Monthly	90	32.4
	Rarely	38	13.7
	Total	226	81.3
	Not Applicable	52	18.7
Total		278	100.0

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On the frequency of the use of mobile banking as depicted in Table 4.3, those who used mobile banking daily were 12.2%, weekly had 23%, monthly had 32.4% and rarely had 13.7%. This meant that majority of the respondents used mobile banking monthly and it could be deduced that the monthly transactions were as a result of processing salaries.

4.4 Influence of Technology on Mobile Banking Uptake

The first objective of the study sought to determine the extent to which technology influences uptake of mobile banking amongst female customers of KCB Nakuru Town. To this effect, there was need to understand whether the respondents had any IT skills. A presentation of the findings has been given in Table 4.5

Table 4.5: Possession of Information Technology Skills

	Frequency	Percent
Yes	262	94.2
No	16	5.8
Total	278	100.0

The study established that 94.4% of the respondents affirmed to having information technology skills, while 5.8% were of the contrary. This meant that most respondents in the study possessed of information technology skills. And further could use mobile banking due to the skills they possess. This study differs with most studies conducted as it shows the use of technology by women. Venkatesh and Morris (2000) were of the view that males were more responsive more responsive to technological innovation than females hence more likely to adopt mobile banking. Further other studies by Monsuwé (2004) and Laforet (2005) confirmed that men tended to exhibit greater interest with using different types of technology. This study however showed majority of the respondents could use technology hence an indicator that women do not have an aversion to technology.

Further, the 94.2% who indicated they possessed information technology skills were required to indicate the skills that they possessed. A multiple analysis was undertaken to this effect and the results presented in Table 4.6.

Table 4.6: Information Technology Skills Multiple Response

		Responses		Percent of Cases
		N	Percent	
ITskills[a]	Use of computer	181	29.0%	92.3%
	Use of internet	158	25.3%	80.6%
	Use of smart phone	146	23.4%	74.5%
	Navigate all forms of Information technology	140	22.4%	71.4%
Total		625	100.0%	318.9%
a. Dichotomy group tabulated at value 1.				

On use of information technology multiple response as depicted in Table 4.6, the use of computer had 29% and 92.3% of cases. The use of internet had 25.3% and 80.6% of the cases. The use of smart phone had 23.4% and 74.5% of cases. Those who reiterated that they could navigate all forms of Information technology had 22.4% and 71.4% of cases. This meant that the use of computer was the most common technology that most respondents affirmed that they used.

Lin (2011) further suggests that m-banking providers need to ensure that their m-banking applications are compatible with the lifestyle and preferences of their target markets. Dass and Pałøs (2009) study, unlike other studies of similar context, state that customers are not ready for such technologies because of the lack of awareness from banking power houses. According to Amin (2007), it is imperative to create confidence about systems such as the Internet and m-banking among potential users by providing them with sufficient information about the systems and its benefits. He further states that electronic banking providers should provide sufficient training and support for users to continue embracing the technology.

There was further need to establish where the respondents had acquired the information technology skills. A presentation of the findings is given in Table 4.7

Table 4.7: Source of Information Technology skills

	Frequency	Percent
Process of education and learning	151	54.3
Professional training	41	14.7
Work training	25	9.0
Personal initiative	43	15.5
Apprenticeship	2	0.7
Total	262	94.2
Not Applicable	16	5.8
Total	278	100.0

On source of information technology skills as depicted in Table 4.7, process of education and learning had 54.3%, professional training had 14.7%, work training had 9%, personal initiative had 15.5% and apprenticeship had 0.7%. This meant that most respondents had the process of education and learning as their main source of information technology skills. Learning is a continuous activity throughout life hence it can form a good basis for acquisition of information technology skills. 5.8% of the respondents had no response on the matter because they had previously mentioned that they did not possess information technology skills.

Of those who indicated they could not use IT skills, they were required to indicate whether lack of IT skills hindered them from using mobile banking. A presentation has been tabulated on 4.8.

Table 4.8: Lack of IT skills and Hindrance on Mobile Banking Usage

	Frequency	Percent
Yes	6	2.2
No	10	3.6
Total	16	5.8
Not Applicable	262	94.2
Total	278	100.0

The findings established that 2.2 were of the view that not having IT skills hindered them from using mobile banking. 3.6% opined that not having IT skills did not keep them from using mobile banking. This implied that navigation and use of mobile banking did not necessarily hinder the female bank customers from using mobile banking. Further Barnes and Corbitt (2003) indicate that mobile banking is a channel that allows the customer to interact with the bank through a mobile device thus this is seen as an easy process that can be used by even those who do not IT skills. 94.2% of the respondents had IT skills as presented in Table 4.5 earlier.

The study additionally sought to establish what kept the respondents from using technology. Table 4.9 presents the findings of the study.

Table 4.9: Hindrance from using Technology

	Frequency	Percent
Lack of interest	11	4.0
Expensive	11	4.0
Domestic chores	2	0.7
Lack of family approval	2	0.7
No reason	14	5.0
Total	40	14.4
Not Applicable	238	85.6
Total	278	100.0

On the hindrance of suing technology as shown in Table 4.8, both lack of interest and technology being expensive had 4% each. 5% of the respondents did not have any reason as to why they were not using technology. Hindrance as a result of domestic chores and lack of family approval had 0.7% respectively. This implied that domestic related issues did not majorly hinder women from using technology.

The ease of use of mobile banking was ranked and presented in Table 4.10 as follows

Table 4.10: Ease of using Mobile Banking

	Frequency	Percent
Not easy	43	15.5
moderately easy	93	33.5
Very Easy	130	46.8
Total	266	95.7
No response	12	4.3
Total	278	100.0

On the rate of ease of using mobile banking as depicted in Table 4.9, not easy had 15.5%, moderately easy had 33.5% and very easy had 46.8%. This meant that from the response, most respondents mentioned that it was very easy to use mobile banking. This study agrees with the theory used by Davies (1989) who was of the view that perceived ease of use influences a personøs intention to use a system. It is expected that since the respondents rated mobile banking as very easy to use, the usage and its uptake should have an upward trend.

A multiple response analysis was taken to establish what influences the decisions by the female bank customers to adopt mobile baking. Table 4.11 presents the findings of the study.

Table 4.11: Factors that Would Influence the Decision to Adopt Mobile Banking

		Responses		Percent of Cases
		N	Percent	
factor1[a]	Convenience	120	21.2%	69.8%
	Security of funds	132	23.4%	76.7%
	Keeping up to date with new technology	143	25.3%	83.1%
	Desire to save	170	30.1%	98.8%
Total		565	100.0%	328.5%
a. Dichotomy group tabulated at value 1.				

On the multiple responses on the factors that would influence the decision to adopt mobile banking as shown in Table 4.11, convenience had 21.2% and 69.8% of cases. Security of

funds had 23.4% and 76.7% of cases, keeping up to date with new technology had 25.3% and 83.1% of cases and desire to save had 30.1% and 98.8% of cases. This means that according to most respondents, the most prominent factor that would influence the decision to adopt mobile banking is the desire to save. Mobile banking makes it easier to save any money at a customerøs disposal as it can be banked in the most easily and efficient way.

The finding of the study resonates well with Koivu (2002) who is of the view that an appropriate banking environment is considered a key pillar as well as an enabler of economic growth. With the continuously emerging wave of information driven economy, the banking industry in Kenya has inevitably found itself unable to resist technological indulgence. The need for convenient ways of accessing financial resources beyond the conventional norms has seen the recurrent expansion and modernization of banking patterns. And given the huge demand for finance oriented services, institutions beside the historical banks have joined the fray in an attempt to grab a piece of the perceived cake of opportunity within the banking industry.

There was further need to identify factors that prevents female bank customers from adapting to mobile banking. A multiple response analysis was undertaken and the findings presented in Table 4.12 showing both the percent cases and percent responses.

Table 4.12: Factors that Prevent Female Bank Customers from Adopting Mobile Banking

		Responses		Percent of Cases
		N	Percent	
factor2[a]	Cost of service	132	14.6%	62.0%
	Security of funds	160	17.7%	75.1%
	Security of the mobile device	128	14.1%	60.1%
	Disinterested in the new technology	175	19.3%	82.2%
	Personal level of income	119	13.1%	55.9%
	System malfunction preventing access to your funds	192	21.2%	90.1%
Total		906	100.0%	425.4%
a. Dichotomy group tabulated at value 1.				

On the factors that prevent female bank customers from adopting mobile banking as depicted in Table 4.12, cost of service had 14.6% and 62% of cases. Security of funds had 17.7% and 75.1% of cases, security of the mobile device had 14.1% and 60.1% of cases and disinterested in the new technology had 19.3% and 82.2% of cases. Personal level of income had 13.1% and 55.9% of cases and system malfunction preventing access to your funds had 21.2% and 90.1% of cases. The study deduced that the most common factor that prevents the female bank users from using technology was malfunctioning of the system which prevents access to funds.

4.4 M-banking Service Costs and Uptake of Mobile Banking

The second objective sought to establish the extent to which m-banking service costs influences uptake of mobile banking amongst female customers of KCB Nakuru Town. There was need to establish how much the female bank customers used as M-banking service cost on average. Tabulation has been provided in 4.13

Table 4.13 Average Cost of M- Banking Service

	N	Minimum	Maximum	Mean	Std. Deviation
Average cost of M banking service	231	2	3000	374.55	527.570

With a minimum of 2 and a maximum of 3000 it was established that the average banking cost for most female bank customers was 375. The standard deviation was 527 which indicated a very big dispersion from the mean. It was then deduced that the cost of transactions on an average was affordable as it was below 500Ksh. This was further interpreted to mean that cost that are considered small do not limit the use of M-banking by female bank customers. The total number of responses was only 231 which implied the question did not apply to the 47 remaining respondents.

To better understand the cost for M- banking services, there was need rate how the affordability of M-banking services. Table 4.15 presents the findings of the study.

Table 4.14 Affordability of M banking Services

	N	Minimum	Maximum	Mean	Std. Deviation
Affordability of M banking services	278	1	10	6.49	2.303

It is indicated in Table 4.14 that affordability was rated with a mean of 6.49 which was towards a large extent. This implies that majority of the respondents were of the opinion that M-baking was affordable. The results of the findings differed significantly with a study conducted by Luo, Zhang and Shim (2010) who revealed that customers perceive the cost of the technology to be very high. This perception could be as a result of t lack of awareness about m-banking; this implies that with increased awareness there is also increased use of m-banking as the customers become aware of the charges they use for carrying out M-banking transactions.

There was further need to establish the extent to which the cost of M-banking services influences frequency of customerøs use of the service

Table 4.15: Cost of the Mobile Banking Service Influencing the Frequency of Service Usage

	Frequency	Percent
Rarely	80	28.8
Moderate	130	46.8
Always	60	21.6
Total	270	97.1
System	8	2.9
Total	278	100.0

As shown In Table 4.15, the extent of cost of mobile banking influencing the frequency of use indicate that 28.8% were of the opinion that the cost rarely influenced the frequency of their use, 46.8% suggested that the cost moderate influenced the frequency of their use while 21.6% indicated that the cost always influenced the frequency of their use of mobile banking. It was then deduced that cost had a moderate influence implying use of M-banking services is not entirely restrained by the cost of the service. Mallat (2007) on the other hand argues that

the cost of a payment transaction has a direct effect on consumer adoption if the cost is passed on to customers. He further advances that the transaction costs should be low to make the total cost of the transaction competitive. Thus, the transaction costs of sending money through mobile payment technology should be lower than those of banks and money transfer companies. Additionally, Nah, Siau, and Sheng (2005), determined that the cost of mobile devices and mobile services was a major investment concern for many potential banking clients.

There was need to determine whether the female bank clients had failed to transact as a result of high banking costs. A presentation of the findings has been done in Table 4.16.

Table 4.16: Transaction Failure Due to High Costs

	Frequency	Percent
Yes	98	35.3
No	159	57.2
Total	257	92.4
Missing System	21	7.6
Total	278	100.0

From Table 4.16, it is clear that most respondents had not failed to transact as a result of high transaction cost as indicated by 57.2%. Those who had failed on the other hand were 35.3% while 7.6% did not give a response on whether they had failed to transact or not. This meant that a majority of the respondents were of the opinion that they had not failed to transact as a result of high costs of services.

4.5 Customer Income Level and Uptake of Mobile Banking

The study sought to evaluate the extent to which customer income level influences uptake of mobile banking. The respondents were required to indicate whether they use banking services. Table 4.17 indicates that 97.1% used banking services while only 2.9% did not use banking services. A deduction was made implying the majority of the study's respondents used banking services. Use of banking services further is a pointer to use of the different digital banking channels one of them being the M-banking services. Further it was deduced

that use of banking services is a pointer that the female bank customers at least had incomes that enabled them use these services.

Table 4. 17: Use of Banking Services

	Frequency	Percent
Yes	270	97.1
No	8	2.9
Total	278	100.0

To understand the income levels of the respondents, a cross tabulation between whether the female bank customers had incomes and the average income was undertaken. A presentation is given in Table 4.18.

Table 4.18 Cross Tabulation between Having an Income and Average Income

		Do you get an income		Total
		Yes	No	
	NA		13.3%	13.3%
	Below 5,000	12.6%		12.6%
	6-10,000	12.2%		12.2%
If yes, what is your average income?	11-20,000	16.5%		16.5%
	21-30,000	11.5%		11.5%
	40,000-50,000	14.0%		14.0%
	60,000 and above	19.8%		19.8%
Total		86.7%	13.3%	100.0%

It was established that majority of the respondents had an income as presented by 86.7%. Only 13.3% did not have an income. Further there was need to check the average income of the female bank customers, 19.8% who were the majority had an average income of 60,000 and above, this was followed by 14% who had an income of between 40,000- 50,000. The least income bracket was 21,000-30,000 presented by 11.5%. From this finding it was inferred that the average incomes of the female bank customers was considerably high to enable them use M-banking services. Monsuwé et al (2004) study can be used to explain the findings of this study. They are of the view that customers with higher household incomes tended to be more receptive to adoption of new technologies as compared to those with lower

incomes hence indicating the importance of level of income on adoption of mobile banking. Low income levels deters adaption and usage of M-banking largely due to the cost of acquiring an advanced mobile device and internet connectivity, both regarded as an add-on cost of such banking services.

There was need to understand weather the incomes of the respondents passed through a bank account. A presentation of the findings is indicated in Table 4.19 as follows.

Table 4.19 Income through the Bank

	Frequency	Percent
Yes	198	71.2
No	80	28.2
Total	278	100.0

Majority of the respondents (71.2%) indicated their income passed through the bank while 28.2% did not pass through the bank. Having income passing through the bank is an indicator of the possibilities of using M-banking by female bank customers.

There was further a need to establish whether the level of income was an important consideration affecting the uptake of mobile banking among female bank customers. Table 4.20 indicates that 79.5% of the respondents agreed, 16.9% of them disagreed and 3.6% had no response. This implies that income levels play a very important role in the uptake of M-banking by female bank client. Higher income levels lead to use of M-baking and the reverse is true. This study resonates well with Lyman et al. (2008) who asserts that individuals with a low income and education status tend to attach a high premium to personal interaction and interpersonal relationships. They prefer face-to-face financial dealings rather than using electronic devices even though the latter are faster and convenient. Further, Singh (2004) supports the notion and argues that the majority of mobile banking users tended to come from high-income groups such as small business owners, salaried employees and senior managers.

Table 4.20: Income Level Influencing the Uptake of Mobile Banking

	Frequency	Percent
Yes	221	79.5
No	47	16.9
Total	268	96.4
No response	10	3.6
Total	278	100.0

Further the extent of income levels influencing on the use of mobile banking was sought and the findings presented in Table 4.21.

Table 4. 21: Extent of Income Levels and its Influences on use of Mobile Banking

	Frequency	Percent
Rare	73	26.3
Moderate	119	42.8
Always	76	27.3
Total	268	96.4
System	10	3.6
Total	278	100.0

Table 4.21, indicates that 42.8% were of the opinion that on moderate extent income levels the respondents were inquired on the extent to which the income level influences on the use of mobile banking technology, 27.3% indicated that the income levels always influences use of M-banking while 26.3% opined that income levels rarely influenced on the uptake of mobile banking. From the findings of the study, it was thus construed that income levels moderately influence uptake of M-banking by female bank customers.

Lastly there was a need to establish the reasons as why the female bank customers did not use M-banking. Table 4.22 show that 51.1% had other ways of transaction thus they did not use M-banking. 30.2% argued that they had too little income which kept them from using mobile banking services. 3.6% indicated they did not use M-banking due to various reasons such as lack of security and availability of ATM services. The Study thus comprehended that availability of other ways of transacting kept majority of the female bank customers from

using M-banking. This further is an indicator that convenience is paramount while making financial transactions thus individuals will use the channel that they feel most convenient.

Table 4. 22: Reasons for Not Using Mobile Money

		Frequency	Percent
	Too little income	84	30.2
	Money does not pass through the bank	18	6.5
	I see no use of using it	14	5.0
	I have other ways of transacting	142	51.1
	Others	10	3.6
	Total	268	96.4
Missing	System	10	3.6
Total		278	100.0

4.6 Influences of Perceived Security Risks and Uptake of Mobile Banking

The last objective of the study sought to assess the extent to which perceived security risk influences uptake of mobile banking. There was a need to rate whether the respondents money was secure using M-banking. Table 4.23 reveals that with a minimum of 1 and a maximum of 10, the mean of security as a result of M-banking was 6.21 which implied the female bankers felt their money was moderately secured. The standard deviation was 2.562 implying the dispersal was two points away from the mean. This finding indicates that the bank customers view their money as being secure. This finding further differ with research conducted by Federal Reserve that documented that 48% of respondents cited concerns about security as their main reason for not using mobile banking.

Table 4.23: M-banking and Security of Money

	N	Minimum	Maximum	Mean	Std. Deviation
M-banking and security of money.	274	1	10	6.21	2.562

There was need to determine whether the female bank customers had lost money as a result of transacting using M-banking. Table 4.24 reveals that 68% of the respondents had not lost money while transacting while 32% affirmed to losing money while transacting. This implied that M-banking was safe as majority had not lost money in the process of carrying out transactions. The study resonates well with a study conducted by Luvanda et al (2014) who argue that the majority of M-banking users were more interested with the ease at which they could use their phones to perform financial transactions rather than with the related security issues.

Table 4.24: Losing Money while transacting using Mobile Banking

	Frequency	Percent
Yes	89	32.0
No	189	68.0
Total	278	100.0

There was need to determine the risk associated with use of mobile banking. It is indicated in Table 4.25 that security of personal information presented by 44.6% was perceived as the most risky element. This was followed by 32.4% who were of the view that Security of the funds accessible through the service could be considered as risky. Only 21.6% opined that loss or theft of the mobile devise presented a great risk. From the study, it can be comprehended that there are risks associated with M-banking thus the study resonates well with the Kenya Cyber Security Report (2014) that discovered that most local banks had not sufficiently protected their mobile banking services against fraud.

Table 4.25: Risks while using M-banking

	Frequency	Percent
Loss or theft of the mobile device	60	21.6
Security of personal or financial information	124	44.6
Security of the funds accessible through the service	94	33.8
Total	278	100.0

4.7 Correlation Analysis

There was need to determine the relationship between the dependent and the independent variables. To this effect, a Pearson correlation was undertaken to check the direction and strength of the relationship.

Table 4.26: Correlation Analysis

		Uptake of M-banking	Influences of Technology	Influences of Cost	Influences of income levels	Perceived security risk
Uptake of M-banking	Pearson Correlation	1	.			
	Sig. (2-tailed)					
	N	274				
Influences of Technology	Pearson Correlation	.278**	1			
	Sig. (2-tailed)	.000				
	N	263	267			
Influences of Cost	Pearson Correlation	-.310**	.367**	1		
	Sig. (2-tailed)	.000	.000			
	N	261	261	265		
Influences of income levels	Pearson Correlation	.583**	.065	-.050	1	
	Sig. (2-tailed)	.000	.299	.428		
	N	263	256	254	267	
perceived security risk	Pearson Correlation	-.683**	.036	-.239**	.136*	1
	Sig. (2-tailed)	.000	.564	.000	.027	
	N	274	265	263	265	276

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4.26 presents the correlation values of the variables. On influence of technology, there was a weak positive correlation between influence of technology and uptake of M-banking among female bank customers. R= .278 which is significant at p= 0.00< (0.005) implying an increase in adaption to technology by female bank customers leads to an increase in uptake of mobile banking. However the relationship is weak implying lack of skills in technology does not hinder women from using M-Banking.

On influences of costs, the study established that there was a weak negative correlation between the cost of services and uptake of M-banking among female bank customers. R=-310 significant at 0.00< (0.005) which implied that a decrease in the cost of service would lead to an increase in uptake of M-banking. The weak correlation could further be interpreted that cost had nothing to do with the uptake of M-banking as the female customers felt the cost was affordable and further majority had never failed to transact as a result of high cost of services.

The study established that there was a moderate positive correlation between income levels and use of M-banking. With an r value of .053 and a p value of 0.000< (0.005), this implied that an increase in income levels of the female bank customers led to an increase in uptake of mobile banking. It was ten concluded that income levels influences uptake of M-banking among female bank customers.

Lastly on perceived security risk there was a negative strong correlation between the two variables. R=-.683 which was further significant at p= 0.00< (0.005) implying a reduction in the perceived security leads to an increase in the uptake of mobile banking among female bank customers. It was deduced that perceived security risks had an influence on M-banking uptake.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter presents the summary, conclusion and recommendation of the study. The chapter is based on the findings as presented in chapter four. Suggestions for future studies have also been presented.

5.2 Summary of Key Findings

There was a questionnaire return rate of 71% with majority of the respondents being between the ages of 20-30. A slight majority of the respondents were married (45.3%). Most of the respondents had university education as presented by 37.4%. Further 41% were employed. 81% who were the majority were registered users of M-banking compared to 18.7% who were not. The registered M-banking users indicated that their frequently used the M-banking services on a monthly basis.

On influence of use of technology, 94.2% of the respondents had IT skills, with use of computers being ranked as the most skill possessed by the female bank clients. The skills were acquired through the process of education and learning (54.3%). Lack of IT skills did not hinder the female bank customers from using M-banking services. 5% of the respondents did not have any reason as to why they did not use modern technology; others indicated lack of interest while some were of the view that the given technology was expensive indicated by 4% respectively. The study established that it was very easy to use M-banking. Most female bank customers use M-banking due to the need to save, however malfunctioning of systems was taken as the major factor that prevented female bank customers from adapting M-banking. There was a weak positive correlation between influence of technology and uptake of M-banking among female bank customers. R= .278 significant at p= 0.00< (0.005).

The average cost of M-banking services was 375Kshs which was considered affordable as it was below 500Kshs, Further the affordability was presented with a mean of 6.49. It was further indicated that the cost of M-banking moderately influenced on the frequency of use of the M-banking services. 57.2% who were the majority had not failed to transact as a result of

high banking costs. There was a negative weak correlation between cost of services and uptake of M-banking among female bank customers. R=-310 significant at 0.00< (0.005) which implied that a decrease in the cost of service would lead to an increase in uptake of M-banking.

Majority of the female bank customers (97.1%) used banking services which was a pointer of availability of income by the female bank customers. 86.7% indicated they had income with the 19.8% who were the majority having an average income of 60,000 and above. 71.2% of the female bank clients had their income passing through the bank. 82.5% were of the view that income levels influences uptake of M-banking among female bank customers. 51.1% who represented the majority did not use M-banking as they had other ways of carrying transactions. There was a moderate positive correlation between income levels and use of M-banking with an r value of .053 and a p value of 0.000< (0.005).

Lastly, on perceived security risks and its influence on M-banking uptake, it was revealed that the female bankers felt their money was secured while using M-banking. 68% who were the majority felt confident using M-banking since they had never lost money while carrying out any M-banking transaction. Security of personal information was perceived as the most risky element while using M-banking. There was a negative strong correlation between the two variables. R=-.683 which was further significant at p= 0.00< (0.005).

5.3 Conclusions

Based on the findings of the study, it was concluded that:

It is concluded that most of the female bank customers were in possession of information technology skills with computers being the most used form of technology which was an indicator of lack of aversion to technology skills by women as mostly believed. The information technology skills were acquired in the process of education and learning. Domestic related issues did not majorly hinder women from using technology with the desire to save being the most prominent factor that influenced the decision to adopt mobile banking by female bank customers. It was concluded that technology skills had an influence on uptake of M-banking by women although lack of it also did not keep women from using M-banking.

On the influences of cost on uptake of M-baking, the study concludes that M-banking was affordable as indicated by the small average banking costs. Use of M-banking services is not entirely restrained by the cost of the service further, the majority of the respondents had not failed to transact as a result of high costs of services.

It was concluded that most of the female bank customers used banking services which was a pointer to use of M-banking and further an indicator that the female bank customers had Incomes that enabled them use these services. The average income of the female bank customers was considerably high to enable them use M-banking services. Having income passing through the bank is an indicator of the possibilities of using M-banking by female bank customers. Customers chose convenience while making transactions thus the availability of other ways of transacting kept majority of the female bank customers from using M-banking. Income levels play a very important role in the uptake of M- banking by female bank client. Higher income levels lead to use of M-baking and the reverse is true.

It was concluded that the female bankers felt that their money was secured while using M-banking, although there are risks associated with this type of services. Perceived usefulness was considered important thus majority of the female bank clients would be concerned with how useful the M-banking service was. Perceived security had an influence on the up take of M-banking.

5.3 Recommendations

From the research findings, the researcher recommends the following:

i.   On technology, the study recommends that there is need to come up with systems that function properly to enable increase in use of technology. Further there is need to provide training to support users continue with use of technology.

ii.   There should be a cost differentiation between those who cannot afford to use M-banking and those who can, this will ensure absorption of female bank client of all income levels. This can be done through provision of incentives to provide a better and friendly avenue for the community to get involved in m-banking.

iii.   There is need to come up with adequate safety measures to ensure customers money is secure. Security should be all round from ensuring money is protected in case of loss

of mobile devise, to security of personal information and security of funds accessible through the service.

5.4 Areas for Further Research

From the research findings, the researcher recommends the following areas for further research:

a) **M-banking and organizational culture** ó The researcher recommends a research to be conducted to find the correlation between organizational culture and M-banking.

b) **M-banking and community development** - The researcher recommends a research to be conducted to assess how the M-banking can result to sustainable community development.

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APPENDICES

Appendix 1: QUESTIONNAIRE

PURPOSE OF THE STUDY

My name is Winfred Muthoni Ngarari. I am a student of The University of Nairobi pursuing a Masters of Arts in Project Planning and Management course. I am carrying out a research project as a requirement for the course. My research topic is õ*Factors influencing the uptake of mobile banking amongst female customers of Commercial Banks in Kenya: A Case of Kenya Commercial – Nakuru Town.*

You have been chosen as a respondent for this study. Your responses will be kept confidential and will be used only for the purpose of this study.

INSTRUCTIONS:

Kindly answer all questions by ticking or writing down your answer as appropriate.

Section A: Demographic Information

1. Age of the respondent í í í í í í í í í í í í í

2. Highest Educational Level

No schooling	☐
Primary School	☐
Secondary School	☐
College	☐
Undergraduate	☐
Post Graduate	☐

3. Marital Status

    Married ☐   Single ☐   Divorced ☐   Widowed ☐

4. Employment Status

    Self -Employed ☐   Employed ☐   Casual ☐

    Contractual ☐   Student ☐   not working ☐   ther ☐

5. Are you a registered user of mobile banking?

Yes ☐

No ☐

6. If no give a reason.

_____

7. If yes in question 5 above, how often do you use mobile banking services?

☐ Daily

☐ Weekly

☐ Month

☐ Rarely

Section B: Influence of Technology on Mobile Banking Uptake

8. Do you have Information Technology Skills?

Yes ☐   No

9. If yes in question 8, which skills {multiple responses allowed}

☐ I can use a computer
☐ I can use internet
☐ I can operate a smart phone
☐ I can navigate all forms of Information technology

10. Where did you acquire these skill

☐ Process of education and learning
☐ Professional training
☐ Work training
☐ Personal initiative
☐ Apprenticeship
☐ Any other _____Specify

11. If no, to question 6 above, do you feel not having Technology skills hinder you from using mobile banking?

Yes ☐   No ☐

12. If no in question 6, what keeps you from using technology?

           [   ] I do not see its use
           [   ] It is expensive to use technology
           [   ] Too much house work and domestic chores
           [   ] My husband does not approve
           [   ] No reason

13. Rate the ease of using mobile banking?
Not easy [   ]   moderately easy [   ] Not easy [   ]

14. Kindly identify the factors that would influence your decision to adopt mobile banking.

    You may tick more than one answer

           [   ] Ease of use

           [   ] Convenience

           [   ] Security of funds

           [   ] Keeping up-to-date with new technology

           [   ] Desire to save

15. Kindly identify the factors that prevent you from adopting mobile banking. You may tick

    more than one answer

           [   ] Cost of the service

           [   ] Security of the funds

           [   ] Security of the mobile device

           [   ] Disinterest in new technology

           [   ] Personal level of income

           [   ] System malfunction preventing access to your funds

Section C: Cost of M-Banking Services and Its Influences on Uptake of Mobile Banking

16. How much do you use as M banking service cost on average?_____

17. Rate affordability of M banking services. 1 being not affordable while 10 is very affordable.

    Not Affordable   Very Affordable
        1   2   3   4   5   6   7   8   9   10

18. To what extent does the cost of the mobile banking service influence your frequency of using the service?

    To a small extent [____]   to a moderate extent   [____]a large extent   [____]

19. Have you ever failed to transact as a result of high costs of services?

        Yes [____]   No   [____]

Section D: Influences of Customers Income Levels on Uptake of Mobile Banking

20. Do you use banking services?
    Yes [____]   No   [____]

21. Do you get an income

    Yes [____]   No   [____]

22. If yes, what is your average income?
        [____]   Below 5,000
        [____]   6-10,000
        [____]   11-20,000
        [____]   21-30,000
        [____]   40,000-50,000
        [____]   60,000 and above

23. Does your income pass through the bank?

    Yes [____]   No   [____]

24. To what extent does your income level influences on your use of mobile banking?

Small ☐   Moderate ☐ Large   ☐

25. What might be the reasons for not using mobile money?

☐ Too little income

☐ Money does not pass through the bank

☐ I see no use of using it

☐ I have other ways of transacting

☐ Others _____Specify

26. In your opinion, do you consider level of income as an important consideration affecting the uptake of mobile banking among women?

☐ Yes
☐ No

Section E: perceived Security Risk and its Influences on Uptake of Mobile Banking

27. Rate how you feel your money is secure using mobile banking. 1 represents least secure while 10 is very secure.

Not Secure   Very Secure

1   2   3   4   5   6   7   8   9   10

28. Have you ever lost money while transacting using mobile banking

Yes ☐

No ☐

29. What do you consider as the **MOST** risky in using mobile banking

☐ Loss or theft of the mobile device

☐ Security of personal or financial information

☐ Security of the funds accessible through the service

30. To what extent do you consider security risk an important factor influencing the adoption of mobile banking among women?

Small ☐   Moderate ☐   Large ☐

Section F : Up take of Mobile Banking

31. What mostly influences your mobile banking use? 1 represents low while 10 represents high.

Technology   1   2   3   4   5   6   7   8   9   10

Costs of services   1   2   3   4   5   6   7   8   9   10

Income Levels   1   2   3   4   5   6   7   8   9   10

Perceived Security risk   1   2   3   4   5   6   7   8   9   10

31. Rate the importance of the following in use of mobile banking, one represents least important while 10 very important.

Intention to use   1   2   3   4   5   6   7   8   9   10
Ease of use   1   2   3   4   5   6   7   8   9   10
Perceived usefulness   1   2   3   4   5   6   7   8   9   10

THANK YOU