

**FACTORS INFLUENCING MOBILE BANKING IN KENYA: A CASE OF KENYA
COMMERCIAL BANK IN GARISSA**

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of Arts in Project Planning and Management.**

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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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DEDICATION

This work is dedicated to my mother Alice Bett, my brother Robert Cheruyot and my sister Mercy Chepkirui.

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First I thank our almighty God who gave me strength to work, good health and sound mind throughout this challenging study period. Secondly, I am deeply indebted to my family and classmates for the moral and intellectual support they offered me in one way or the other throughout my study period. Without their support, encouragement and value for education, I would not have succeeded in my research study.

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ABBREVIATIONS AND ACRONYMS

AML	Anti Money Laundering
ATM	Automatic Teller Machine
CCK	Communication Commission of Kenya
EDGE	Enhanced Data GSM Environment
FDI	Foreign Direct Investment
GPRS	General Packet Radio Service
GSM	Global System for Mobile communication
ICT	Information and Communication Technology
IGA	Income Generating Activities
IRC	Internet relay Chat
KCB	Kenya Commercial Bank
KYC	Know Your Customer
NSE	Nairobi Securities Exchange
SME	Small and Medium Enterprises
TDMA	Time Division Multiple Access
USSD	Unstructured Supplementary Service Data
WAP	Wireless Application Protocol
WCDMA	Wideband Code Division Multiple Access

ABSTRACT

This study sought to establish factors influencing mobile banking in Kenya: a case of Kenya commercial bank in Garissa, it was guided by four objectives that focused on the influence of education, age of the respondents, cost of service and security concerns on mobile banking in Kenya Commercial bank. The study focused on eliciting information from the customers of the KCB bank. The main instrument for data collection was the questionnaire. Data was then analysed using descriptive statistics and presented using frequency tables using SPSS. Through analysis the study established that Majority of respondents were educated up to university and tertiary college levels. However, education did not influence mobile banking. This is because everybody in the sample owned a phone, operated a bank account and had subscribed to mobile banking. However, skills are required to be able to operate effectively on a mobile banking platform. Like education, age did not influence mobile banking. This is because everybody in the sample was found to own a phone, operate a bank account and subscribed to mobile banking. It was found that the cost of mobile banking was not too high and a sizeable number also said it was high. There need for further studies to find out why some feel the cost is high and come up with ways of reducing it down. Majority of respondents said there were losses due to fraudulent access of customers' accounts due to hacking. In order to protect customers' accounts, there is need to employ disciplined, qualified and well remunerated ICT in the bank and at the level of mobile provider. In past there have incidences of bank officials colluding with fraudsters to fleece customers' accounts. This practice should be eliminated with advent of ICT. In order to make mobile banking popular to all, there is need to come up with better ways of protective customer accounts. There is also need for a comprehensive ICT policy that also covers mobile banking.

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Mobile banking is a service provided by financial institutions in cooperation with mobile operators. It is about getting banking services to the unbanked, those who do not have bank access or bank accounts, and those who are at the bottom of the economic pyramid, often living in remote areas. They receive the benefits of banking services such as being able to save and borrow in a cost-efficient and secure way. The services include viewing account balances, making transfers between accounts, or paying bills via a mobile device such as a mobile phone. In recent time Mobile banking is most often performed via SMS or the Mobile Internet but can also use special programs called clients downloaded to the mobile device (Salzaman, Palen & Harper, 2001).

In recent years, banks, payment system providers, and mobile operators have begun experimenting with branchless banking models which reduce costs by taking small-value transactions out of banking halls and into local retail shops, where agents such as airtime vendors, gas stations, and shopkeepers, register new accounts, accept client deposits, process transfers, and issue withdrawals using a client's mobile phone to communicate transaction information back to the telecommunication provider or bank. This enables clients to send and receive electronic money wherever they have cell coverage. They need to visit a retail agent only for transactions that involve depositing or withdrawing cash (Salzaman, Palen & Harper, 2001).

In the banking world, developments in information technology have had an enormous Effect in development of more flexible payment methods and more user-friendly banking

Services (Akinici, Aksoy, & Atilgan,2004). The remarkable gains made towards mobile phone access have seen a steady progress in the scope of innovations emanating from exploitation of these fairly new technologies. What has characterized the Kenyan mobile landscape is a rapid uptake of various services key among them the mobile based products. Mobile banking is one innovation which has progressively rendered itself in pervasive ways cutting across numerous sectors of economy. An appropriate banking environment is considered a key pillar as well as an enabler of economic growth (Koivu, 2002).

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. Sarker and Wells 2003) assert that the only single access requirement or barrier to the resultant mobile banking will be the mobile phone. However, worldwide market penetration of affordable cellular devices and growing network service diffusion makes this intricacy almost fully resolved hence setting a firm pedestal for mobile banking escalation. Other studies have indicated that Mobile banking is going with the grain of consumer change and for this reason consumers are optimistic about future prospects. This type of banking offers a range of highly valued benefits – the efficient use of time, real-time control of spending and finances, budgetary control, convenience and ease of use. As technology, it helps consumers achieve many things which are important to them (Sarker and Wells, 2004)

The main purpose that banks have been serving since their inception is to ensure that money is under safe custody and while doing so, they also let us earn a certain amount of interest on the money deposited with them. Banks have improved access to financial services, such as savings, deposits, insurance and remittances. Savings can help poor people to invest in productive assets like livestock, a loan may help to expand business activities, and insurance can provide income for a family if a breadwinner becomes sick. In today's world, Mobile phones play an incredibly large role in the way the world exists in general, and the majority of tasks could actually not be completed if not for the use of these mobile phones. They have helped to make life significantly easier, productive, and more convenient for us all. Many poor people already have access to mobile phones. A positive aspect of mobile phones is that mobile networks can reach remote areas at low cost. Furthermore a mobile handset can easily be adapted to handle banking transactions (Pikkarrainen, Pikkarrainen, Karjaluoto and Pahnila, 2004).

At its core, Banking involves the collection, storage, transfer and processing of information assets and Mobile phones in the current lifestyle and technology are incredibly powerful and efficient tool for handling these information processes. Mobile banking has been around for quite some years now, but has really only become prominent over the past five years or so in particular. It offers an array of different advantages to the user, including: account balances and history including year-to-date information, the ability to transfer money from one account to another and to payees for bill payments, check history, reorders, and stop payments, check credit card balances and statements, complete online loan applications, secure interactive messaging with staff, and much more (Venkatesh, 1999).

Mobile banking basically allows you to be able to do everything that you can in your regular banking institution, only with the benefit that you can do it all right from the convenience of your own home. Not only is this great because you can be comfortable and have peace of mind knowing that you can keep track yourself of all your banking issues, but as well it allows for more ease because you never have to worry about rushing out and making it to the bank.

The banking industry in Kenya is well established with a myriad of commercial banks which are categorised as large, medium and small banks. Competition is very high between these banks and also the demand for banking services is also increasing with the gradual increase in economic growth. There is need to enhance value delivery for the clients to stay competitive in the industry. Banks tend to increase branches in the country to beat competition but the new trend is to improve service delivery and harness technology to serve customers better hence increased revenue (Koivu, 2002).

Banks are now providing special services, value-added services, by way of increasing convenience, tapping a broader market, increasing service channels and lowering cost in accessing their services. Previously, customers had to travel to branches to access services like loan application, account balance and statement, pay bills and funds transfer. This is an inconvenience since customers have to queue after travelling. This costs them money and time hence extra cost to access banking services. When there is a great demand for these services like school opening times, month end and other prime times the long queues lead to disservice to customers, who in today's Kenyan market have a choice of going to competitors reducing revenues therefore taking away the business. With every other bank seeking to compete in the lines of convenience, speed and lower cost, enhanced up to-date information provision, Banks have to find a way to improve its service delivery for its customers (Venkatesh, 1999).

Garissa County is the provincial headquarters of North Eastern Province. It borders Isiolo County to the northwest, Wajir to the north, the Republic of Somalia to the east, Tana River County to the west and Ijara to the south. The population of the district is concentrated in small pockets surrounding water points and market centres. These are the areas where basic services like education, health, security and commercial activities are found. The major towns also attract large populations especially Garissa town which accounts for 20% of the county population.

The transactions include checking of account balances, history including year-to-date information, the ability to transfer money from one account to another and to payees for bill payments, check history, reorders, and stop payments, check credit card balances and statements, complete online loan applications, secure interactive messaging with staff, and much more. (www.kcb.co.ke)

This project seeks to carry out a research on Kenya Commercial Bank's (KCB's) Mobile banking service. KCB is a fully fledged commercial Bank offering savings and lending services to individuals, entrepreneurs and companies of all sizes. It has the largest branch network in the East Africa and enjoys dominance as the Bank with largest balance sheet and capital base, respectively, in the region. It is a publicly quoted company with its shares trading at the Nairobi Securities Exchange (NSE), Uganda Securities Exchange, Dares Salaam Stock Exchange and Rwanda over the Counter (www.kcb.co.ke).

In 1997, KCB set up business in Tanzania before expanding further to Southern Sudan in 2006 and Uganda in 2007. The youngest subsidiary, Rwanda began operations in 2008. The Bank has a network of 210 outlets and over 400 automated teller machines across East Africa that are strategically located to provide synergies across markets. During the reporting period a total number of 73 new branches were opened across the region, raising the number from

137 branches to the current 210 branches. 41 new outlets opened in Kenya, 11 in Uganda, 5 in Tanzania, 6 in Southern Sudan while KCB Rwanda which began operations in 2008 has 9 outlets. Most of the branches are located in rural administrative and business centres. KCB has over two billion authorized shares held among Kenyan, East African and foreign investors (www.kcb.co.ke)

The Bank also introduced a mobile telephone banking facility for its customers in 2009. The product commonly known as KCB Connect is a mobile telephone Bank that has changed the lives and financial lifestyle of mobile subscribers in Kenya estimated at 17million. The mobile Banking service provides full Banking services on the mobile telephone handset at the touch of a button, including enquiries, Banking instructions, funds transfers and utility bill payments. A key differentiator between KCB Connect and other offerings in the market is the ability of all mobile telephone subscribers to open accounts on their phones that will enable them to transact with KCB. Working with one of Kenya's major mobile telecommunications service provider, the Bank has put in place the necessary infrastructure to enable customers to transfer funds from one KCB account to another, from KCB to the revolutionary and trend-setting Mpesa service and vice versa and from any KCB account to any phone account of the customer's choice. (www.kcb.co.ke)

One can easily access his/her accounts through the mobile banking service by dialling *522# and following the prompts. KCB connect Services include checking KCB account balance, buying credit/airtime, Sending money to M-Pesa account, Transfer funds to other KCB accounts, Withdraw cash, Get mini statements, Service request i.e. Cheque book request, Foreign exchange rates, Full statement request, Stop cheque and paying bills. (www.kcb.co.ke)

1.2 Statement of the Problem

As discussed earlier studies have addressed conceptual issues and conducted general consumer surveys however, there is little research available in the literature on customer perceptions of and utilization of mobile banking in Kenya. People's level of experience with technology is higher than a decade ago. The future of Mobile banking looks encouraging and bright, if barriers are overcome. These barriers include security of Mobile Banking, cost of mobile banking services, user's knowledge on Mobile Banking, availability of mobile phone and other user's perceived barriers on Mobile Banking. This study therefore sought to investigate the factors affecting mobile banking which includes security considerations, level of education, age of users and cost of transactions.

1.3 Purpose of the Study

The purpose of this study was to establish factors influencing mobile banking in Kenya: a case of Kenya commercial bank in Garissa.

1.4 Objectives of the Study

This study was guided by the following objectives:

- i) To establish the influence of education level on the use of M-banking among the customers of KCB Garissa Branch
- ii) To determine the influence of users' age on the use of M-banking among the customers of KCB Garissa Branch.
- iii) To establish the influence cost of services on the use of M-banking among the customers of KCB Garissa Branch
- iv) To explore the influence of the key security concerns on the use of M-banking among the customers of KCB Garissa Branch

1.5 Research Questions

The study will be guided by the following questions:

- i) What is the influence of education level on the use of M-banking among the customers of KCB Garissa Branch?
- ii) What is the influence of users' age on the use of M-banking among the customers of KCB Garissa Branch?
- iii) What is the influence cost of services on the use of M-banking among the customers of KCB Garissa Branch?
- iv) What is the key security concerns influencing the use of M-banking among the customers of KCB Garissa Branch?

1.6 Significance of the Study

The findings of this study may be useful to different cohorts of the population. Firstly, business owners may use the findings to educate themselves on the many avenues and platforms that m-banking affords them and their acceptance can help to reveal the underlying logic of

Practitioners' strategic decisions in information management. Secondly, the findings of this study may be used by mobile phone operators and banking institutions to improve or expand their services in a way geared to economic empowerment to all involved and also provides information for managers and software vendors seeking to enhance the adoption of communication-oriented forms of ICT and telecommunications.

1.7 Delimitation of the study

This study sought views of the factors influencing the use of the M-Banking from the customers of the KCB who use the M-Banking services.

1.8 Limitation of the study

Garissa being predominantly rural, the findings of the study can only be duplicated in other parts of the country with caution and cannot be generalized. The study was expected to be constrained by resources of finances and time. A lot was expected to be undertaken within limited time that is available and not all respondents could respond to the study and affected the amount of data collected. The researcher tried as much as possible to obtain information from the respondents' interventions.

1.9 Assumptions of the study

This study assumed that all the information given by the respondents was true to the best of their knowledge and that it assisted the research and the researcher had no control over it.

The study took into consideration the assumption that variables that were used in the study were not to change in the cause of the research period and that the respondents gave correct and valid information so as to get valid data.

1.10 Definitions of Significant Terms

Bank refers to financial institution and a financial intermediary that accepts deposits and channels those deposits into lending activities, either directly or through capital markets.

Banking Business refers to the business of receiving money on current or deposit account, paying and collecting cheques drawn by or paid in by customers, the making of advances to customers, and includes such other business as the Authority may prescribe for the purposes of this Act.

Bank customers refers to a person who is utilizing one or more of the services provided by the bank and through whom the bank gets an opportunity to make an earning in return to the service they can provide the customers with. For example an individual who has an account

with a bank or an individual who has a mortgage or a loan with the bank or an individual who has a fixed deposit with the bank are all bank customers.

Cost of services refers to a fee charged to cover services related to the primary product or service offered to a bank customer for example would be a fee for using an ATM to withdraw cash.

Mobile Phone is a device that can make and receive telephone calls over a radio link whilst moving around a wide geographic area. It does so by connecting to a cellular network provided by a mobile phone operator, allowing access to the public telephone network.

Mobile Banking refers to provision of banking and financial services with the help of mobile telecommunication devices. The scope of offered services may include facilities to conduct bank and stock market transactions, to administer accounts and to access customised information.

Economic Development is a process by which people in a society increase their personal and institutional capacities to manage and mobilise resources to produce sustainable and equitable distributed improvements in their quality of life.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews related information concerning mobile banking. The chapter starts by discussing the influence of education level on M-banking, then discusses the influence of users' age on M-banking and the extent to which the cost of services influences M-banking. It finally reviews the key security concerns regarding m-banking and their impact on Mobile banking adoption by customers.

2.2 Influence of Education Level on M-Banking

The rapid development of information technology has affected the banking industry globally. An impact of information technology in the banking sector is the introduction of mobile banking. Earlier studies have shown the usefulness of mobile banking in facilitating the financial transactions between banks and their customers (Kleijnen et al., 2004; Luarn and Lin, 2005; and Mattila, 2003).

Since mobile banking is one of the most technological applications in terms of innovation, it is important that a strong understanding on how these innovations would benefit is inculcated among clients. Based on previous research work, an educated community is better at adopting new mobile banking technologies (Mattila, 2003). Rapid changes in the financial services environment; increased competition by new players from non-banking sector, product innovations, globalization and technological advancement have led to a market situation where battle of customers is intense. In order to rise to the challenges, service providers are even more interested to enhance their understanding of consumer behaviour patterns.

The newly emerged mobile banking services represent an innovation where both intangible service and an innovative medium of service delivery employing high technology are present. Thus, concepts of innovation and diffusion of innovation are even more intricate as

technology and service aspects have an effect on the characteristics of mobile banking services (Mohr 2001). Traditionally research relating to the customer adoption of innovation has tended to concentrate on socio-demographic and psychographic attributes of potential adopters. Even though these kinds of personal characteristics of a consumer have been found to be predictors of adoption, an increasing body of research has demonstrated that it is the perceived attributes of innovation itself rather than the personal characteristics that are the stronger predictors of the adoption decision (Black et al. 2001, 391).

Studies have shown that most of electronic (Internet) banking users have traditionally had university level education and higher professions (Jayawardhena & Foley, 2000). In their studies, Jayawardhena & Foley, (2000) found during interview that people who have adopted technology enabled services like mobile phones and ATMs are more open and eager to adopt mobile financial services (MFS). On the contrary, the villagers who had never used an ATM or a mobile phone were found to be reluctant to make financial transaction through mobile phones. This clearly showed that lack of technology readiness among the rural population would be a barrier towards ensuring adoption of MFS.

Laforet and Li (2005) found that in China, the lack of understanding of the concepts and benefits was a main barrier to consumers using mobile banking. Subsequently, users of mobile banking were not intended to be highly educated and were typically younger people in China. This was in contrast to the situation in the western countries as discussed by Karjaluoto, Mattila, and Pentto, (2002). As discussed by Trappey and Trappey (2001), the Chinese are used to carrying cash, and have little confidence in traditional financial management. Compared to other Asian consumers, Chinese consumers seem to be more traditional and less affected by new technology advancements. Heinonen (2004) & Forman and Sriram (1991) found that some customers simply prefer to deal directly with a bank clerk instead of utilizing “arms-length technology” (e.g. mobile banking). The examples tend to

show that education level of consumers have a bearing on their adoption of new technology, mobile banking being one of them. The extent to which education level affects the adoption of mobile banking in Kenya is however not quite clear given that mobile banking is a recent innovation in Kenya.

2.3 Influence of Users' Age on M-Banking

According to Howcroft, Hamilton & Hewer, 2002, demographic factors that describe typical electronic banking customers include young, affluent and highly educated. Northern European countries are among the most advanced ones in the adoption to and use of different new mobile and technological appliances. These countries have extended the implementation of technological advancement in banking services (Polatoglu & Ekin 2001, Howcroft et al. 2002)

Although the densities of fixed and mobile connections are high in all the Nordic countries, the number of most advanced Internet-enabled mobile phones is still fairly low; in Finland 20 % of population has Internet-enabled device. In addition younger people have advanced mobile phones more often than older people (The Finnish Bankers' Association, 2002). In fact in the age group 60 years or over as well as among retired persons the access rate is only 3-9 %.

In one study, age and education were found to have major influences on the use of the mobile phone for banking services (Suoranta, 2003). Gender and age were found to be the main differentiators in another study (Laukkanen & Pasanen, 2007). A study by Mattila (2002) found that Internet banking user is middle aged, relatively wealthy and highly educated. In the study, a user of mobile banking belonged most often to age group 25 to 34 years old. Majority of the so called regular users (43.6 %) were 25 to 34 years old as well as majority (36.8 %) of occasional users, whereas non-users were relatively older compared to the two

other groups. Every third of non-users (31.7%) belonged to age group 35 to 49 years old and 25.9 % to 50 to 64 years old(Mattila, 2002).

In their study Rajanish & Sujoy (2011) found that user demographics like education and age have impact on the amount of technology readiness of the population. Technology readiness was seen to be higher among the educated people and lower among the higher age groups (older than 50 years). Thus, technology readiness among the set of population can be determined based on the awareness and adoption of available technologies and a combination of demographics like education and age.

A study by Wood (2002) in Jordan found that the influence of age is noticeable. Through the fact that compared to older consumers, younger adults, especially those under age 25 are more interested in using any new technologies, such as Internet or mobile banking application. This finding is supported by a study by Mattila (2003), who found that the age group of 17 to 25 years has the potential to become users of mobile banking, because of its familiarity with the latest mobile technologies. These results require the banking sector to focus on these cohorts as a target for marketing and strategic planning. This would make them to be the major group of users for mobile banking application. Besides that, the targeted users would also comprise middle aged, earning relatively good income and highly educated. Thus, age was found to be an important factor to be considered for the adoption of mobile banking application in Jordan.

2.4 Influence of Cost of Services on M-Banking

Financial institutions, which have had difficulty providing profitable services through traditional channels to poor clients, see mobile financial services (MFS) as a form of “branchless banking”, which lowers the costs involved in serving customers (Ivatury & Mas, 2008). Technological development has provided opportunities for service providers to

develop their services and offer customers more flexibility. As a consequence, banks have launched multiple service access methods via new delivery channels like ATM, internet and mobile phone (Laukkanen & Pasanen, 2007). Low-cost banking can bring into its fold a considerable group of consumers who formerly could be served only at too high a cost (Datta, Pasa, & Schnitker, 2001). However, studies have shown that there have been bottlenecks in the rate of adoption of MFS in various parts of the world.

One issue driving future mobile banking is the cost efficiency pressures from supply side. Payment transaction costs vary. Quite often wireless capability is built into financial institution's software platform, leaving maintenance and upgrades as the only added costs (Mattila and Pento 2002; McCall, 2002). European IT consultants, International Data Corporation, expect mobile banking to be the fastest growing sector of total information technology spending on electronic banking, with a 1999 to 2003 compound annual growth rate of 129% (West, 2001).

Relative advantage is concerned with the degree to which an innovation is perceived as being better than the idea it supersedes. The degree of relative advantage is often expressed as economic profitability, social prestige, and savings in time and effort, immediacy of the reward or as decrease of discomfort (Rogers, 1995).

Various studies have been conducted to extend the base technology acceptance model (TAM) as well as other extended models of TAM by testing the significance of different constructs and antecedents. For example, perceived financial cost, system quality and social influence had been added to the original TAM constructs and were found to be positively associated with consumer intentions to use mobile banking services (Kleijnen, et al., 2004). Other studies repeatedly listed mobile device attributes like tiny displays, slow data connection,

weak usability, and associated cost as inhibitors of mobile banking services (Laukkanen & Pasanen, 2007; Mallat, Rossi, & Tuunainen, 2004).

According to Mallat (2007), the cost of a payment transaction has a direct effect on consumer adoption if the cost is passed on to customers. Transaction costs should be low to make the total cost of the transaction competitive. The transaction costs of sending money through the mobile payment technology are lower than those of banks and money transfer companies.

In their studies in India, Rajanish & Sujoy (2011) found that the cost of availing the mobile financial services was a common matter of concern among the villagers who were interviewed. People wanted to know whether they would need to purchase a new handset for using mobile financial services (MFS) and were also eager to know the cost of transaction for availing this service. People were ready to pay a small amount (in the range of one rupee to two rupees) per transaction for using MFS. They were aware and appreciated the fact that using MFS would save them a lot of time, effort and money that they currently spent for accessing banking and financial services through the existing channels of delivery. Hence, cost of the MFS is an important factor that would determine the adoption of the services among the rural population. Given the fact that majority of the rural population falls within the lower income group, the total cost of availing the services need to be minimized for ensuring faster adoption.

According to Nah, Siau, and Sheng (2005), the cost of mobile devices and mobile services was identified as an investment concern. Luarn and Lin (2004) argued that financial cost was one of the greatest concerns in adoption of mobile banking services. Furthermore, Ram and Sheth (1987; 1989) stated that it was not viable for consumers to change their way of performing their banking tasks without offering a strong performance-to-price advantage. The price of banking services may have an opposite effect with respect to the adoption of mobile banking, which may result in consumers preferring the traditional banking services

(Laukkanen et al, 2007). Users agree to pay a reasonable fee to use a service. However this would depend on the banking and service provider. Provision of a lower service cost is a major benefit for users using mobile banking and performing banking transaction functions through a mobile device; so the “value for money” barrier may be another factor influencing the adoption of mobile banking services (Laukkanen et al, 2007).

2.5 Security Concerns and their influence on Mobile Banking

All business transactions require some elements of trust, especially those conducted in uncertain environments (Lee, 1998). In order to complete the purchase transaction, customers have to trust the online business or the overwhelming social complexity will cause them to avoid purchasing the service (Gefen, 2000). In electronic commerce, trust can be viewed as a perceptual belief or the level of confidence one expects from the other party during an online transaction (Javenpaa et al., 1998).

While consumers initially trust their e-vendors and have an idea that adopting online service is beneficial to job performance or life style, they will eventually believe that on-line services are useful (Gefen, Karahanna & Straub, 2003). In particular, Gefen et al. (2003) found that trust in an on-line shopping setting explicitly indicated that trust is an antecedent of perceived usefulness. Trust also has a direct influence on a consumer's behavioral intention to use the service (Wu and Chen, 2005). Trust is one of the determinants of perceived usefulness especially in an on-line environment. Pavlou (2001) also found that trust has a positive effect on perceived usefulness in an e-commerce setting.

Security and trustworthiness of usage of service is one of the most important factors within every target segments when deciding on banking service delivery channel. According to Rogers (1995) the perceived innovation characteristics are supposed to provide the framework on how potential adopters perceive an innovation. Research that has investigated

the product characteristics of innovation has generally endorsed evaluating the innovation along the product characteristics that involve five constructs; relative advantage, compatibility, complexity, trialability and observability (Moore & Benbasat, 1991). Particularly in banking services the perceived risk associated with the financial product itself as well as with electronic delivery channel is higher than in basic consumer goods, and hence increasing the importance of this attribute of innovation (Harrison 2000: 242). Ensuring security and confidentiality are the fundamental prerequisites before any banking activity involving sensitive information can take place. (Jayawardhena & Foley,2000). Relative advantage, compatibility, trialability and observability are positively related to adoption of an innovation and the remaining two, complexity and perceived risk, negatively related (Rogers 1995).

The effect of trust has been identified along with other dimensions on the adoption of MFS (Gu, et al., 2009; Luarn & Lin, 2005). Mattila (2003) found risk to be a very significant factor in adopting mobile banking. In their study, Rajanish & Sujoy (2011) found that when it came to monetary transactions, villagers preferred channels that they trusted. Existing studies (Donner & Tellez, 2008; Gu, et al., 2009; Luarn & Lin, 2005) on the effect of trust on adoption of MFS had been primarily focused on people's trust on the technology being offered. In case of the rural under-banked population, the complexity of trust was found to be twofold: first the trust of people on technology and second, the trust on the financial service that is being offered. Thus, generating trust on MFS remains one of the major challenges for ensuring adoption of offered services among the rural under-banked.

In a study in a rural setting, the villagers mentioned that people should be made more aware about MFS and its usage through group meetings and training sessions in order to generate trust among them about MFS (Gu, et al., 2009). Effectiveness of the agent/merchant network in making people realize the usefulness of MFS by creating a trustworthy ground level

infrastructure for MFS would contribute towards generating trust among the people. The villagers also mentioned that, once people around them started using MFS, they would gain more trust on the service and would like to use the same. Thus, peer feedback/social influence was found to have a positive impact on the trust of the people on MFS. Both these antecedents can be related with subjective norm/social influence as discussed in earlier studies (Kleijnen, et al., 2004).

Besides the perceived usefulness and perceived ease of use, the usage intention of mobile banking can also be affected by the security and privacy concerns of the users. This argument is based on the work of Luarn and Lin (2005) and Wang (2003). According to Wang et al. (2003), security and privacy are the two important dimensions in perceived credibility. Perceived credibility is usually impersonal and relies on reputation, information and economic reasoning (Ba and Pavlou, 2002). By definition, perceived credibility is one's judgment on the privacy and security issues of mobile banking. The importance of security and privacy to the acceptance of banking technologies has been noted in many banking studies (Howcroft et al., 2002; Polatoglu and Ekin, 2001; and Sathye, 1999). Basically, fear of a lack of security is recognized as an important factor impacting the acceptance of mobile banking. In the study of Luarn and Lin (2005), they found that perceived credibility has a significant impact on the development of willingness to use mobile banking. Furthermore, Wang et al. (2003) found perceived credibility to be significantly related to the technology acceptance of internet banking. Obviously, the perceived credibility that people have in a system which concludes financial transactions securely and maintain the confidentiality of their personal information will affect their voluntary acceptance of mobile banking. Since mobile banking is somewhat new, perceived credibility has the higher ability to predict and explain the intention of users to adopt mobile banking.

The consensus among researchers is that the security of electronic banking system is an important variable in adoption of technology by the users (Lin & Lu, 2001; Mcknight & Chervany,2001; Pikkarrainen, Pikkarrainen, Karjaluoto, & Pahnila, 2004). In fact, people in high risk environments need to analyze situations. Since transactions in the electronic banking environment are processed virtually and people are not able to see the process, users' perception of the security of the system may be associated with mistrust (Venkatesh, Morris, Davis, & Davis, 2003).

In a mobile environment, it is necessary to have perceived security and trust in the vendors and the payment system. (Siau, et al., 2004; Mallat, 2007). Other security factors important to the users are anonymity and privacy, which relate to use policies of customers' personal information (Jayawardhena & Foley, 1998; Mallat, 2007). Recent research results indicate that people are concerned about unwanted disclosure of private information, or simply misuse of their information by the company collecting it (Kesh et al., 2002, Sathye 1999). This dimension of risk include undisclosed capture of information such as consumers' shopping habits. Thus, privacy risk was particularly salient for e-payments. Perceived privacy risk is defined as the possibility that online businesses might use personal information inappropriately hence invading a consumer's privacy (Nyshadham 2000).

Researchers identified nine dimension of perceived risk: financial, performance, social, physical, psychological, time-loss, personal, privacy, and source (Kim and Prabhakar, 2002). They grasped the effect of perceived risk on accepting technology such as Internet banking by demonstrating that the more perceived risk one has, the less likely he will accept new technology. Researchers found that perceived risk is influenced by trust toward the transaction partner (Javenpaa and Todd 1998, Nooteboom et al.1997). Jarvenpaa and Todd (1998) also showed that trust works as a mechanism for reducing consumer's perceived risk in Internet shopping.

A recent study of Internet banking showed that trust reduces perceived risk and invigorates the usage of online banking service (Yousafzai et al. 2003, Suh and Han 2002). In contrast, Nootboom et al. (1997) found that higher perceived risk decreases the level of trust toward the partner. In addition, Mayer et al. (1995) insisted that it was unclear whether trust comes before perceived risk or otherwise. Whichever the case, it is clear that security is an important concern to mobile banking adoption by potential consumers. This study intends to find out the level of security concern by customers of Kenya Commercial Bank.

2.6 Conceptual framework

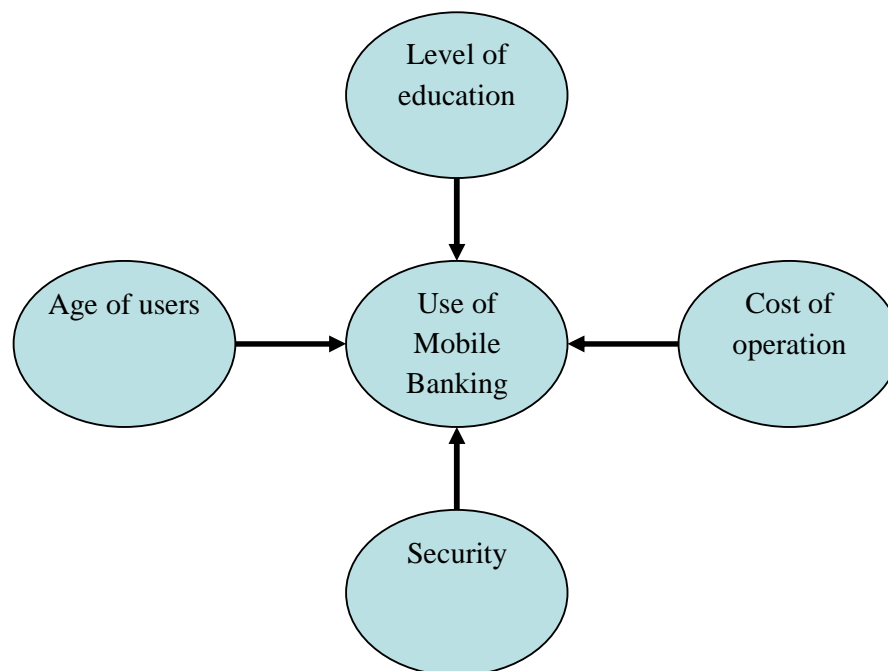


Figure 2.1 Conceptual framework for the factors affecting mobile banking

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter describes the procedures that were used in conducting the research. It contains the research design, population, sample size and sampling procedure, data collection and data procedures.

3.2 Research Design

The research design used in this study was descriptive survey. The study aimed at collecting information from the respondent in relation to their access to Mobile banking services in Kenya Commercial Bank's KCB Connect. The research was conducted using a purely quantitative method. Data was gathered through reliable cluster sampling techniques using comprehensive questionnaires.

3.3 Target Population

The study was carried out within Garissa town. The choice of the town was influenced by the presence of Kenya Commercial Bank within the town hence respondents could easily be reached. The study employed a method of surveying the account holders in Kenya Commercial bank which is currently offering mobile banking service called KCB connect. Non account holders were also included in the survey so as to help find out the perceived barriers in adoption of mobile banking services. The study included all the account holders operating under KCB's M-Banking service platform. This included business people, personal account holders, and corporate customers among others.

3.4 Sample and sampling techniques

The study addressed unexplained gaps in the quantitative survey through selected qualitative tools which were methodically engaged to bring to light further information of pertinent nature. Therefore, the sampling method employed was a simple random Sampling Method. The questionnaires were distributed in hard copy format to 400 respondents drawn randomly. This ensured that the research instruments function well and questionnaires administered to the respondents without any bias. This is basically a simple random sampling which is a probability sampling method.

3.5 Validity of the instrument

Validity is defined as the accuracy and meaningfulness of inferences, which are based on the research results. It defines the degree to which results obtained from the analysis of data represent the phenomenon under the study. The questionnaire was designed to tap information from the respondents as is required to measure. To also validate the instruments a pre-test was conducted. Validity is an indication of how sound the research is. It applies both the design and the methods of the research. Validity in data collection means that the findings truly represent the phenomenon measured. The researcher tested validity by comparing the variance between two sets of results and these were the pilot study results and the actual results. Small variance was noted which imply the instruments were valid.

3.6 Reliability of the instrument

Mugenda (2003) defines reliability as a measure of the degree to which instrument yields consistent results of data after repeated trial. Reliability of research instruments refers to the consistency of instrument items applied. It is the extent to which an instrument produces the same result every time it is used. The researcher carried out a pilot study by performing same

survey with the same respondents within one week (test-retest method) and determined reliability by calculating Pearson correlation coefficients of the two sets which was then used as a quantitative measure of the test-retest reliability. The coefficient results of two sets had negligible difference with one set giving coefficient value of 0.78 and the other set a value of 0.81 which ascertained the reliability of the instruments.

3.7 Data Collection Procedures

The researcher obtained an introduction letter from Kenya Commercial bank allowing him to collect data. After this he sought permission from relevant authorities of Garissa before administering the research instrument. The researcher with the help of a research assistant personally visited the target population and distributes questionnaires to 400 respondents whom they gave enough time to respond to the instrument and thereafter the team collected the instruments in readiness for analysis.

3.8 Data analysis techniques

The researcher first established if the entire questionnaire was dully completed. The data on the questionnaire was coded, classified and summarized for analysis. Descriptive analysis was done to describe the population and test the objectives. This enabled the researcher get the percentages and counts of the respondents' opinion on the issues being researched.

3.9 Variables and Methods of Data Analysis

Table 3.1 Variables and Methods of Data Analysis

Variables			
Research questions	Independent	Dependent	Method of data analysis
1. What is the influence of users' level of education on Mobile banking?	Mobile Banking	Number of respondents and their opinions on mobile banking challenges attributed to level of education.	Percentages Frequencies
2. What is the influence of Users' age on the utility and adoption of Mobile banking?	Mobile Banking	Number of respondents and their opinions based on age as a factor in mobile banking.	Percentages Frequencies
3. To what extent do cost of services influence Mobile banking?	Mobile Banking	Number of respondents and their opinions on Cost as a factor in mobile banking.	Percentages Frequencies
4. What are the security	Mobile Banking	Number of	Percentages

concerns and their influence on Mobile Banking?	respondents and their opinions on security of mobile banking.	Frequencies
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3.10 Ethical considerations

The study observed ethics in research. This included treating identities of bank customers with confidentiality. The researcher sought permission from the respondents and explained to them how the information gathered would be important in mobile banking practices in Kenya to foster development.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents data analysis and discussions in this order: questionnaire return rate, influence of education on mobile banking, influence of age on mobile banking, extent to which cost of services influences mobile banking and the key security concerns on mobile banking.

4.2 Questionnaire return rate

Questionnaire return rate is the proportion of the sample that participated in the survey as intended in all the research procedures. Out of 400 questionnaires administered to the customers of KCB, 372 were returned and other respondents were too busy thus making a questionnaire return rate of 93%.

4.3 Influence of education on mobile banking

One of the objectives of the study was to establish the influence of education on mobile banking. The respondents were asked to state their level of education because it was thought to influence mobile banking in terms of adoption, understanding and knowing how to transact through mobile banking platform and therefore to reveal some of the challenges encountered in relation to level of education. Bank customers therefore stated their level of education and the results are shown in Table 4.1

Table 4.1 Education level of the respondents

Education level	Frequency	Percent
Primary	38	10.2
Secondary	54	14.5
Tertiary colleges	107	28.8
University	133	35.8
Informal	40	10.7
Total	372	100

As indicated in Table 4.1, majority of the bank customers accessing bank services through a mobile were educated up to university (36%), tertiary colleges (29%) and secondary (14%). The rest had (10%) each i.e. primary and informal education. Even though majority had acquired higher education, it did not seem to have influence on mobile banking. This is because everybody who was interviewed owned a mobile phone, a bank account and had subscribed to mobile banking. Asked if mobile banking was difficult to use, 64% of the respondents said it was not. Mobile banking usage cuts across all the education levels however it was noted that those who had informal education and those up to primary had difficulty in operating mobile handset to access bank services while others forgot their passwords and were mainly concerned about the security of transacting through a mobile. Besides education, the study tried to find out if skills were needed to operate on modern banking platform and the results are as shown in Table 4.2.

Table 4.2: Requires sufficient skills to operate on mobile banking platform

Category	Frequency	Percent
Strongly disagree	26	7.1
Disagree	40	10.7
Neutral	67	17.9
Agree	107	28.6
Strongly agree	132	35.7
Total	372	100.0

As Table 4.2 shows, to be able to operate effectively on mobile banking platform one required sufficient skills. This is according to about 64% of the sampled bank customers who agreed that skills were necessary in this area however some claimed that they had not been properly trained on the process and thus affecting their efficiency. It was noted that majority of those who agreed were either educated up to primary or had gone through informal education. Nonetheless a number of those who had better academic credentials were hesitant and acknowledged that the process was tedious and difficult at first instant but became easier as they used it time and again. The study went further to investigate if mobile banking service was preferable for the high and learned and the results are indicated in Table 4.3

Table 4.3: Service preferably for high and learned

Category	Frequency	Percent
Strongly disagree	186	50.0
Disagree	66	17.8
Neutral	14	3.7
Agree	40	10.7
Strongly agree	66	17.8
Total	372	100.0

As Table 4.3 shows, majority of the banking customers on mobile banking (about 68%) said the mobile banking service was not the preserve of the high class and the learned. In fact, only about 29% agreed that the service was preferably for the high class and learned people and they attributed their claim to high cost of mobile handset and the classical aspect associated with the evolving technology. About 4% remained neutral. Generally majority disagreed which therefore reinforces the earlier finding that education has no influence on mobile banking.

4.4 Influence of age on mobile banking

The study also sought to establish the influence of age on mobile banking. The study investigated if age influenced mobile banking and the results are indicated in Table 4.4

Table 4.4: Age of the respondents

Age	Frequency	Percent
18-25 years	67	17.9
26-35 years	119	32.1
36-50 Years	107	28.6
>50 years	79	21.4
Total	372	100

According to Table 4.4, majority of bank customers were aged 26 years and above. This consisted of 26-35 years (about 32%), 36-50 years (about 29%) and over 50 years (about 21%). Like education, age did not influence mobile banking as it has been adopted across all age groups. People across all age groups owned phones; operated bank accounts and subscribed to mobile banking. However bank customers over 50 years of age believed that it was difficult to transact through a mobile handset due to diverse reasons associated with age and a few mentioned were poor eyesight, long procedure and memory of password.

4.5 Extent to which cost of services influences mobile banking

This study also investigated the extent to which the cost of services influenced mobile banking as it was believed to basically determine its adoption and usage and the answers are shown in Table 4.5

Table 4.5 Mobile banking services accessed

Type of service	Frequency	Percent
Buy airtime	79	21.4
Transfer funds	107	28.6
Check balance	119	32.1
Pay bills	67	17.9
Total	372	100

According to Table 4.5, there were two main services accesses by mobile banking customers which were checking balance and transferring funds. This was mentioned by about 32% and about 29% of respondents respectively. Others services included buying air time (about 21%) and the least was paying bills (about 18%). Probably the usage on paying bills might increase as users acquire more skills, confidence and precision of utilizing the service. It was noted that majority of them had not experienced high charges while transacting and had positive perception towards the new banking technology as they acknowledged it was cheaper than visiting the bank premises. The study also investigated the phone cost of mobile banking and results are shown in Table 4.6.

Table 4.6: Phone cost for mobile banking high

Category	Frequency	Percent
Strongly disagree	147	39.3
Disagree	93	25.0
Neutral	26	7.1
Agree	53	14.3
Strongly agree	53	14.3
Total	372	100.0

According to Table 4.6, majority of bank customers (about 64%) disagreed that the cost for mobile banking was too high. Only about 29% said the cost was high and about 7% were neutral. However those who agreed the phone cost was high did not have substantial explanations to back their claim as they further added that Mobile handsets for mobile banking have special features and is not the case as any model can be used and thus awareness was noted to be deficient. Table 4.7 shows the difficulties experienced in mobile banking.

Table 4.7: Difficulties experienced in mobile banking

Technicality	Frequency	Percent
Long and difficult procedure	93	77.8
Transactional delays	13	11.1
Poor password memory	13	11.1
Total	119	100

As shown in Table 4.7, majority of bank customers (78%) mentioned long and difficult procedure as a difficulty in mobile banking. A few respondents mentioned transactional

delays (11%) and poor password memory (11%). The long and difficult procedure was noted to be influenced by level of education and age as majority of the bank customers who stated were over 50 years of age, primary as their level of education and the informally trained. The study also tried to find out if it was easy to acquire transaction with mobile banking and the results are shown in Table 4.8

Table 4.8: Respondents opinion on the ease to acquire transaction with mobile banking

Category	Frequency	Percent
Strongly disagree	67	17.9
Disagree	79	21.4
Neutral	79	21.4
Agree	67	17.9
Strongly agree	79	21.4
Total	372	100.0

As to whether it is easy to acquire transaction with mobile banking, there was no clear majority for those agreeing or disagreeing. About 39% of respondents said it was easy and another 39% said it was not easy. The rest (about 21%) remained neutral. However it was noted that level of education and age of users was the main determinants of which side the respondent was taking. The study found out that majority of the middle aged respondents with good academic credentials i.e. secondary up to university were able to effectively transact. Respondents above 50 years of age had difficult in making successful transactions as they were either time barred or wrong commands. Respondents were also asked if mobile banking required mental effort, the results are shown in Table 4.9

Table 4.9: Respondent’s opinion on whether mobile banking does not require mental effort

Category	Frequency	Percent
Strongly disagree	67	17.9
Disagree	79	21.4
Neutral	14	3.6
Agree	119	32.1
Strongly agree	93	25.0
Total	372	100.0

As shown in Table 4.9, majority of the bank customers (57%) agreed that mobile banking does not require any mental effort, 39% disagreed and 4% remained neutral. Even when the responses were distributed across education levels, it was evident no mental effort was required even for those with informal and primary education as most acknowledged process was easy to learn as accomplishing one step led to another and thus making it easier for a user with basic reading skills. It was nevertheless noted that those who disagreed had negative attitude towards technology knowhow and therefore was difficult for them to personalise the process and as a result were either not able to execute transactions with ease or were totally laid up.

4.6 Key security concerns on mobile banking

The study investigated if there were losses due to fraudulent access of one’s account through hacking and responses were as indicated in Table 4.10

Table 4.10: Respondents opinion on whether Losses due to fraudulent access of customers' account through hacking

Category	Frequency	Percent
Strongly disagree	67	17.9
Disagree	53	14.3
Neutral	106	28.5
Agree	93	25.0
Strongly agree	53	14.3
Total	372	100.0

According to the Table 4.10, majority of bank customers (40%) agreed with the fact there were losses due to fraudulent access of customers' accounts through hacking. A sizeable number (about 32%) said there were no losses incurred and a few (28%) remained neutral. Even with loss due hacking, over 70% of respondents felt their banks were trustworthy and for the few incidences, bank customers acknowledged the fact that the bank was investigating and refunds made where proof of fraudulent activity was identified. This can be interpreted to mean that customers understood that in this era of ICT, fraud was possible and that mobile transactions were not trustworthy. Most encouraging for banks, customers did not feel like it was an inside job in which case they would shift their money to other banks. Nevertheless it is vitally important for banks to sensitize how secure mobile banking services are to facilitate its growth in terms of adoption and usage. The study also investigated if there were losses due to wrong input of account number and the results are indicated Table 4.11

Table 4.11: Respondents opinion on whether there are Losses due to wrong input of account number

Category	Frequency	Percent
Strongly disagree	26	7.1
Disagree	14	3.6
Neutral	0	0.0
Agree	119	32.1
Strongly agree	213	57.3
Total	372	100.0

A large number of the bank customers who were about 89% experiences loss due to wrong input of account number as indicated in Table 4.11. Only an insignificant number of respondents (about 11%) said they did no experience any loss due to wrong input of account number. The most affected group were bank customers above 50 years of age. This was attributed to poor eyesight however the young and educated were also victims as they made errors due to speedy input of information without confirming. They also added that loss of security passwords and mobile handset had subjected them to risks and thus was a security concern. It was noted from their responses that at some point mobile handsets were lost under unclear conditions which later on resulted to loss of funds. They acknowledged that relatives and close friends were the most notorious as they were the perpetrators due to easy password access. This was established as a major challenge to bank customers with poor eyesight as they frequently seek out assistance and as a result disclosed the pin numbers.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter discusses the summary of the findings, conclusions reached and give the recommendations as per the response from bank customers.

5.2 Summary of the study

The purpose of this study was to establish factors influencing mobile banking in Kenya: a case of Kenya commercial bank in Garissa. This was guided by four objectives that focussed on the influence of education, age, cost of services and key security concerns on mobile banking. To achieve these objectives, the researcher used descriptive survey and the study aimed at collecting data from bank customers in relation to their access to mobile banking in Kenya Commercial Bank, Garissa. Questionnaires were distributed to 400 respondents which was 10% of customers accessing mobile banking and out of this sample 93% of questionnaires were returned.

To test for validity of the instruments, a pre-test was conducted and the researcher compared the variance between the two sets of results and small variance was noted which validated the instruments. The researcher also tested for reliability of the instrument by test-retest method and determined reliability by calculating Pearson correlation coefficients of the two sets which was then used as a quantitative measure of the test-retest reliability. The coefficient results of two sets had negligible difference with one set giving coefficient value of 0.78 and the other set a value of 0.81 which ascertained the reliability of the instruments. On receiving the questionnaires, the researcher established if they were duly completed. The data on the questionnaire was then coded, classified and summarised for analysis. Descriptive analysis

was then done to describe the population and test the objectives. This enabled the researcher get the percentages and counts of bank customers' opinions on the issues being researched.

Based on bank customers' responses, the researcher came up with findings which were used to make conclusions and give recommendations. These findings were as a result of data analysis in chapter four. The researcher used descriptive survey in this study which aimed at collecting data from bank customers in relation to their access to mobile banking services in Kenya commercial bank. To ascertain the reliability of the instruments, the researcher carried out a pilot study and a test was split in two and the scores for each half on comparison showed consistency which led the researcher to believe that the instruments measured the same thing. This also set the ceiling of validity of the instruments. The findings of the study were:

5.2.1 Influence of Education Level on M-Banking

Majority of respondents were educated up to university and tertiary college levels. However, education did not influence mobile banking. 36% of the respondents were educated up to university, 29% tertiary colleges, 14 % secondary and the rest had (10%) each i.e. primary and informal education. Education did not influence mobile banking because everybody in the sample owned a phone, operated a bank account and had subscribed to mobile banking.

Most of the respondents said mobile banking was not difficult to use and this cut across all education levels. However, skills are required to be able to operate effectively on a mobile banking platform. Majority of those who agreed were either educated up to primary or had gone through informal education. Nonetheless a number of those who had better academic credentials were hesitant and acknowledged that the process was tedious and difficult at first instant but became easier as they used it time and again. It was noted that those who had informal education and those up to primary had difficulty in operating mobile handset to

access bank services while others forgot their passwords and were mainly concerned about the security of transacting through a mobile. It was discovered that mobile banking was not the preserve of the high class and the learned and was also found out that mobile banking is user friendly and did not require any mental effort. This is true even for people with primary and informal education. There is need for the banking industry to remove this misconception for the few who disagree.

5.2.2 Influence of Users' Age on M-Banking

Like education, age did not influence mobile banking. Respondents consisted of 26-35 years (about 32%), 36-50 years (about 29%) and over 50 years (about 21%) of the sample. Age did not influence mobile banking because everybody in the sample was found to own a mobile phone, operate a bank account and were subscribed to mobile banking. However age-wise, access of mobile banking services varied from one age group to the other. Bank customers from 18 to 25 years frequently used their mobile phones to purchase airtime and transfer funds to and fro Mpesa while 26-50 years of age were noted to transfer funds from one account to another or to Mpesa and vice versa via mobile phone, check account balances, pay bills and buy airtime and those above 50 years were mostly checking their bank account balances. There were two main types of services accessed by mobile banking customers across all age groups which were checking balance and transferring funds. The least used method was paying bills. There is need to find out why this is so with aim of popularizing the product. However bank customers over 50 years of age believed that it was difficult to transact through a mobile handset due to diverse reasons associated with age and a few mentioned were poor eyesight, long procedure and memory of password. The long and difficult procedure was noted to be influenced by age as well as level of education as majority of the bank customers who stated were over 50 years of age, primary as their level of

education and the informally trained. They (>50 years of age) also had difficulty in making successful transactions as they were either time barred or used wrong commands.

5.2.3 Influence of Cost of Services on M-Banking

It was found that the cost of mobile banking was not too high however a sizeable number said it was high. Majority of bank customers (about 64%) disagreed that the cost for mobile banking was too high. Only about 29% said the cost was high and about 7% were neutral. However those who agreed the phone cost was high did not have substantial explanations to back their claim as they further added that Mobile handsets for mobile banking have special features and is not the case as it was confirmed that any mobile phone type can be used and consequently awareness was noted to be deficient. There is need for further studies to find out why some feel the cost is high and come up with ways of reducing it down. This finding should be used by banks to popularize mobile banking as some people are not aware of it or think that it is only meant for the privileged few.

5.2.4 Security Concerns and their influence on Mobile Banking

Majority of respondents said there were losses due to fraudulent access of customers' accounts through hacking. Majority of bank customers (40%) agreed with the fact there were losses due to fraudulent access of customers' accounts through hacking. A sizeable number (about 32%) said there were no losses incurred and a few (28%) remained neutral. Even with loss due hacking, over 70% of respondents felt their banks were trustworthy and for the few incidences, bank customers acknowledged the fact that the bank was investigating and refunds made where proof of fraudulent activity was identified. In order to protect customers' accounts, there is need to employ disciplined, qualified and well remunerated ICT in the bank and at the level of mobile provider. In past there have been incidences of bank officials colluding with fraudsters to fleece customers' accounts. This practice should be eliminated with advent of ICT.

Majority of respondents also experienced loss due to wrong input of account number. About 89% experienced loss due to wrong input of account number. Only an insignificant number of respondents (about 11%) said they did not experience any loss due to wrong input of account number. The most affected group were bank customers above 50 years of age. This was attributed to poor eyesight however the young and educated were also victims as they made errors due to speedy input of information without confirming. They also added that loss of security passwords and mobile handset had subjected them to risks and thus was a security concern. It was noted from their responses that at some point mobile handsets were lost under unclear conditions which later on resulted to loss of funds. They acknowledged that relatives and close friends were the most notorious as they were the perpetrators due to easy password access. This was established as a major challenge to bank customers with poor eyesight as they frequently seek out assistance and as a result disclosed the pin numbers. In order to make mobile banking popular to all, there is need to come up with better ways of protecting customer accounts. There is also need for a comprehensive ICT policy that also covers mobile banking.

5.3 Conclusion

In this paper we analysed the factors influencing use of mobile banking in Kenya, a case of Kenya Commercial Bank in Garissa.

A key finding in a research on “Banking on WAP” was that mobile banking is critical for customer retention in the banking industry (Metrica Research Limited, 2000). Therefore, the adoption and use of mobile banking services by the bank customers is fundamental to the bank as this will enhance customer retention and increase bank’s market share as a result of referrals owed to effective mobile banking platform. The findings of this study are also indicating that there is a need for banks to develop a technically, reliable and easy to understand mobile banking system. It is also a desire that the banks need to sensitize on cost effectiveness to

their customers as it revealed that a few admitted that the cost of accessing mobile banking services was high. It is essential for banks to sensitize on mobile banking and ensure that customers maximize its use bearing in mind the capital invested. Moreover, the researcher believes that this is almost first of its kind in this part of the world and is therefore difficult to generalize. Many behavioral implications have not been considered in depth. This study can be used as a base for future research.

5.4 Recommendation

Based on the findings of the study, the researcher came up with recommendations whose aim if implemented would enhance adoption and successful usage of mobile banking.

- The banking industry with the Ministry of planning and development should capitalise on this findings to eliminate customers' misconception through sensitising the community that mobile baking was not a preserve for the few who have it.
- This finding should be used by banks to popularize mobile banking as some people are not aware of it or think that it is only meant for the privileged few.
- Central bank of Kenya in conjunction with Ministry of Finance should use this finding and launch a campaign to sensitise people on mobile banking security measures put in place to protect them from fraudulent activities and also to make mobile banking popular to all.
- Central bank of Kenya and banking industry as a whole through this finding should see a need for a comprehensive ICT policy that covers mobile banking.
- The bank should come up with the mechanisms of preventing bank frauds especially through technology

5.5 suggestions for further studies

- There is need to replicate this study in other banks, this will enable comparison of the results. The study did dig into the details of the cultural and economic impact of the m-banking technology and was biased as it only sampled respondents in Garissa and therefore can be grounds for same or related research.
- There is need to carry out a study on to establish why payment of the bills is the least service sought by KCB customers.
- Based on response on security risks associated with mobile banking i.e. 40% agreed hacking was a security risk and 89% acknowledged the fact that they lost funds due to wrong input of information, it is possibly there could be a better understanding of the reasons why some of the respondents placed so much fear on mobile banking security risks. Therefore, further research is recommended on the effect of security risks on the adoption of mobile banking.

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APPENDICES

Appendix 1: Letter of introduction

Dear respondent

I am a post graduate student pursuing a Masters degree in project planning and management at the University of Nairobi. I am conducting an academic research on the impact of Mobile banking on Kenyan economic development.

This questionnaire is aimed at obtaining more information about your opinions, perceptions, experiences and particular issues on Mobile banking technology. Your business story and particular experiences in accessing Mobile banking services will be valuable to this study.

This will later result to valuable recommendations on how the service and technology can be improved.

My request is that you try and answer the questions as comprehensively as possible by using the available space provided. If you need more space you can add the same as an attachment. Your response will be treated with utmost confidentiality it deserves and no name will be disclosed without your consent.

Thank you in advance.

Yours faithfully

Korir Geoffrey

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Appendix 2: Questionnaire for bank customers

You are kindly requested to complete the questionnaire as honestly and objectively as possible giving as much details as possible where necessary.

Section A:

1. Name (optional)

2. Age

18-25 [] 25-35 [] 35-50 [] Above 50 []

3. Gender

[] Male [] Female

4. Education

i. Primary []

ii. Secondary []

iii. Technical and vocational education []

iv. University []

v. No formal education []

vi. Others (specify)

5. Do you have or use a mobile phone?

[] Yes [] No

6. Do you have a bank account?

Yes [] No []

7. Are you subscribed to mobile banking service?

Yes [] No, not interested []

8. If Yes on question 7, what do you use mobile banking for?

[] Buy airtime [] Transfer funds [] Check balance [] Pay bills [] Cash withdrawal

[]

Others.....

9. In your opinion, do you think Mobile banking technology is complicated and difficult to use?

Yes [] No []

If yes above, what in your view are the technicalities involved in Mobile banking?

.....
.....
.....

10. Are Mobile banking transactions secure?

Yes [] No []

If No, what risks have you encountered?

.....

11. Are you satisfied with the authentication process with service provider when initiating a transaction?

Yes [] No []

If No, what in your opinion do you think is a challenge as far as financial transactions are concerned?.....

.....

Section B: Five-point Likert scale questionnaire

Please indicate the extent to which you agree or disagree with each of the following statements. Tick a number from 1 to 5 that best represents your level of agreement with the statement.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I think that interaction with mobile banking does not require a lot of mental effort.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I think that it is easy to use mobile banking to accomplish my banking tasks.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
When transaction errors occur, I worry that I cannot get compensation from banks.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
It would take me lots of time to learn how to use mobile banking services.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

I would not feel totally safe providing personal privacy information over mobile banking.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I think that learning to use mobile banking would be easy.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
When transferring money through mobile banking, I am afraid that I will lose money due to careless mistakes such as wrong input of account number and wrong input of the amount of money.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I believe banks are trustworthy.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I'm worried about use mobile banking because other people may be able to access my account.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
When my bank account incurs fraud or hacking, I will have a potential loss of money and status in my social group.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I think the transaction fee (bank charges) is expensive to use	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I would not feel secure sending sensitive information across mobile banking.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I think the mobile phone cost for mobile banking is expensive.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
The cost of subscription is high	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
The service is preferably for High class of people and educated.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
It is easy to use and learn how to use Mobile banking system	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
If I lose the mobile phone as a mobile banking user I will lose my money as well.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
It requires sufficient skills to operate on Mobile banking platform	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

Appendix 3: Garissa County map

