FACTORS INFLUENCING THE ADOPTION OF MOBILE BANKING TECHNOLOGY BY BANK CUSTOMERS IN MACHAKOS TOWN

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DECLARATION

I understand that plagiarism is an offence and I therefore declare that this projectreport is my original work and has not been presented to any other institution for any other award.

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DEDICATION

This project is dedicated to my husband Bernard, our children Juliana,Mumo,Muuo, Francis, Museo and my parents Amos and Ruth.

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ABBREVIATIONS AND ACRONYMS

ATM - Automated Teller Machine

BOP - Bottom of the Pyramid

CCK - Communication Commission of Kenya

DOI - Diffusion of Innovation

HTML - Hyper Text Mark-up Language

M FS - Mobile Financial Services

PDA - Personal Digital Assistant

PEOU - Perceived Ease of Use

POS - Point of sale

PU - Perceived Usefulness

SACCO - Savings and credit co-operative societies

SBI - State Bank of India

TAM - Technology Acceptance Model

TRA - Theory of Reason Action

UMTS - Universal Mobile Telecommunication System

UPB - Universal Powerline Bus

USSD - Unstructured Supplementary Service Data.

WAP - Wireless Application Protocol

DEFINITION OF TERMS

Financial inclusion - It is the delivery of financial services at affordable costs to sections of disadvantaged and low-income segments of societySaleem(2011).

Financial institution - Is an establishment that conducts financialtransactions such as investments, loans, and deposits Siklos(2001).

Information asymmetry- It deals with the study of decisions in transactions where one party has more or better information than the other Aboody (2001).

Innovation - Something original and more effective and as a consequence, new,that"breaks into" the market or society Leifer(2000).

M-banking - Mobile banking is a system that allows customers of a financialinstitution to conduct a number of financial transactions through a mobile device, tablet or PDA Porteous (2006).

Paradigm shift - A change from one way of thinking to another. It's a revolution, a transformation a sort of metamorphosis.It just does not happen, but rather it is driven by agents of change Kuhn (2000)

ABSTRACT

Over the years, banking has undergone transformation from the traditional way of customers queuing for services in the banking halls to modern day banking where banks can be reached at anytime and anywhere for their service. Today banks have welcomed mobile technology as a package which enables bank customers to pay bills, deposit, plan for payment, check account balance and transfer money anytime anywhere. Empirical research has shown that while mobile banking have become popular in some countries and regions, they are still not widely used. This study sought to identify and investigate the factors which influence customers decision to use mobile banking in Kenya with a particular interest in Machakos town. A descriptive research design was employed. The study targeted a population of 116,800 bank customers from three commercial banks purposively selected for this study, from which a convenient sample of 399 customers was selected. The formula by Israel (1992) which was also used by Oluoch (2012) was used to calculate the sample. To collect data, the researcher used a closed ended structured questionnaire that was personally administered to the respondents. Data was analysed using descriptive and inferential statistics. This analysis focused on establishing the influence of bank factors, individual customer characteristics, and availability of infrastructure, on adoption of mobile banking technology. An analysis on the association between the bank factors, individual customer characteristics and availability of infrastructure (independent) and Mobile banking adoption it was established that there is a strong positive correlation between bank factors, individual customer characteristics and availability of infrastructure (independent) variables and adoption of M-banking(dependent) with individual customer characteristics having a closer association compared to the others. This was followed by bank factors. The factor with the least association was the availability of infrastructure. The positive correlation implies that there is a significant association between the independent variables and adoption of M-banking implying an increase in any of the independent variables will cause a positive increase in adoption of M-banking and vice versa.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the study

The invention of the mobile phone marked the beginning of a revolution in the ways in which people communicate and transact. It has redefined communication and has reshaped the way services are provided. The mobile phone has brought many changes, affecting the lives of people and the way businesses are run. Today office workers do not need to be physically present in the office to carry out their duties. This is because they can do the work at any point via mobile phone. It has changed the lives of billions of people around the world, becoming for many an indispensable device Laukkanen(2007a).The mobile phone is also an ever- evolving device becoming increasingly sophisticated, slimmer, and multifunctional. It allows performing several activities such as communicating, connecting to the internet, effecting payments through services such as M-pesa. These distinctive features have made the mobile phone evolve into a channel conducive for the provision of many services. Many firms are increasingly realising that there are indeed huge opportunities to be tapped with the mobile phone technology. The ever increasing and large mobile phone user base is pushing firms more and more towards "mobile" strategies. The financial services sector in particular, has responded quickly to this mobile era with many financial institutions starting to offer mobile banking services.

Mobile banking is a system that allows customers of a financial institution to conduct a number of financial transactions through a mobile device, tablet or Personal Digital Assistant. With mobile banking, customers are able to have anywhere and anytime access to banking services including loans. In March 2015 Kenya commercial bank signedagreements with Safaricom that will enable lender extend advances from as low as Sh. 50 via handsets. This product is a crucial answer to our country's effort to empower millions of Kenyans by availing credit conveniently through their mobile phones. Through this, it is clear that mobile banking technology will make Kenya realise its vision of ensuring availability of credit to finance its overall investment needs (Kenya's vision 2030).

In Kenya banks have launched mobile banking in their product offerings for example , Coop cash of cooperative bank, Mobi bank of Kenya commercial bank, Hello money

of Barclays bank, Eazzy 24/7 of Equity bank, SIM-ple banking of National bank, M-shwari of Commercial bank of Africa, Patacash of Kenya post office Savings Bank and the latest financial innovation by Equity bank Equitel where Equity bank has come up with its own sim card such that its customers do not need to rely on the sim cards from the mobile phone companies.Barclays bank has recently brought into the market "One Africa" this allows customers in Africa to access their accounts through their mobile phone.

Mobile banking is important because customers are able to transact their business anywhereanytime; it is time independent, convenient, prompt to the customer and also time saving. On the part of the bank it enables banks to expand their market penetration, it creates an opportunity for the evolution of banking services to reach the previously unbanked population through mobile banking.A good example is where commercial bank of Africa has partnered with Safaricom through their product M-shwari where the M-shwari customers do not have bank accounts but they can save with M-shwari, borrow loans as low as sh 50 and repay at 2 and 4 percent interest. The customers must be registered with M-pesa. Daily Nation Wednesday March 11,2015 Safaricom chief executive Bob Collymore said "Mobile technology has greatly transformed our lifestyles.It is increasingly making it more convenient for customers to pay utility bills, withdraw or deposit money in their bank accounts as well as borrow by the click of a button" It is evident that mobile banking is beneficial to the customers. Despite this, the rate of mobile banking adoption is still very low,evidenced by the long queues being witnessed in the banking halls. The study provides more information on M-banking in Kenya and also the possible barriers to adoption or potential factors that encourage Kenyans to use mobile banking technology.

1.2 Statementof the Problem

Kenya's long term plan for national transformation,vision 2030, identifies financial services as one of the six priority sectors under the economic pillar.The financial system is therefore very important for economic development if Kenya is going to achieve its goal of enabling Kenyans to effectively access financial services. Mobile banking is one of the financial innovations that banks have offered in the market

which has seen customers being able to access financial services effectively, conveniently and most cheaply. Banks in Kenya have implemented mobile banking technology as one of their product offerings offered to their customers so as to reach more customers, provide services anywhere anytime and also reduce the cost of providing services to the customers. The communication commission of Kenya (CCK) through the implementation of the "Kenya communication act" has also created an enabling environment for mobile telephony to thrive in. Despite this, there is congestion and long queues in the banking halls meaning that most customers do not use mobile banking. There is little research that has been undertaken on the factors that affect the adoption of mobile banking in Kenya, there is therefore need to establish through research the factors influencing the adoption of mobile banking technology by customers in Machakos town.

1.3 Research Objectives

1.3.1 GeneralObjective

The overall objective of the study was to determine the factors influencing the adoption of M-banking technology in Machakos town.

1.3.2 Specific Objectives

i. To establish the influence of bank factors on adoption of M-banking technology among customers in Machakos Town.
ii. To determine the influence of individual bank customer characteristics on Adoption of M-banking technology among customers in Machakos Town.
iii. To investigate the influence of availability of infrastructure on the adoption of mobile banking among customers in Machakos Town.

1.4 Research Questions

i. What is the effect of bank factors on adoption of M-banking technology among customers in Machakos town?
ii. Does individual bank customer characteristics have any impacton adoption of M- banking by bank customers in Machakos Town?

iii. To what extent does availability of infrastructure influenceadoption of mobile banking technologyamong customers in Machakos town.

1.5 Significance of the study

The study will be of great importance to banks and other financial institutions as it will provide useful information that will be required in the implementation of mobile banking technology. A better understanding of these factors will enable mobile banking service providers to develop suitable business models, awareness programmes and marketing strategies.

It will also guide policy makers in designing suitable policies that will enhance financial access through mobile banking. The study will be important to the government of Kenya which seeks to achieve millennium development goals and the vision 2030 where access to financial services is one of the six priority sectors under the economic pillar. The study will also provide a blue print on whether the government is achieving its goals to provide financial services to all.

The study will identify knowledge gaps and provide suggestions for further research. It will also add to the existing body of knowledge which will be useful for decision making purpose. It will also provide reference material to future researchers on banking and information technology.

The information is valuable to developers in the building of mobile banking systems that consumers want to use and also help them to discover why potential users avoid the existing system. The study can also be used as a basis to conduct further studies on M-banking and mobile services in general.The study provides insight on M-banking in Kenya. Local banks,Saccos and other financial institutions will benefit the most from the findings of the study as an in-depth assessment and analysis of M-banking wasmade. Any firm considering launching mobile services in Kenya can also get meaningful and valuable insights by extrapolating the results of the study.

1.6 Scope of the study

The study focused on the bank customers from three commercial banks within Machakos town which were purposively selected for this study. They included KCB bank, Equity Bank and Co- operative Bank. Data wascollected from the identified bank customers.

1.7 Limitations and Delimitations of the study

One of the limitations of this study was that some respondents were so much in a hurry and others preferred to finish their business in the bank first and then fill the questionnaires. To overcome, the researcher was patient with them. Other respondents did not respond at all. To overcome, the researcher assured them that their identity was to remain anonymous and the responses were to be used for academicpurposes only.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter gives both theoretical and empirical literature review. The theoretical part deals with theories related to the subject of study and they form the basis from which the study variables are obtained .The empirical literature review will givethe various studies that other researchers have done and their findings. Finally the chapter will highlight the research gaps that have been identified from the empirical studies and then later a conceptual framework is designed.

2.2 Theoretical review

The theoretical literature review focused on the theory of planned behaviour, diffusion of innovation theory, theory of reasoned action, thetechnology acceptance model and empirical studies on diffusion of innovation theory and finally the research gap and the conceptual framework.

2.2.1 Theory of Planned Behavior

The theory of planned behaviour suggest that a central factor in human behaviour is behavioural intention, which is affected by attitude towards behaviour, subjective norm,and perceived behavioural control (Ajzen1985, 1991, 2002). Subjective norm expresses the perceived organizational or social pressure of a person who intends to perform the behaviour in question.Subjective norm is relative to normative beliefs about the expectations of other people.Perceived behavioural control reflects a person'sperception of the ease or difficulty of implementing the behaviour in question .It concerns beliefs about the presence of control factors that may facilitate or hinder their performing of the behaviour.

2.2.2 Theory of Reasoned Action

It is a psychological theory that tries to explain an individual's action that is determined by his or her behavioural intention to perform it(Ajzen and Fishbein2005). According to Puschel et al. (2010) behavioural intention is explained by people's attitude towards that behaviour and subjective norms. People's attitude towards

behaviour includes behavioural beliefs,assessment of the consequences of behaviour,subjective norms,normative beliefs and motivations that must be answered In this theory, so long as the behaviour is voluntarily controlled by the individual, can accurately explain the factors influencing technology adoption Laukkanen and Cruz (2009).Thus, this theory is a useful model that is used to investigate factors affecting adoption of mobile banking.

2.2.3 Diffusion of Innovation (DOI) theory

According to Rogers E.M 1962, Diffusion of innovation (DOI) theory is one of the oldest social science theories. It originated in communication to explain how, overtime, an idea or product gains momentum and diffuses or spreads through a specific population or social system. The end result of this diffusion is that people as part of a social system, adopt a new idea, behaviour, or product. Adoption means that a person does something differently than what they had previously (i.e. purchase or use a new product, acquire or perform a new behaviour etc).The key to adoption is that the person must perceive the idea, behaviour or product as new or innovative, it is through this that diffusion is possible. Diffusion of innovation theory attempts to explain and describe the mechanisms of how new inventions in this case internet and mobile banking is adopted and becomes successful (Clark2012). Mannan(2013) stated that not all innovations are adopted even if they are good, it may take a long time for an innovation to be adopted. He further stated that resistance to change may be an hindrance to diffusion of innovation although it might not stop the innovation, it will slow it down.

Rogers (1995) identified five critical attributes that greatly influence the rate of adoption. These include: relative advantage, compatibility, triability and observability. According to Rogers, the rate of adoption of new innovations will depend on how the organization perceives its relative advantage, compatibility, triability, observability and complexity. If an organization in Kenya observes the benefits of mobile and internet banking, they will adopt these innovations given other factors such as the availability of the required tools. Adoption of such innovations wasfaster in organizations that have internet access and information technology departments than in those without**.**

2.2.4 Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) (Davis, 1989), adapted from the Theory of Reasoned Action (TRA)by Ajzen& Fishbin (1980), is an information systems theory that models how user's come to accept and use a technology .The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it,notably: Perceived usefulness (PU). This was defined by Fred Davis as "the degree to which a person believes that by using a particular system would enhance his or her job performance:Perceived ease of use (PEOU). Davis defined this as "the degree to which a person believes that using a particular system would be free from effort (Effortless) Davis(1989).

A study conducted in Egypt on the intention of continuing usage of internet banking by customers employing the TAM model, showed that perceived ease of use is the main factor for continued use of internet banking. El-Kashir et. al (2009).Izogo;et.al,(2012) have cited a study conducted in Thailand on mobile banking adoption showing that customers may adopt the mobile banking technology only if they perceive the technology as being useful.

Masinge (2010) conducted a study on the factors influencing the adoption of mobile banking services at the bottom of the pyramid (BOP) in South Africa, and added perceived cost, trust and perceived risk as contracts to TAM. The findings of the study revealed that perceived usefulness (PU),perceived ease of use (PEOU), perceived cost, and customer's trust had a significant effect on the adoption of M-banking at the BOP while perceived risk (PR) was found to have no significant effect.

2.3 Mobile Financial Services (MFS)

Mobile financial services (MFS) encompasses a broad range of financial activities that consumers engage in or access using their mobile phones.MFS can be divided into two distinct categories: mobile banking (m-banking) and mobile payments (m-payments) Boyd & Jacob (2007).Mobile banking is defined as "a channel whereby the customer interacts with a bank via a mobile device, such as a mobile phone or personal digital assistant (PDA)" Barnes & Corbitt (2003).Mobile banking can also be considered as the convergence of mobile technology and financial services Chung &

Kwon (2009). M-banking is a subset of banking as it allows everyone easy access to their banking activities via mobile handsets Yu & Fang (2009).With the improvement of mobile technologies and devices, mobile banking has been considered as a salient system because of such attributes of mobile technologies as ubiquity, convenience and interactivity.

Mobile payments on the other hand are defined as the use of a mobile device to conduct a payment transaction in which money or funds are transferred from a payer to a receiver via an intermediary, or directly without an intermediary Mallat(2006).Mobile devices can be used in a variety of payment scenarios, such as payment for digital content (e.g.,ring tones, news, music, or games), tickets parking fees and transport fares, or to access electronic payment services to pay bills and invoices. Payments for physical goods are also possible, both at vending and ticketing machines, and at manned point-of-sale (POS) terminals Mallat et.al (2008).The terms "mobile banking" and "mobile payments" are distinct but in some cases overlapping sets of products. Some m-banking platforms provide services, such as money transfers, that are considered forms of mobile payments, while some m-payments products are so closely linked to bank accounts as the source of funds that they assume m-banking functions Boyd& Jacob(2007).

MFS refer collectively to a set of applications that enable people to use their mobile telephones to manipulate their bank account, store value in an account linked to their handsets, transfer funds, or even access credit or insurance products Donner & Tellez (2008).Ultimately, under banked consumers may benefit most from platforms that integrate both m-banking and m-payments features to provide a truly comprehensive financial services solution Boyd & Jacob (2007).However, mere presence of the technology or even enrolling the consumers for the service may not serve the ultimate cause. There had been cases where even a large number of enrolments had failed to translate into actual usage Krugel,et. al (2010).

2.4 Global mobile banking

Mobile banking is used in many parts of the world with little or no infrastructure, especially remote and rural areas. This aspect of mobile commerce is also popular in countries where most of the population are unbanked. In most of these places, banks

can only be found in big cities, and customers have to travel far distances to the nearest bank. For example, in Iran, Guatemala and Mexico consumers can access mobile banking with local mobile network. In 2009,Zain launched their own mobile money transfer business, known as ZAP, in Kenya and other African countries. Pakistan has also launched a mobile banking solution ,in coordination with Tameer bank, under the label Easy paisa, which was began in 2009.While in India, State Bank of India(SBI) provides bank accounts, deposit, withdrawal, and remittance services, micro-insurance, and micro-finance facilities to its customers through mobile banking Thomas (2010).

In countries as diverse as china, Brazil and Kenya the number of new users of mobile banking soared over 100% in 12 months as banks dropped the traditional service models and moved directly to mobile. The increases were not restricted to emerging markets alone though take-up rates also surged in the UK, USA, Singapore, South Korea and Sweden where banks offered customers new services via the mobile handset. Research has established that in Western Europe exists a noteworthy customer adoption of mobile financial services (MFS) for example Tiwari and Buse(2006) demonstrate that the ‘‘real rate of rejection’’ of MFS is with lower than 8%. Moreover, many bank customers are willing to pay extra for the utilization of MFS .These developments point towards an increasingly positive perception of MFS in the society. This positive shift in perception can be traced back to mainly following factors Tiwari et al (2006). The penetration of the society by mobile phones has reached an all-time high. The integration of world economies is leading to more mobility so that availability of mobile services is no more a luxury but a necessity for many. The younger generations of the society seem to be fascinated by modern data and telecommunication services. And Mobile devices have become more powerful. Data transmission has become faster with the launch of new standards, such as the Universal Mobile Telecommunications System(UMTS).

2.5 Mobile banking in Kenya

Mobile networks in Kenya offer m-money services in the name of M-pesa by safaricom, Orange money by orange, Yu-cash by Essar and Airtel money by Airtel. Currently the mobile money market size is about 15 million users transferring ksh. 2

million daily, of these over 14 million are M-pesa customers .M-money providers have partnered with commercial banks such as Equity bank, I&M bank, KCB bank, Barclays bank, Cooperative bank, Family bank, Kenya post office savings bank, National bank of Kenya and Standard chartered bank to offer mobile based financial products not only to those without access to traditional banks (the unbanked population) but also to the banked.

Some of those financial products offered through this partnership include: Mobi bank of KCB, Simple banking of National Bank of Kenya, Hello money of Barclays, M-shwari of commercial bank of Africa, Coop-cash of cooperative bank ,Patacash of Kenya Post office Savings Bank, Pesa pap of Family bank and M-kesho of Equity bank which was run parallel with Eazzy 247 and now Equity bank is currently rolling out Equitel innovation where the bank has its own sim card such that the customers do not necessarily need to have a sim card from the mobile phone companies. In addition the sim card is compatible with the existing mobile phones. Standard chartered bank and others have launched M-banking only that they do not have a specific trade name. The latest innovation is "One Africa" by Barclays bank which allows customers in Africa to access their accounts through their mobile phones. Local experts say banks in Kenya are competing to embrace mobile banking following the rise in the number of people who own mobile phones and have subscribed to mobile money transfer services. Out of the 28.08 million subscribers in the country, 18.9 million used their mobile phone money transfer services in 2010 according to the communication commission of Kenya (CCK).

2.6 Empirical review

Under this section the researcher has discussed what other researchers have said concerning the subject under study. Pyrzak and Bruce(2011) says that empirical review is important for it guides on the available literature on the study area. This is important because it helps in understanding the area of study better and avoiding duplication of work. This is done in line with the objectives of the study to identify the research gaps.

2.6.1 Bank factors and adoption of mobile banking technology

Tiwari, Buse and Herstatt (2006) studied mobile banking as a business strategy. Impact of mobile technologies on customer behavior and its implications for banks .The study sought to examine the opportunities for banks to generate revenues by offering value-added, innovative mobile financial services while retaining and extending their base to technology- savvy customers.

Mari (2003) conducted a study on adoption of mobile banking in Finland. The results from the study indicated that certain attributes of M-banking innovation drive it usage. The attributes include; relative advantage, compatibility and communication. The investigation of complexity and risk of using M-banking yielded no support as being barriers to adoption .The findings also revealed that, technology perceptions and certain demographical variables of the customers have a significant impact on adoption.

Kigen (2010) studied the impact of mobile banking on transaction costs of micro finance institutions where he found out that by then mobile banking had reduced transaction costs considerably though they were not directly felt by the banks because of the then small mobile banking customer base. Kigen (2010) sought to determine the impact that mobile banking had on transactional costs of microfinance institutions.

Al-jabri(2012) studied mobile banking adoption by looking at the application of diffusion of innovation theory. His findings suggest that banks in Saudi Arabia, should offer mobile banking services that are compatible with various current user requirements, past experiences, lifestyle and beliefs in order to fulfil customer expectations. With better mobile banking support and provision of variety of services, the more useful customers perceive mobile banking to be and to increase their level of adoption. Hence, bank's attention should focus on understanding customer behaviour and designing reliable mobile banking system that will meet their needs and provide useful and quality services. In addition banks should focus on communicating information that emphasises the relative advantage and usefulness of mobile banking compared to other banking channels like physical presence to the bank or using ATM machines. Banks must seek to reduce risk perceived by their customers by offering

specific guarantees protecting them and taking their complaints seriously and urgently.

2.6.2 Individual bank customer characteristics and adoption of mobile banking technology

Yao (2013) in a study of user adoption factors of mobile banking services based on trust and distrust perspective argues that the quality of information that customers have will affect will affect adoption, he says currently there exist information asymmetry between the user and the bank where the bank is in information superior position which is well aware of the operation mechanism and product advantages of the mobile banking .On the contrary, the user is the inferior party. Porteous (2007) in his study found that, most unbanked people were unbanked because of "economic reasons", which relate in part to their work status and in part to their perception that formal employment was a prerequisite for opening a bank account. He also found that young people tend not to have bank accounts and see less need for them and that m-banking users in general have a higher income, are more likely to live in urban areas, are in formal employment and slightly older than banked people with mobile phones. Porteous argues that, the early adopter profile appear to correlate more with the desired functionality than with factors which imply risk tolerance such as age. Additionally, a high proportion of the banked population either do not understand M-banking or have never heard about it.Despite these high levels of ignorance about M-banking, banked people still have a strong disapproving attitude.

In a different study "An investigation on mobile banking adoption and usage. A case of banks in Mauritius". The aim of the study was to gauge awareness level and to identify those factors that inhibit or motivate M-banking usage. It was found that awareness of local m-banking services is quite high and usage level is reasonable. Convenience, time and effort savings, privacy, ubiquitous access to banking services, compatibility with lifestyle and banking needs were identified as the main factors motivating m-banking adoption. Perceived security risk and reliability were the main obstacles while m-banking is not associated with gender and salary. Another study in Sudan by Karma.N.G (2013) revealed that customer's intention to use m- banking in Sudan is influenced strongly by perceived trust, perceived ease of use and perceived

risk. Perceived usefulness was found to have no influence on the intention to use m-banking services among bank customers of Sudanese banks.

Aker and Mbiti(2010) conducted a study to examine the evolution of mobile phone coverage and adoption in sub-saharan Africa over the past decade. The study found out that, the first people to adopt the mobile phones were primarily male, educated, young, wealthy and urban populations. This was due to the relatively high costs of handsets and services. By the year 2009, mobile phone was owned by even the poor, the elderly and rural populations, in part facilitated by the introduction of low-priced handsets and lower denomination mobile top-up cards. The study revealed that, on average, M-pesa users are wealthier, better educated, urban populations and are "already banked". The findings also showed that most of the M-pesa transfers are occurring within urban areas.

2.6.3 Availability of infrastructure and adoption of mobile banking

Ching et. al (2011) studied the factors affecting Malaysian mobile banking adoption from the point of empirical analysis. The study aimed at extending the Technology Acceptance Model (TAM) to investigate mobile banking acceptance in Malaysia. The objective of this study was to examine the relationship between constructs of perceived innovativeness, perceived ease of use, social norms, perceived risks and perceived relative advantage towards behavioural intention in adopting mobile banking. The findings of this study revealed that perceived usefulness ,perceived ease of use, relative advantage, perceived risk and personal innovativeness were the factors affecting the behavioural intention of mobile user's to adopt mobile banking services in Malaysia. Social norms were the only factor found to be insignificant in the study. Mari (2003) conducted a study on adoption of mobile banking in Finland. The results from the study indicated that certain attributes of M-banking innovation drive it usage. The attributes include; relative advantage, compatibility and communication. The investigation of complexity and risk of using M-banking yielded no support as being barriers to adoption .The findings also revealed that, technology perceptions and certain demographical variables of the customers have a significant impact on adoption.

Al-jabri (2012) studied mobile banking adoption by looking at the application of diffusion of innovation theory. This study sought to investigate a set of technical attributes and how they influence mobile banking adoption in a developing nation, like Saudi Arabia. The study used diffusion of innovation as a base-line theory to investigate factors that may influence mobile banking adoption and use. The objective of this research was to examine the potential facilitators and inhibitors of mobile banking adoption. The study was guided by six hypotheses including relative advantage having a positive effect on mobile banking adoption. Complexity having a negative effect on mobile banking adoption. Compatibility having a positive effect on mobile banking adoption.Trialability having a positive effect on mobile banking adoption, and perceived risk having a negative effect on mobile banking adoption. Al-jabri (2012) studied mobile banking adoption by looking at the application of diffusion of innovation theory. His findings suggest that banks in Saudi Arabia, should offer mobile banking services that are compatible with various current user requirements, past experiences, lifestyle and beliefs in order to fulfil customer expectations. With better mobile banking support and provision of variety of services, the more useful customers perceive mobile banking to be and to increase their level of adoption. Hence, bank's attention should focus on understanding customer behaviour and designing reliable mobile banking system that will meet their needs and provide useful and quality services. In addition banks should focus on communicating information that emphasises the relative advantage and usefulness of mobile banking compared to other banking channels like physical presence to the bank or using ATM machines. Banks must seek to reduce risk perceived by their customers by offering specific guarantees protecting them and taking their complaints seriously and urgently.

In Kenya a study by Kasyoki (2012) on factors affecting adoption of phone banking by customer's of commercial banks in Kenya found out that most of the respondents were in one form of relationship and were in some useful form of employment. It also found that the respondents used mobile banking because they found it cheap, safe and reliable to a greater extent, further the respondent's colleagues, friends and family influenced the respondents to adopt and use mobile banking while the influence of media on the adoption of mobile banking is not clear. The study also found out that mobile banking has a range of services, is convenient in doing bank transactions and

access to the bank service, saves time and has good connection speed. It also found out the advantages for using mobile banking provides easy access to bank account information ,mobile banking is secure than traditional banking, it is easy to learn to use ,it is safe and the mobile banking system is user friendly.

On the challenges of mobile banking, the respondents indicated that they cannot transact when the mobile phone network is down, sometimes the transactions are not online, some services are not available on mobile banking platform and phone software cannot access some utilities of mobile banking. On perceived risks the respondents indicated that they might not use mobile banking because their banks do not accept liability in case of loss, the technology of mobile banking is not easy to understand and information concerning my cell phone banking transactions can be tampered with by others. Perceived usefulness and perceived ease of use has a positive relationship in examining the intention to adopt mobile banking in Kenya. Relative advantage was found to be significant in determining the intention to use mobile banking. Personal innovativeness has a significant relationship towards the intention to adopt mobile banking in Kenya.

Oluoch (2012) did a study on the factors effecting the adoption of mobile banking in Kenya a case of bank customers within Nakuru municipality. This study found that perceived usefulness had a positive impact on mobile banking adoption while perceived risk was found to have a negative impact.

2.7 Summary of literature review

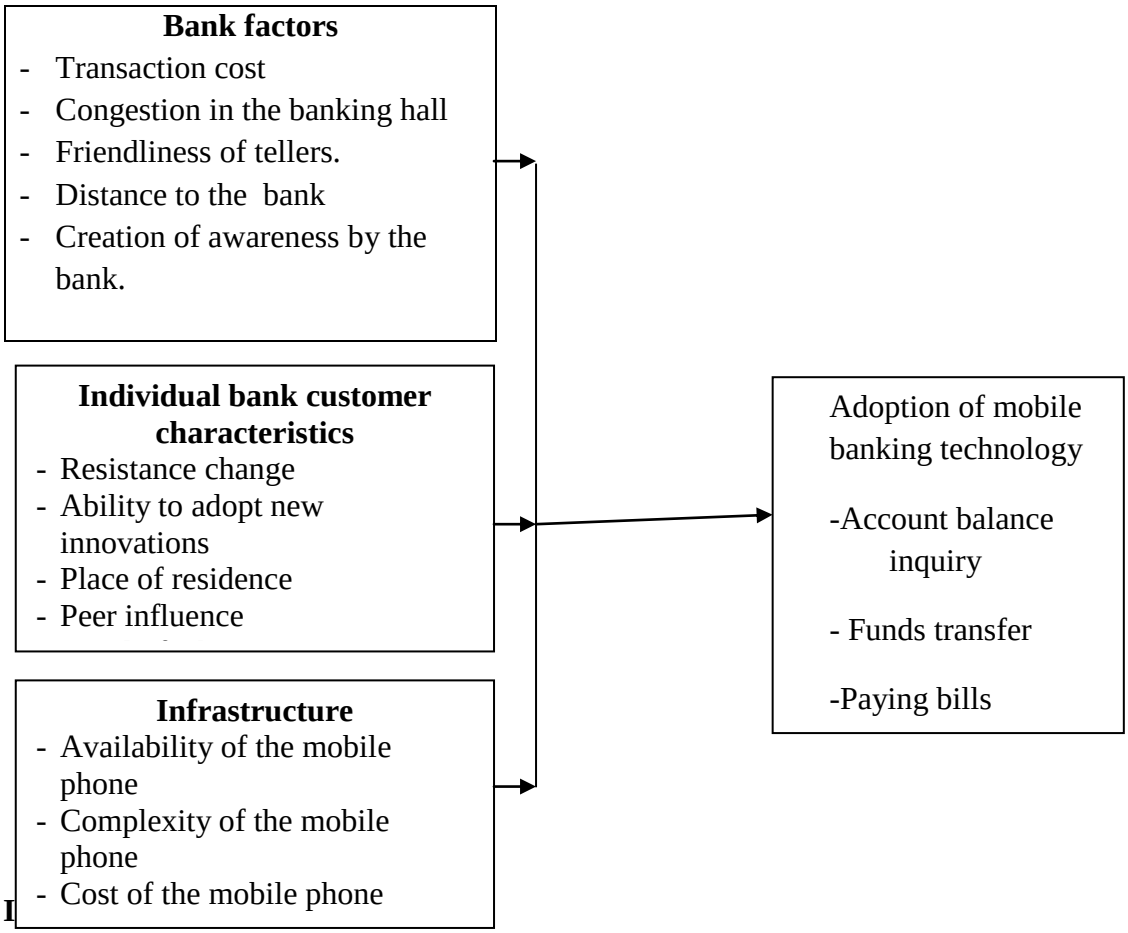
This chapter started by looking at the theoretical framework where it discussed the theories on which the study is found: Theory of planned behaviour, theory of reasoned action, diffusion of innovation theory and technology acceptance model. According to theory of planned behaviour the central factor in human behaviour is behavioural intention which is affected by attitude towards behaviour, subjective norm and perceived behavioural control. Theory of reasoned action on the other hand tries to explain an individual's action that is determined by his or her behavioural intention to perform it .Diffusion of innovation theory explains how, over time an idea or product gains momentum and diffuses or spreads through a specific population or social

system and lastly technology acceptance model which is an information systems theory that models how users come to accept and use a technology.

Theory of planned behaviour and that of reasoned action explain what may affect the behavioural intention while diffusion of innovation explains when and how a new idea is received and later adopted. Technology acceptance model focuses on the benefits of using a new system.From the above discussion of the theoretical and empirical literature, limited research has been conducted on bank factors, individual customer characteristics and availability infrastructure.This study therefore seeks to fill this gap.

2.8 The conceptual framework

The conceptual framework for the study has been developed from the literature review by highlighting the bank factors, individual customer characteristics and availability of infrastructure.



Source: Author (2016)

Figure 2.1: Conceptual Framework

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction

The chapter provides a description of the research methodology, the population of the study, sample size, the sampling procedure, how the subjects wereobtained and the rationale for their selection, the tools that were used together with the procedure that wasadopted in data collection and finally the analysis of the data.

3.2 Research design

Research design is the ultimate plan for the collection, measurement and the analysis of data Kothari (2004). Descriptive studies are concerned with describing the characteristics of a particular individual or of a group. They answer the questions of who, what, when, where, and how in a given topic Chandran (2004). The studies lead to a profile development of a situation or a group of people by acquiring complete and possible accurate information. This study adopted descriptive research design; this design was also used by Khraim (2011) in his study on factors affecting Jordanian consumer's adoption of mobile banking services. This research design seeks to describe the factors that affect the adoption of mobile banking by bank customers in Machakos town.

3.3 Population of the Study

According to Mugenda and Mugenda (2003) population refers to the entire group of individuals, events or objects having a common observable characteristic. The study focused on bank customers within Machakos town. Purposive sampling was used to select three commercial banks namely KCB Bank, Equity bank and Co-operative bank.

3.4 Target population

According to Cooper and Schidler(2003), a population is the total collection of elements about which we wish to make some inferences. The target population

comprised of all 116,800 bank customers in Machakos town who are currently operating bank accountsin the three selected banks.

3.5 Sample and sampling procedure

A sample was drawn from the target population of 116,800 bank customers in Machakos town.The formular by Israel (1992) was used and resulted to a sample size of 399 bank customers. The formular was also used by Oluoch (2012).

$$n = \frac{N}{1 + N (e)^2}$$

Where:

n = the desired sample size

N = the population size

e = level of precision (0.05)

Therefore;

$$n = \frac{116,800}{1 + 116,800 (0.05)^2}$$

= 398.63

= 399 Bank customers

The sample will then be stratified by bank as follows

Table 3.1: Bank customers stratified by bank

	No. of customers	Percentage	Sample size
Kenya commercial bank Ltd	22,800	19.5	78
Equity bank of Ltd	50,000	42.8	171
Co-operative bank of Kenya Ltd	44,000	37.6	150
Total	116,800	100	399

Source: Ministry of trade, Machakos office

The respondents were selected through simple random sampling whereby the fifth customer arriving at the bank in a given date was selected by the researcher.

3.6 Data collection instruments

For the purpose of this study, data collection was carried out by administering structured questionnaires to the respondents. The questionnaire consisted of two sections. Section A, This gave the demographic details of the respondent and whether he respondent operated a bank account and owned mobile phone. Section B, This is about the perception of the respondent about mobile banking. A five point likert scale was used for statements varying from 1-not sure to 5-strongly agree. To ensure success the questionnaire wasshort, simple, with questions moving from easy to more difficult ones Kothari (2004).

3.7 Data collection procedure

An introduction letter was obtained from South Eastern Kenya University school of Business. The researcher used questionnaires to collect primary data from the respondents. The questionnaires were self-administered to the identified bank customers.

3.8 Data processing and analysis

Before processing the responses, the completed questionnaires were edited for

completeness and consistency. A content and descriptive analysis was employed. The content analysis was used to analyse the respondents' views. The data was then coded to enable the responses to be grouped into various categories. Descriptive statistics were used to summarize the data including percentages and frequencies. Tables and other graphical presentations as appropriate were also used to present the data collected for ease of understanding and analysis. Statistical Package for Social Sciences (SPSS) was used to analyse the data. Inferential statistics, Pearson correlation, which ranges from negative one to positive one inclusive ($-1 \leq r \leq +1$) was used to test the association between the dependent and independent variables. Multiple regressions were also used to determine the prediction factor of dependent variable caused by independent variables. Similar model was used byIngari & Achieng (2015) in a study on factors influencing adoption of mobile banking in Kenya's commercial banks: A case of Kenya commercial bank Kilindini branch. $Y = A+\beta_1X_1+ \beta_2X_2+ \beta_3X_3 + e$

Where:

β_1, β_2,andβ_3 s are the regression coefficient of the independent variables

Y = Dependent variable (adoption of mobile banking among customers in Machakos Town.)

A = Constant

X_1 = Bank factors

X_2 = Bank customer characteristics

X_3 = Availability of infrastructure

e is the error term normally distributed about a mean of zero. For computation purposes it is assumed to be 0.

To test for the strength of the model and the factors influencing the adoption of mobile banking among bank customers,the researcher conducted an Analysis of Variance (ANOVA).On extracting the ANOVA statistics, the researcher looked at the significance value. The study was tested at 95% confidence level and 5% significant level.

CHAPTER FOUR

4.0 RESULTS

4.1 Introduction

This chapter covers the study response rate and then provides the descriptive statistics of the study variables which are bank factors, individual bank customer characteristics and availability of infrastructure in relation to the adoption of mobile banking among customers in Machakos Town by way of frequency tables, frequency histograms or pie-charts.

4.2 Response Rate

Out of 399 bank customers that the study targeted, data was available for 350, representing a success rate of 87.7%, which was considered acceptable. Kasyoki (2012) in a study on factors affecting adoption of mobile phone banking by customers of commercial banks in kenya obtained a success rate of 78.3% while Ingari & Achieng (2015) in a study on factor's influencing the adoption of mobile banking in kenya's commercial banks: A case of Kenya commercial bank Kilindini branch had a success rate of 60.9%.

Table 4.1:Response Rate

Categories	Responses	Percent
Returned	350	87.7
Partially answered	49	12.3
Total	**399**	**100.0**

Table 4.2: M-banking services

Services	5	4	3	2	1
Cash deposit	40(27%)	69(47%)	7(5%)	15(10%)	16(11%)
Cash withdrawal	56(38.1%)	58(39.4%)	8(5.7%)	20(13.6%)	5(3.4%)
Money transfer	25(17%)	23(15.6)	85(57.8%)	7(4.8%)	7(4.8%)
Loan payment	0(0%)	0(0%)	102(69.4%)	20(13.6%)	25(17%)
Billspayment (e.g electricity)	12(8.2%)	56(38.1%)	5(3.4%)	30(20.4%)	34(23.1%)
Mobile top up	75(51%)	35(34.4%)	16(17.7%)	10(6.8%)	11(7.5%)
Balance enquiry	86(58.5%)	20(13.6)	18(12.24%)	11(7.5%)	12(8.2%)
Ministatement	16(8.2%)	14(9.5)	73(49.7%)	22(15%)	22(15%)
Mean responses	**39(26.5%)**	**39(26.5%)**	**40(26.9%)**	**17(11.6%)**	**12(8.2%)**

Table 4.2 was rated on a scale of 1-5 where the respondents indicated how often M-banking services were used by the respondents. The scales were; Don't use (1),Very rare (2), Rarely (3), Frequent (4) and Very frequent (5). The results shows that majority (58.5%) and 51% of the respondents indicated that the M-banking was frequently used for balance enquiry and mobile top up. It was also noted that M-banking was rarely used for loan repayment (69.4%).

4.3 Correlation analysis

To establish the relationship between the independent (bank factors, Bank customer characteristics and availability of infrastructure) and adoption of M-banking, the researcher used Pearsons' product moment correlation as shown in Table 4.3.

Table 4.3: Correlation matrix

		Bank factors	Individual customer characteristics	Availability of infrastructure	Adoption of M-banking
Bank factors	Pearson Correlation	1	.721**	.763**	.781**
	Sig. (2-tailed)		.000	.000	.000
	N				33
Individual customer characteristics	Pearson Correlation	.721**	1	0.00**	.802**
	Sig. (2-tailed)	.000		.000	.000
	N				33
Availability of infrastructure	Pearson Correlation	.763**	.000**	1	0.761**
	Sig. (2-tailed)	.000		.000	.000

Table 4.3 revealed that there is a strong positive correlation between all the independent variables (bank factors, individual customer characteristics and availability of infrastructure) and adoption of M-banking, with individual customer characteristics leading with r = 0.802 followed by bank factors with r = 0.781. The least correlation was between availability of infrastructure (r = 0.761). The positive correlation implies that there is a significant association between the independent variables and adoption of M-banking implying an increase in any of the independent variables will course a positive increase in adoption of M-banking and vice versa. It was observed that the individual customer characteristics were closely associated with adoption of M-banking compare to bank factors and availability of infrastructure. The correlation matrix also shows that there is a chance of multicollinearity.

4.4 Multiple regression analysis

The researcher further sought to establish the contribution of each of the independent variables; (bank factors, Bank customer characteristics and availability of infrastructure) to adoption of mobile banking.

4.4.1 Model summary

Table 4.4 Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.943[a]	.888	.884	.41599

a. Predictors: (Constant), bankfactors, customer factors, infrastructure

In the model summary Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variables, from the findings as shown in the table the value of adjusted R squared was 0.884 an indication that there was variation of 88.4% on the adoption of M-banking is due to changes in bank factors bank customer characteristics and availability of infrastructure at 95% confidence level. R is the correlation coefficient which measures the association between the study variables and the dependent variable. From the findings shown in the table below there was a strong positive association (r =0.943) between the study variables and dependent variable.

4.4.2 The Analysis of Variance (ANOVA)

To determine whether the overall regression model was a good fit for the collected data, an ANOVA was done. The ANOVA analysis was intended to investigate whether the variation in the independent variables explain the observed variance in the adoption of M- banking. The ANOVA results indicate that the independent variables significantly explain the variance in growth of the adoption of mobile banking. The output in this case is presented in the table 4.5

Table 4.5: ANOVA

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	2.221	349	2.113	9.11	0.000
Residual	10.121	1	0.745		
Total	12.343	350			

Dependent Variable: Adoption of M-banking, Predictors: (Constant), bank factors, Bank customer characteristics and availability of infrastructure.

The results show that the regression model has a less than 0.001 likelihood of giving a wrong prediction. Hence the regression model has a confidence level of 95%.

4.4.3 The regression model

The regression model was used to establish the relationship between the independent variables and the dependent variable.

Table 4.6: Coefficients of the regression model

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.554	.204		17.124	.000
Bank factors (X_1)	0.552	.0501	0.356	1.221	.001
Customer characteristics (X_2)	0.221	.116	.552	1.332	.001
Infrastructure (X_3)	0.682	.111	.642	2.212	.000

It can be noted that the independent variables were all significant at 5% significant level.

The model was obtained as;

$Y = 0.554 + 0.552X_1 + 0.221X_2 + 0.682X_3 + e$

4.5 Interpretation of regression model

The researcher further interpreted the regression model in line with the objectives.

According to the regression equation established taking all other factors constant that is bank factors, individual customer characteristics and availability of infrastructure constant at zero, the adoption of mobile banking will be 0.554.

4.5.1 Bank factors

The first objective for this study was to establish the influence of bank factors on adoption of M-banking technology among customers in Machakos Town. The regression model shows that bank factors had the highest contribution to the model (0.552)implying that a unit change in banking factors would lead to a change in M-banking technology among customers by a factor of 0.552. The bank factors which influence adoption of M- banking includes; transaction cost, congestion in the banking hall, friendliness of tellers, queues in the banking hall, provision of drinking water in the banking hall, distance to the bank and creation of awareness by the bank. These results agreewith Laukkanen (2007) who argued that, with the introduction of M-banking technology by banks, the mobile phone has undeniably brought a paradigm shift, affecting both the lives of people and the business environment. It has permeated the lives of billions of people around the world, becoming for many an indispensable device. The souring and large mobile phone user base is pushing firms more and more towards “mobile” strategies. The financial services sector in particular, has responded quickly to this mobile era with many financial institutions starting to offer mobile banking services.

4.5.2 Customer characteristics and M- banking

The second objective for this study was to determine the influence of individual bank customer characteristics on adoption of M-banking technology among customers in

Machakos Town. The regression model revealed that the customer characteristics had the least contribution to the model (X_2 = 0.221). This implies that a unit change in customer characteristic would lead to a change in adoption of M-banking technology by a factor of 0.221. These results agree with Ajzen (2002) who argued that, Mobile banking is a system that allows customers of a financial institution to conduct a number of financial transactions through a mobile device, tablet or PDA. He further argued that, with mobile banking, customers are able to have anywhere and anytime access to banking services including loans, however this is determined by the customer characteristics because people are willing and ready to embrace technology regardless of their level of education and this is in conformity with the technology acceptance model and innovation diffusion theory by Rodgers.

4.5.3 Availability of infrastructure on the adoption of mobile banking

The third objective for this study wasto investigate the influence of availability of infrastructure on the adoption of mobile banking among customers in Machakos Town.The regression model shows that, availability of infrastructure had highest contribution to the model and that a unit change in availability of infrastructure would lead to a change in the adoption of mobile banking by a factor of 0.682. These results agree with, a study conducted by Aker and Mbiti (2010) to examine the evolution of mobile banking coverage and adoption in sub-Saharan Africa over the past decade found that the first people to adopt mobile phones were primarily male, educated, young, wealthy and the urban populations. This was due to the relative high costs of handsets and services. The study also established that most of the M-pesa transfers are occurring within urban areas. By 2009, mobile phone was owned by even the poor, the elderly and rural populations due to reduction of costs Oluoch et. al(2013)

4.6 Descriptive statistics

4.6.1 Bank factors

Table 4.7: Bank factors

	5	4	3	2	1
Transaction cost	10(6.3%)	78(53%)	10(13.6%)	20(13.8%)	19(12.9%)
Congestion in the banking hall	5(3.4%)	5(3.4%)	79(53.7%)	48(32%)	10(6.3%)
Friendliness of tellers	7(4.8%)	5(3.4%)	50(34%)	50(34%)	35(23.8%)
Queues in the banking hall	7(4.8%)	5(3.4%)	45(30.6)	85(57.8%)	5(3.4%)
Provision of drinking water in the banking hall.	96(65.3%)	51(34.7%)	0(0%)	0(0%)	0(0%)
Distance to the bank	5(3.4%)	7(4.8%)	82(55.8%)	42(28.6%)	11(7.5%)
Creation of awareness by the bank	4(2.7%)	5(3.4%)	54(36.7%)	44(30%)	40(27.2%)
Mean responses	**20(12.6%)**	**23(15.6%)**	**46(31.3%)**	**42(28.6%)**	**16(11.9%)**

The first objective for this study was to establish the influence of bank factors on adoption of M-banking technology among customers in Machakos Town. To achieve this objective the customers who were using the M- banking were requested to indicate the extent to which the following bank related factors (Table 4.7) influence adoption of mobile banking, where 5-Strongly Disagree ,4-Disagree 3-Agree, 2-Strongly Agree, 1-Not Sure. The results indicated that majority (31.3%) and (28.6%) on average agreed and strongly agreed respectively that bank factors which influence adoption of M- banking include; transaction cost, congestion in the banking hall, friendliness of tellers, queues in the banking hall, provision of drinking water in the banking hall, distance to the bank and creation of awareness by the bank. It was also observed that queues in the banking hall had most (57.8%) of the responses followed by distance to bank (55.8%) and congestion in banking hall (53%).

4.6.2 Individual bank customer characteristics

Table 4.8: Individual bank customer characteristics

Individual customer characteristics	**5**	**4**	**3**	**2**	**1**
Resistance to change	7(4.8%)	9(6.1%)	82(55.8%)	30(20.4%)	4(2.7%)
Ability to adopt new innovations	5(3.8%)	23(15.6%)	80(54.4%)	32(21.8%)	7(4.8%)
Place of residence i.e Rural/Urban	4(2.7%)	28(19%)	81(55.1%)	28(19.0%)	6(4.1%)
Peer influence	5(3.8%)	14(9.5%)	85(57.8%)	37(4.8%)	6(4.1%)
Level of education	5(3.8%)	7(4.8%)	91(61.9%)	39(26.5%)	5(3.8%)
Mean responses	**5(3.8%)**	**17(10.9%)**	**85(57.1%)**	**34(22.4%)**	**6(4.1%**

The second objective for this study was to determine the influence of individual bank customer characteristics on adoption of M-banking technology among customers in Machakos Town. To achieve this objective the customers who were using the M-banking were requested to indicate the extent to which the following bank related factors (Table 4.8) influence adoption of mobile banking, where 5-Strongly Disagree ,4-Disagree 3-Agree, 2-Strongly Agree, 1-Not Sure. The results indicated that majority (57.1%) and (22.2%) on average agreed and strongly agreed respectively that the individual characteristics that influence the adoption of M-banking are; resistance to change, ability to adopt new innovations, place of residence, peer influence and level of Education. It was however noted that the level of Education had the greatest influence (61.9%) followed by peer pressure (57.8%)

4.6.3 Availability of infrastructure:

Table 4.9: Availability of infrastructure

Availability of infrastructure	**5**	**4**	**3**	**2**	**1**
Availability of the mobile phone	0(0%)	0(0%)	120(81.6%)	27(18.4)	0(0%)
Complexity of the mobile phone	35(23.8%)	78(53.1%)	15(10.2%)	10(6.8%)	9(6.1%)
Cost of the mobile phone	30(20.4%)	89(60.5%)	15(10.2%)	7(4.8%)	6(4.1%)
Usability of the device	5(3.8%)	6(4.1%)	87(59.2%)	36(24.5%)	13(8.8%)
Network problems	4(2.7%)	11(0%)	76(7.5%)	36(24.5%)	20(13.6%)
Mean responses	**16(10.9%)**	**38(25.9%)**	**60(40.8%)**	**23(15.6%)**	**10(6.8%)**

The third objective for this study was toinvestigate the influence of availability of infrastructure on the adoption of mobile banking among customers in Machakos Town. To achieve this objective the customers who were using the M- banking were requested to indicate the extent to which the following bank related factors (Table 4.9) influence adoption of mobile banking, where 5-Strongly Disagree ,4-Disagree 3-Agree, 2-Strongly Agree, 1-Not Sure. The results indicated that On a scale of 1-5 Indicate the extent to which availability of infrastructure influence the adoption of mobile banking, where 5-Strongly Disagree 4-Disagree 3-Agree 2-Strongly Agree 1-Not Sure. The results in Table 4.9 indicated that majority (40.8%) on average agreed and strongly agreed respectively that the availability of infrastructure that influence the adoption of M-banking are; availability of mobile phones, complexity of mobile phone, cost of mobile phone, usability of the device and network problems. It was however noted that availability of the mobile phone had the greatest influence (81.6%) on M- banking.

CHAPTER FIVE

5.0 DISCUSSION

5.1 Introduction

This chapter discusses the findings of the study as set out in the objective. The objective of this study was to investigate the influence of bank factors, availability of infrastructure and bank customer characteristics on the adoption of mobile banking in Machakos town. To achieve this we aimed at answering three questions. First was to establish the relationship between bank factors and adoption of mobile bank. Second was to determine the influence of individual bank customer characteristics on adoption of mobile banking and third was to investigate the influence of availability of infrastructure on adoption of mobile banking.

5.2 Bank factors

Regarding to the first question, results from the descriptive analysis show that 57.8% of the respondents strongly agree that queues in the banking hall make them adopt mobile banking so that they can avoid them 55.8% agree that distance to the bank force them to adopt mobile banking, this means that they need to increase the accessibility of finance. Other bank related factors include congestion in the banking hall with 53.7% agreeing, creation of awareness by the bank 36.7% agreeing. Transaction cost 53% disagree meaning it is not a barrier to adoption and lastly provision of drinking water in the banking hall having no impact on adoption. On average 31.3% and 28.6% agreed and strongly agreed respectively that banking factors influence adoption of mobile banking. This response reveals that bank factor is a significant factor influencing adoption of mobile banking in Machakos town. This finding is consistent with the finding of Laukkanen (2007) who argued that, with the introduction of M-banking technology by banks, the mobile phone has undeniably brought a paradigm shift, affecting both the lives of people and the business environment. It has permeated the lives of billions of people around the world, becoming for many an indispensable device. Irwin et al (2003) in his study on South Africa consumers, of the four factors which affected mobile banking adoption in his study was customer needs which is also in line with our findings.

5.3 Individual bank customer characteristics

Regarding the second question, the findings indicate that individual bank customer characteristics are positively related to adoption of mobile banking. Descriptive statistics results showed that 61.9% agreed that the level of education affects the decision to adopt mobile banking followed by 57.8% peer influence 55.8% resistance to change, 54.4% ability to adopt new innovations and lastly 55.1% place of residence. On average 57.1% agreed and 22.4% strongly agreed that individual bank customer characteristics influence adoption of mobile banking. This is in line with similar studies done in other countries for example Pakistan. A study by Kazi (2013) on factors affecting adoption of mobile banking in Pakistan revealed that there was a strong public unity among low-income economic sector of Pakistan. The finding from this study highlighted that potential adopters of technology can be influenced by people surrounding them, e.g. friends and family.The result was also consistent with several past studies by Sripalawat et al(2011), Puschel and Mazzon (2010) and Yu(2012).

5.4 Availability of infrastructure

For the third question the findings revealed the availability and usability of the mobile phone is positively related to the adoption of mobile banking. Descriptive statistics showed that 81.6% of the respondents agreed that availability of the mobile phone influences the adoption,59.2% agreed that usability of the mobile phone had an influence on adoption while cost and complexity of the mobile phone shared 10.2% and lastly network problems at 7.5% . On average 40.8% agreed that availability of infrastructure has an impact adoption of m-banking. The findings agree with Aker and Mbiti (2010) findings in a study to examine the evolution of mobile banking coverage and adoption in Sub-Saharan Africa where he found out that those who had adopted mobile banking technology were primarily male, educated, wealthy and urban populations. This was due relatively high costs of the handsets.

CHAPTER SIX

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter discusses the summary of the findings from the study that the researcher was able to collect data and analyse as seen in the previous chapter. The researcher then uses the findings to draw conclusions, and later makes recommendations from the study. The researcher has also given suggestions for further research.

6.2 Summary of the findings

The study established that majority of the banks had adopted mobile banking and that some of their customers were using M- banking for their account operations.An analysis on the association between the bank factors, individual customer characteristics and availability of infrastructure (independent) and Mobile banking adoption(dependent).It was established there was a strong positive correlation between bank factors and adoption of mobile banking with majority of the customers on average agreeing and strongly agreeing that bank factors that is, transaction cost,congestion in the banking hall,friendliness of the bank tellers, queues in the banking hall, distance to the bank, and creation of awareness by the bank, influence adoption of mobile banking by the customers.

The second objective of this study was individual customer characteristics, the study established that there was a strong positive correlation between individual bank customer characteristics and adoption of mobile banking with majority of the customers agreeing and strongly agreeing that individual customer characteristics that is,resistance to change, ability to adopt new innovations, place of residence, peer influence level of education influence the decision to adopt mobile banking by bank customers.

The third objective of the study was availability of infrastructure, the study established that there was a strong positive correlation between availability of infrastructure and adoption of mobile banking with majority of the customers agreeing and strongly agreeing that availability of infrastructure that is, availability of mobile phones, complexity of the mobile phone, cost of the mobile phone, usability of

the device and network problems had an influence on the customers decision to adopt mobile banking.

6.3 Conclusions from the study

The researcher wanted to know whether there was a relationship between adoption of mobile banking and bankfactors. The study found out that there was a strong positive relationship between bank factors and M-banking adoption and therefore banks should sensitise their customers on the advantages of mobile banking .The banks also should invest more on marketing because mobile banking is new and needs more promotion in order to create more awareness.

On the other hand the study also found out that there was also a strong positive relationship between individual characteristicsand adoption of M-banking, the conclusion is that banks should understand their customers and come up with strategies that are aimed at improving the attitude of bank customers towards mobile banking.

The third objective of the study was availability of infrastructure, the study found out that there a strong positive relationship between availability of infrastructure on adoption of mobile banking it is therefore concluded that availability of mobile phones, complexity of mobile phone, cost of mobile phone, usability of the device and network problems have an impact on adoption of mobile banking.

6.4 Recommendationsto policy

In view of the findings from this study, the following recommendations were made:

Majority of the bank customers are aware of mobile banking technology and they donot use it, it shows there is a strong disapproving attitude among the bank customers and therefore there is need to sensitize them on its use.Since majority of the bank customers who have adopted the mobile banking technology have used it for less than five years, it shows the technology is new and it requires promotion.Investigations need to be done to find out why an important service like loan repayment is not being used by the customers.

Since access to financial services is one of the six priority sectors under economic the pillar in the country’s millennium development goals and vision 2030 the government

should use this as an eye-opener and guide to its policy makers in checking how far it has moved and what can be done to have an all-inclusive financial sector.

Firms considering launchingmobile services in Kenya can get meaningful and valuable insights by analyzing the results of the study.

6.5 Suggestions for further research

Based on the findings and conclusions made in this study, there are issues that need further research. First,research needs to be done to establish why bank customers are aware of mobile banking but they do not want to use it. Secondly, there is need to find out why some bank customers have adopted mobile banking and are still very present in the banking halls. Third, research needs to be done on other factors that affect the decision to adopt mobile banking other than the ones discussed in this study. Fourth, the study restricted itself to only three banks, there is need to carry out study in the other banks and also SACCOS. Fifth, the study restricted itself to the banked population, there is also unbanked population that enjoys financial services without having an account with a bank.

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APPENDICES

APPENDIX I: TRANSMITTAL LETTER

Martha Mutindi Kimeu,
South Eastern Kenya University
P.O.Box 170.
Kitui.

P.O.Box 30197, Nairobi

Date: 10/06/2015

Dear sir/madam,

RE: REQUEST TO FILL QUESTIONNAIRES

I am a post graduate student pursuing a degree of master of business administration in South Eastern Kenya University.I am conducting research on factors influencing the adoption of mobile banking technology among bank customers in Machakos town, Kenya. I do request you to assist me by filling the provided questionnaires. Your confidentiality will be maintained.

Thanks in advance.

Martha Mutindi.

APPENDIX II: STRUCTURED QUESTIONNAIRE

Your honest feedback is of highest importance in the course of my academic research. This information will beused for the purpose of this research only and not for any other purpose.

SECTION A

1. Gender Male ☐ Female ☐
2. How long have you operated the bank account?

   Less than a year ☐

   Between 1 year and 3 years ☐

   Between 3 years and 5 years ☐

   Between 5 years and 10 years ☐

   Between 10 years and 20 years ☐

   Above 20 years ☐

3. How long does it take you to access the nearest financial services provider?

   Less than 30 minute ☐

   Less than 1 hour ☐

   Less than 2 hour ☐

   More than 2 hour ☐

4. Do you have a mobile phone?

   Yes ☐

   No ☐

   Note: Mobile banking refers to transacting on your bank account using a mobile phone or personal digital assistant. (PDA).

5. Are you aware of the existence of mobile banking (M-banking)?

   Yes ☐ No ☐

6. Do you use M-banking.

   Yes ☐ No ☐

7. If No Please give reasons _____

SECTION B

To be filled by those who use M-banking

1. Which of the following M-banking services do you use? (Tick where applicable)

   Check account balance ☐ Transfer money ☐

   Pay bills e.g. electricity bill ☐ Mobile phone top-up ☐

   Cash deposit ☐ Cash withdrawal ☐

   Others specify_____

   _____

   _____

2. How long have you been using mobile banking technology?

   Less than 1 year ☐ More than 2 years ☐

   Less than two years ☐

3. On a scale of 1-5 , rate how often you use the following M- banking services

   Don't use 1,Very rare 2, Rarely 3, Frequent, 4 and Very frequent 5

	M-banking services	**5**	**4**	**3**	**2**	**1**
i.	Cash deposit					
ii.	Cash withdrawal					
iii.	Money transfer					
iv.	Loan payment					
v.	Bills payment (e.g. electricity)					
vi.	Mobile top up					
vii.	Balance enquiry					
viii.	Ministatement					

4. On a scale of 1-5 Indicate the extent to which the following bank related factors influence adoption of mobile banking, where 5-Strongly Disagree, 4-Disagree 3- Agree, 2-Strongly Agree, 1-Not Sure

	Bank factors	**5**	**4**	**3**	**2**	**1**
i.	Transaction cost					
ii.	Congestion in the banking hall					
iii.	Friendliness of tellers					
iv.	Distance to the bank					
v.	Creation of awareness by the bank					

5. On a scale of 1-5 indicate the extent to which individual customer characteristics influence adoption of mobile banking, where 5-Strongly Disagree 4-Disagree 3-Agree 2-Strongly Agree 1- Not Sure

	Individual customer characteristics	**5**	**4**	**3**	**2**	**1**
i.	Resistance to change					
ii.	Ability to adopt new innovations					
iii.	Place of residence i.e. Rural/Urban					
iv.	Peer influence					
v.	Level of education					

6. On a scale of 1-5 Indicate the extent to which availability of infrastructure influence the adoption of mobile banking, where 5- Strongly Disagree 4-Disagree 3-Agree 2-Strongly Agree 1-Not Sure.

	Availability of infrastructure	**5**	**4**	**3**	**2**	**1**
i.	Availability of the mobile phone					
ii.	Complexity of the mobile phone					
iii.	Cost of the mobile phone					
iv.	Usability of the device					
v.	Network problems					

7. On a scale of 1-5 Indicate the extent to which the following factors affect the adoption ofmobile banking,where; 5-Strongly Disagree 4- Disagree 3- Agree 2- Strongly Agree 1- Not Sure.

	Construct	**5**	**4**	**3**	**2**	**1**
i.	Banks facilitating factors					
ii.	Individual customer characteristics					
iii.	Availability of infrastructure					

8. i) Have you ever encountered any problem while using M-banking technology?

   Yes ☐ No ☐

   ii) If yes in eight (8) above please state the problem_____

   _____

   _____

9. What are the reasons that may make you go to the bank despite having adopted mobile banking?_____

   _____

   _____

Thank you for sparing your precious time

(Student researcher)

APPENDIX III: LIST OF BANK BRANCHES IN MACHAKOS TOWN AND THEIR CUSTOMER BASE AS AT JANUARY 2016

MINISTRY OF TRADE

MACHAKOS OFFICE

1. KCB Bank…… 22,800
2. Equity Bank…….. 50,000
3. Cooperative Bank…….....44,000
4. Standard Chartered Bank……...…..30,800
5. Barclays……..40,700
6. Family Bank……. 28,000
7. Spire Bank……. 16,000
8. Jamii Bora Bank…… 18,000
9. Chase Bank…….. 10,000
10. Sidian Bank……. 25,000
11. Credit Bank……. 10,000
12. National Bank…… 27,000
13. NIC Bank…….. 15,000
14. Post Bank Kenya…….....43,000

COUNTY TRADE DEVELOPMENT
OFFICER
P O Box 345-90100
MACHAKOS

APPENDIX IV: PUBLICATION