MOBILE BANKING AS A STRATEGIC MEANS OF FINANCIAL INCLUSION IN KENYA

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DECLARATION

I hereby declare that this project is my own work and effort and that it has not been submitted anywhere for any award.

Signature: é é é é é é é é é é é é é Date: é é é é é é é

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DEDICATION

For my loving family

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I am heavily indebted to various people and organization that provided material and non-material support for this study to succeed. I take this opportunity to express my sincere thanks and gratitude to each of these people and organizations. Foremost I thank the Almighty God for giving me life and the energy that took me through this study process.

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CONTENTS

ABBREVIATIONS AND ACRONYMS

C-TAM-TPB	-	Combining the Technology Acceptance Model and the Theory of Planned Behavior
DOI	-	Diffusion of Innovation
ICT	-	Information and Communication Technology
ID	-	Innovation Diffusion Theory
IT	-	Information Technology
MFI	-	Micro Finance Institutions
MM	-	Motivational Model
POEU	-	Perception of its Ease of Use
PU	-	Perceived Usefulness
ROSCAs	-	Rotating Savings and Credit Associations
SCT	-	Socio Cognitive Theory
SMEs	-	Small and Medium Enterprises
TAM	-	Technology Acceptance Model
TPB	-	Theory of Planned Behavior
TRA	-	Theory of Reasoned Action
UTAUT	-	Unified Theory of Acceptance and Use of Technology

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ABSTRACT

Financial inclusion is an important priority in the development programs of Kenya and other countries across the world due to its ability to ensure all bankable citizens in a country get to participate in main financial drive towards the economic development of the countries from the financial perspective. This study was, therefore, designed with the objective of establishing effectiveness of mobile banking as a strategy of financial inclusion in Kenya. The specific objectives were: to determine the effect of mobile banking strategy on the access to financial services; to establish how mobile banking strategy contributes to the usage of financial services and to establish how mobile banking strategy contributes to the quality of financial services. This study was a survey that focused on the 30 commercial banks in Kenya that had adopted mobile banking. The primary data used for the study was collected by a self-administered questionnaire. the data were analyzed using mean and standard deviation. The findings indicate that mobile telephony has improved the access to commercial banking financial services by customers. This is seen through improved awareness of all the products they can access by mobile devices; increased frequency of access to accounts, the twenty-four-hour access to accounts, the cheapness of the use of mobile banking and the increase in the number of clients with informal accounts managed through mobile devices. The use of mobile devices has improved usage of financial services provided by commercial banks. For instance, most clients now check their financial statements using mobile devices; the use of mobile banking is more preferred to traditional banking; the variety of banking services provided through mobile banking has widened. Now most banking services can be accessed by mobile banking. Mobile baking has improved the quality of services provided by commercial banks. This is seen through improved willingness and readiness of employees to provide services in an effective manner. It is also seen through the high levels of customersô awareness of the banking services available to them through mobile banking. Customers are increasingly trusting the use of mobile banking to conduct transactions and banks now better understand the needs of the customers. The study recommends that the use of mobile banking should be widened in intensity of use to enable customers to have more freedom and frequency in accessing the services provided by commercial banks through mobile banking. There should be widening of the segments

of the clients that have access to financial services and the percentage of customers using mobile banking vis-à-vis traditional banking. Using mobile banking for lending and the frequency of accessing financial services should be strengthened. The quality of services provided through mobile banking can still be improved. Access to banking information using mobile devices has to be improved to make customers satisfied with the banking services that get through mobile banking.

CHAPTER ONE
INTRODUCTION

1.1. Background of Study

Policy makers across the globe have been embracing the idea of financial inclusion as an important priority in their development programs. The twenty most developed nations in the world made financial inclusion on of the main pillars of their cooperation. By the end of 2013, more than 50 countries had their national policy-making and regulatory bodies publicly committing to financial inclusion strategies for their countries. This is because access to basic transaction services is viewed as an important milestone towards financial inclusion where everyone has access and can easily use the available financial services capture arising opportunities (World Bank 2013).

The conviction of policy makers is that financial inclusion can help poor households improve their lives and stimulate economic growth. Though each country follows its own strategy to achieve financial inclusion, the strategies require contribution from the private, public, and social sectors to succeed. Private businesses contribute by innovating business models that deliver quality and value to consumers without basing on penalty-based revenues. Governments contribute by establishing the appropriate regulations and oversight in order to ensure that consumers are well protected without stifling freedom to creation of a wide range of service provision at sustainably low costs. The social-sector institutions contribute by generating ideas, talent, and seed funding. They use their convening power to create effective partnerships; and to provide services to the most remote consumers (Mertz, 2010).

The success of the different strategies that different countries use towards financial inclusion varies according to the needs of the targeted population. In the Philippines, nearly 90 percent of the people store money at home, with a friend, or in a village savings club. Some of the people invest their money in the purchase of assets such as cows or chickens to store the value of the money. The savings kept by almost two thirds of the Philipinos are typically used for managing cash flow instead of long-term asset accumulation. A paltry 13 percent of the unbanked borrow. Of those who borrow, about

half of them borrow from family or friends, about 13 percent from moneylenders while only 17 percent borrow from MFIs (Mertz, 2010).

In India the strategy of financial inclusion is different. The main strategies include: nationalization of banks; building up of robust branch networks of commercial banks, co-operatives and regional rural banks; introduction of mandated priority sector lending targets; lead bank schemes and formation of self-help groups. Other measures include permitting business correspondents to be appointed by banks to provide door step banking services; encouraging zero balance basic saving bank deposit accounts, etc. The goal of these efforts is reaching the large sections of the financially excluded Indian population. Only about 20 percent of the unbanked population in India has access to credit. However, two thirds of the borrowing is done through moneylenders (Bhaskar, 2013).

According to Triki and Faye (2013), less than a quarter of adults in Africa have an account with a formal financial institution. Many adults use informal methods to save. Such methods include Rotating Savings and Credit Associations (ROSCAs) and burial societies. They also borrow from friends, family, and informal private lenders. Firms in Africa also experience more hardship when seeking access to bank credit as compared to firms in the developed economies. The lack of access to funding is more acute for Small and Medium Enterprises (SMEs) and individuals.

Omwansa and Waema (2014) note that in Kenya access to formal financial services has grown more in the urban than in the rural areas. Between 2006 and 2009, those accessible to formal banking services rose from 31% to 40.3%, in rural areas it increased only from 14.9% to 17.6%. However, the level of financial inclusion is still low. The lack of proper financial products for the poor households explains the financial exclusion. The formal sector has managed only 43 banks with a total of about 1000 branches which have not yielded much in bringing the unbankable population into financial inclusion. Newer and innovative models of providing financial services such as mobile banking have outpaced the conventional financial sector both in subscriber base and geographical reach. However, it remains to be revealed whether the successes in subscription to the mobile

banking and the width in geographical coverage have led to increased access to financial services, improved quality of financial services and increased usage of financial services.

1.1.1. Concept of Strategy

Johnson and Scholes (2008) describe strategy as the direction and scope of an organization or an industry over the long term, which achieves advantage in a changing environment through its configuration of resources and competences with the aim of fulfilling stakeholder expectations. Strategy can also be seen as the matching of resources and activities of an organization to the environment in which it operates according to Johnson and Scholes (2002). Organization Strategy enables an organization differentiate itself as compared to its competitors. At industry level, strategy should help achieve industrial competitiveness.

1.1.2. Financial Inclusion

The World Bank (2014) defines financial inclusion as an economic state in which individuals and firms are not in any way denied access to basic financial services basing on motivations other than the criteria of financial efficiency. A definition provided by Hannig and Jansen (2010) views financial inclusion as the drawing the unbanked population into the formal financial system to enable them have the opportunity to access financial services. Khan (2011) seems to follow the definition of Hannig and Jansen (2010) when he defines financial inclusion as the process of ensuring that vulnerable groups such as weaker sections and low income groups have access to timely and adequate financial services at an affordable cost. The three definitions above simply indicate the financial inclusion is about indiscriminate access to finance by all who need it.

The World Bank (2014) identifies two dimensions of financial exclusion that have to be managed to attain maximum financial inclusion. The dimensions are: voluntary and involuntary. The voluntary dimension has two categories, namely, those who do not need financial services and those who are limited by cultural and religious boundaries. In the involuntary dimension there are those who have insufficient income and therefore

considered high risk and those eliminated by the financial system due to qualifications like lack of information, weak contract enforcement, financial product features, price barriers and market imperfections.

Financial inclusion is a financial matter that must be effectively addressed by any financial systems for two key reasons. First, financial inclusion has a stronger impact on long-term economic growth, poverty reduction and the macroeconomic environment in general. Secondly, financial inclusion enhances monetary and financial stability in an economy. This is through changing the behavior of firms and consumers who in turn influence the efficacy of monetary policy (Burgess and Pande, 2005). Therefore, failure to manage the various dimensions of financial inclusions destabilizes the financial system and hampers sustainable economic growth.

As of December 31, 2011, the reported number of active M-PESA customers had topped 15.2 million. By 2013, out of Safaricom 17 million subscribers, 15.2 million (90 percent) were registered for M-PESA, which was 63 percent of the adult population in Kenya (Buku and Meredith, 2013). According to Fin Access National Survey 2013 report the proportion of the adult population that use different forms of formal financial services has risen to 66.7 percent in 2013 compared to 27.4 percent in 2006. Similarly, the proportion of the financially excluded adult population has declined to 25.4 percent in 2013 from 39.3 percent in 2006. These numbers reflect the outstanding success of mobile banking as a mechanism of financial inclusion.

1.1.2 Mobile Banking

The term mobile banking denotes the access to banking services and facilities offered by financial institutions by use of a mobile device (Njenga, 2010). Such services and facilities include savings, payment transactions and other financial products. With improvement in information and communication technology (ICT) mobile telephony is increasingly providing many solutions to banking clients in addition to the efficient transactional environment.

Mobile banking is a financial revolution. Njenga (2010) argues that it is a revolution that has the capacity of phasing out the traditional stone-and- mortar banks. This is because

customers are increasingly opting to use phones to access financial services. Further, the banks themselves are opting to use mobile technology to widen their market outreach instead of erecting or hiring buildings to be used as banking halls. This occurrence is buoyed by mole phones becoming part of the basic daily lives of phone users.

Mobile banking is outpacing traditional banking with regard to financial inclusion. Before the advent of mobile banking, the rate at which banks penetrated the unbanked market was very slow. However, the ease with which accounts are opened by mobile technology and the accessibility this has brought to bank accounts has hastened the rate of market penetration as opposed the slow rate at which the traditional banking approaches the market (Gupta, 2013). According to Mutua (2010) the amount of money transacted through the mobile money transfers increased steadily from only 0.06 billion in 2007 on its launch to 118.08 billion by 2012. Okiro and Ndung'u (2013) found that the currently mobile money market size is about 15 million users transferring Kshs. 2 billion daily. This indicates a tremendous rise in mobile banking in Kenya.

1.1.3 Mobile Banking in Kenya

Kenya has had its own experience with mole banking. Mobile banking has reached levels that were unimaginable just a few decades ago. This has resulted from the increased use of mobile phones in Kenya. Mbiti and Weil (2011) argue that the leading mobile banking model in Kenya, namely M-Pesa, grew at a blistering pace since its inception in 2007. The growth is following the expanded use of mobile phones in communication.

The use of mobile banking has expanded to these levels due to the simplicity, security, cheapness and the ease with which financial services are sought and provided. The widespread cellular communication and the ability to transfer money instantly, securely, and inexpensively together provide a strong impetus to enormous changes in the organization of economic activity, family relations, and risk management and mitigation. Morawcyznski and Pickens (2009) argue that the ability to remit smaller but more frequent remittances easily, to a wide area and at low cost has popularized mobile banking in Kenya.

This popularity has influenced change in business models of all financial institutions since most of them have included the use mobile banking in their business models. The mobile telephony infrastructure laid down by mobile communication companies such as Safaricom, Airtel and Orange (Telkom Kenya) have become vehicles of financial services nationally, regionally and intentionally. As the users of mobile phones grow, so is it expected that users of the phone to access financial services and product will grow (Suri and Jack, 2011).

1.2. Research Problem

Financial inclusion is believed by scholars like Mitton (2008) to be a strong driver of poverty reduction and economic growth. This is because financially weak and those excluded from the formal financial policy get financially stimulated to participate in economic growth and self-emancipation.

The vast majority in Kenya lives in poverty and is typically excluded from the wage earning employment opportunities that traditional economic theory presupposes. This requires that Kenyans themselves come up with innovative approaches to income generation. This will happen if the Kenyans living in poverty have access to financial products and services that bring them into main pipe finance (Banerjee *et al*, 2010). If they continue to be left out, then poverty, poor economic growth and underdevelopment are highly likely to persist.

Mbiti and Weil (2011) demonstrate how Kenyans have embraced mobile technology as evidenced by the rise of Safaricom as the giant mobile services provider in the East African region. In line with the wide spread of mobile phones financial institutions are increasingly resorting to the use of mobile banking as a strategy towards financial inclusion. They are designing financial products that increasingly apply mobile technology. However, if the strategy is not well applied, financial inclusion will remain a persistent problem that will leave Kenya an underdeveloped country with many poor citizens. This study was designed to establish whether the use of mobile banking strategy is an effective strategy for enhancing financial inclusion in Kenya.

1.3. Research Objectives

General Objective

To assess the effectiveness of mobile banking as a strategy of financial inclusion in Kenya.

Specific Objectives

This study had the following specific objectives:

i. To determine the effect of mobile banking strategy on the access to financial services in Kenya.
ii. To establish how mobile banking strategy contributes to the usage of financial services in Kenya.
iii. To establish how mobile banking strategy contributes to the quality of financial services in Kenya.

1.4. Value of the Study

To the scholars and researchers, this study will provide a basis for future research concerning the use of mobile banking as a strategy that can help enhance financial inclusion in any economy. The study will contribute to the body of empirical literature on how mobile banking is realigning finance across the globe. Scholars will then find the contents and findings of this research necessary in furthering related research.

To financial institutions the study will provided useful insights into how to utilize mobile banking in enhancing financial inclusion. Given their role as drivers of economic growth and reduction of poverty, financial institutions have to tap into the financial capacities of the members of the society while empowering them to higher standards of life. Phones provide a mechanism of the interconnections. Basing on this interconnectedness through mobile technology financial institutions will use the findings of this study to determine how to effectively use the mobile technology to drive profit and drive economic growth.

To the policy makers in the government and financial institutions this study will provide a deeper understanding of how mobile technology is changing the financial market. The

study will assess how effective the mobile technology is helping to achieve financial inclusion. If the study finds mobile banking to be a strong strategy toward financial inclusion, policy makers and financial institutions will then moot strategies that will embed mobile banking in the financial sector for the sake of economic growth and poverty reduction.

CHAPTER TWO
LITERATURE REVIEW

2.1. Introduction

In this section, the focus in on the theoretical and empirical literature guiding this study. Section 2.2 discusses the theories that form the basis of this research. These theories are Information Technology Acceptance Theory, Diffusion of Innovations Theory and Field Theory of Change. It also presents the Mobile Banking Business Models in sub-section 2.24. Section 2.3 discusses past research findings regarding use of mobile banking in financial inclusion.

2.2. Theoretical Foundation of the Study

This research was guided by the Information Technology Acceptance theory. The theory is discussed below. Mobile banking models are also discussed.

2.2.1. Information Technology Acceptance Theory

The central focus of Information Technology (IT) Acceptance theory is to understand individual intention and predict usersô behaviour toward new Information Technology artefacts and new technology innovations. To understand the IT acceptance theory one has to understand several other acceptance theories like as Technology Acceptance Model (TAM) by Davis (1989), Diffusion of Innovation (DOI) by Rogers (1995), Unified Theory of Acceptance and Use of Technology (UTAUT) discussed by Venkatesh et al. (2003).

TAM tries to predict individualsô intentions toward using a technology based on their Perception of its Ease of Use (POEU) and Perceived Usefulness (PU). TAM proposes two positions. First, a person accepts technology basing whether they believe the technology is useful perceived usefulness. Secondly, a person accepts technology basing on how the technology seems easy to use by the person regarding the purpose for which they what the technology. TAM, therefore, argues that the actual use of a technology system depends directly or indirectly on the userôs behavioral intentions, attitude,

perceived usefulness of the system, and perceived ease of the system. TAM also proposes that external factors such as social influence, cognitive instrumental processes and experience. Social influence has to do with subjective norm, voluntariness, and image. cognitive instrumental processes have to do with job relevance, output quality, and result demonstrability (Davis, 1989).

According to Diffusion of Innovation (DOI) theory, each member of the society faces individual innovation decision that follows a 5-step process: knowledge, persuasion, decision, implementation and confirmation. In the knowledge step, a person becomes aware of innovation and gets ideas of how it functions. In the persuasion step, the person forms either a favorable or unfavorable attitude toward the innovation. In the decision the person gets engaged in actions that lead to making choice on whether to adopt or reject the innovation. The implementation involves the person putting the adopted innovation into use. Finall comes the confirmation stage which involves the evaluation of whether the decision to adopt the innovation was worthwhile or not (Rogers, 1995).

The DOI theory suggets that people will adopt an innovation if they believe that it will enhance their utility. They mus believe that the technology will have some advantage concering why it is created. These benefits could in form of consideration of costs and the expected change in the functioning of their daily lives. They will also consider compatibility with their habits and values (Rogers, 1995).

The UTAUT is a unified model that was developed by Vankatesh et al (2003) based on social cognitive theory with a combination of eight other prominent information technology (IT) acceptance research models. The eight models are; The Theory of reasoned action (TRA), The Theory of Planned Behavior (TPB), The technology acceptance model (TAM), The motivational model (MM), combining the technology acceptance model and the theory of planned behavior (C-TAM-TPB) ,The model of PC Utilization (MPCU), The innovation diffusion theory (IDT) and Socio Cognitive Theory (SCT) (Taiwo and Downe, 2013).

The UTAUT model was found to be a better predictor of the behavior of individuals to new innovation as compared to each of the eight composite models individually. The UTAUT model uses four core determinants of usage and intention. These core

determinants are performance expectancy, effort expectancy, social influence, and facilitating conditions. It also uses four moederating variables such as gender, age, experience and voluntariness of use. These variables explain over 70 percent of the variation of the behavior of individuals regarding new innovation.

The Information Technology Acceptance Theory is a key theory of this research. From the theory, M-Banking will become a serious channel of banking strategy if individuals to be served get knowledge of it and are persuaded that it is good. Further, the M-Banking should be evaluated as good when adopted by the users. To make M-Banking a driver of strategy, commercial banks have to make it appealing with regard to expected performance, effort, social influence, and facilitating conditions. It must also be made suitable with regard to gender, age, experience and voluntariness of use.

2.2.2. Diffusion of Innovations Theory

This theory of technology was put forth by Rogers (2003). In the theory, a technology is simply a design for instrumental action that reduces the uncertainty in the cause-effect relationships involved in achieving a desired outcome. The theory of innovations has four key elements. These are: innovation, communication channels, time and social system.

According to Rogers (2003) an innovation is an idea, practice, or project that is perceived as new by an individual or other unit of adoption irrespective of when it was invented. Communication is a process through which participants create and share information with one another to reach a mutual understanding. Communication occurs through channels between sources. A channel is the means by which a message gets from the generator of the message to the receiver. In interpersonal channels, the communication may have a characteristic of homophily or heterophily. In homophily, the focus is on the degree to which two or more individuals who interact are similar in certain attributes, such as beliefs, education, socioeconomic status, and the like. Heterophily refers to the degree to which two or more individuals who interact are different in certain attributes. For innovation to diffuse there must be heterophily.

Time is another element in the theory of diffusion by Rogers (2003). The innovation-diffusion process, adopter categorization, and rate of adoptions have a time dimension.

The last element in the diffusion model is the social system. The social system refers to the set of interrelated units engaged in joint problem solving to accomplish a common goal.

Thee innovation diffusion process takes place in five stages: the knowledge stage, the persuasion stage, the decision stage, the implementation stage and the confirmation stage. In the knowledge stage an individual learns about the existence of innovation and seeks information about the innovation. Awareness knowledge involves a person knowing an innovation exists. How-to-knowledge involves how to use an innovation correctly while the principles knowledge involves knowing functioning principles describing how and why an innovation works (Rogers, 2003).

In the persuasion stage, the individual form a negative or positive attitude toward the innovation. At this stage the formation of the attitude does not always lead directly or indirectly to an adoption or rejection of the innovation. This stage is more affective. In the decision stage the individual chooses to adopt or reject the innovation. The implementation stage involves putting an innovation into practice but with some degree of uncertainty about the outcomes of the innovation. Some technical assistance is needed in this stage. In the confirmation stage, the individual looks for support for his or her decision (Rogers, 2003).

This theory is importance to this research since spells out the manner in which new innovations spread. An innovation will, therefore, spread if people get to know about it, are persuaded that it is good, if they decide to adopt and implement it and if others confirm it as a good choice. A failure at any stage will hinder the spread of the innovation.

2.2.3. Field Theory of Change

This theory was proposed by Lewin (1951). In Lewin's view behavior as a dynamic balance of forces working in opposing directions. Driving forces facilitate change because they push employees in the desired direction while restraining forces hinder change because they push employees in the opposite direction. In this theory, change occurs in three stages: unfreezing stage, movement stage and the refreezing stage.

The status quo is considered the equilibrium state. This status must be unfrozen to enable overcoming of the strains of individual resistance and group conformity. To unfreeze it is necessary to increase the driving forces push behavior away from the status quo. It is also necessary to decrease the restraining forces that will frustrate movement from the status quo. Unfreezing can be achieved by motivating towards change, building trust, showing the need to change, and actively participating in recognizing problems and brainstorming solutions within a group.

After unfreezing, steps are taken to bring in desired change. This is done with the aim of moving the system to a new equilibrium. This stage calls for persuading the group to agree that the status quo is not beneficial to them and making them to view the problem from a fresh perspective. It involves working together in search for new, relevant information, and connecting the views of the group to well-respected, powerful leaders that also support the change.

The third step and final stage in the theory is the refreezing stage. This step takes place after change has been implemented. It is done in order for it to be sustained. If refreezing is not done, the change will be short lived and the employees will revert to their old equilibrium.

This theory seems to explain how banks take steps to proactively change the behavior of their clients so that the clients accept innovation. The banks unfreeze the status quo by showing the weakness in the system and showing why there is need for doing things in a different way. The banks then introduce the innovation and convince the clients of how the new system is better than the old. They let clients brainstorm on the challenges arising from the new system. As the clients warm up to the new innovation, the banks roll out the innovation while phasing out the older method of doing things. Eventually, the new system is put in place and the older one ended.

2.2.4. Mobile Banking Business Models

Mwaura (2009) discusses three mobile banking business models. These business models are bank-focused model, bank-led model and non-bank-led model. In the bank-focused model, a traditional bank employs non-traditional low-cost delivery channels to provide

banking services to its current customers. This model is a simple additive to the conventional branch-based banking.

In the bank-led model distinctly different services are offered to customers. This banking model offers an alternative to conventional branch-based banking. The customer conducts financial transactions through a whole range of retail agents or through mobile telephony as opposed to conducting the transactions at bank branches or through bank employees. In the non-bank-led model, banks are not part of the transaction model except as safe-keepers of surplus funds.

2.3. Empirical Review Influence of Technology on Strategy

A study by Dauda (2013) explored the influence of technological environmental factors on strategic choice of quoted manufacturing firms in Nigeria's food and beverage industry. The study examined the relationship between technological factors and strategy in these organizations. The research was a survey of six firms and 159 management staff that provided qualitative data through the Likert scale. The study utilized simple regression technique to analyze the data. The findings indicated that technological environmental factors stimulated the quoted manufacturing firms to adopt multi-product marketing strategies. The study went further to recommend that managers in Nigerian food and beverages industry pay particular attention to technological dynamics. Particular focus on technological invention, advancement, availability and diversity should be factored in their operations. This study suggests that technology is important in charting out a company's strategy.

In another study Bellamy (2010) explored how the perceptions of new technology implementation and planning processes, and dimensions of organizational climate have on the effectiveness of the deployment of new technology. It also examined the extent to which dimensions of organizational climate moderates the relationships in new technology implementation, planning, and new technology deployment effectiveness. The survey was done on 100 employees in 6 different types of organizations that had recently installed new technology. The results indicated that perceptions of new technology implementation and planning processes, and dimensions of organizational

climate do indeed influence how effective new technology is deployed. The study suggested that new technology has an influence on strategy. From the two studies, it can be deduced that while technology influences strategy, strategy also influences the deployment of the technology.

Chatain, et al. (2008) conducted a study to establish the integrity in mobile phone financial services with the goal of finding out measures that could be taken to mitigate the risks from money laundering and terrorist financing. The study established that mobile phones hold great potential of turning into a common way of conducting financial transactions globally. The study estimated that billions of people around the world use mobile phones as a communication tool. The mobile phones were even accessible to the low income and remote populations. For about three billion people who do not hold bank accounts, mobile telephony offers an effective alternative. This study indicates that increase in the use of mobile phone use enables access to banking services.

The findings were supported by those of Burhouse (2014) who found that using M-Banking improved access to mobile financial services. When standing alone, Mobile Financial Services appeared not to motivate and facilitate access to those who are unbanked. However, when attached to mainstream banks, improved use of smartphones leads to increased mobile account opening increasing access to the mainstream banking system. As the obstacles of usage of smartphones in financial services are overcome through financial and technological innovation, access to financial services improves. This research also showed that increased access to mobile phones and improved financial and technological innovation increase access to financial services in the United States.

A study conducted by Muisyo, Alala and Musiega (2014) conducted a survey study whose main purpose was to find assess the effect of Mobile Money Services on the performance of the banking institutions in Kakamega town. It focused on how various mobile money services transactionsô impact on the performance of banking institutions. The study also sought to establish the effect of accessibility to mobile money services on the performance of banking institutions. A sample of 115 respondents from 13 financial institutions in Kakamega town was used. Through this study it is inferred that increased use of mobile phones has increased the usage of financial services. Due to mobile phones,

banks are able to provide many types of financial services and therefore increasing the usage of the mobile banking innovations.

Arestoff and Venet (2013) conducted another study in Madagascar to investigate the financial behavior of customers in the mobile banking context. The study was survey on 598 randomly selected Orange clients in Antananarivo. They used the matching methodology to assess the impacts of m-banking on clients' financial behavior. The results showed that the use of m-banking services increased the number of national remittances sent and received indicating higher activity. However, they found that m-banking services had no significant impact on the sums saved. These findings indicate that the usage of m-banking technology will be determined by the needs to the needs of the customers vis-à-vis the innovation available.

A study by Jepleting, Sangoro and Bureti (2013) sought to find out how mobile banking contributed to customer satisfaction at Equity bank in Eldoret town. The study was a descriptive research using a sample size of 213 respondents who were selected through stratified and purposive sampling a population of 2,130 employees, bank customers and agents. Self-administered questionnaires and interview schedules were used to obtain information from the respondents. The analysis of the data revealed that close to all those using mobile banking services at the moment were satisfied with the efficient and reliable services provided to them. On the contrary, those not using mobile banking doubted it citing the security and reliability of the mobile banking system. The study showed that quality of services to customers could be improved with regard to some aspect such as the ease of access to accounts while worsening other aspects like the security of the accounts.

Lin and Shih (2013) conducted a study which aimed at promoting the use of mobile transaction services. They also summarized 13 service items affecting mobile banking transactions, functional programs, and accessibility programs. The study designed questionnaire using the Analytic Network Process. The study used three experts from the finance industry and academia to compute the weights and find out the optimum program accordingly. The suggestions from the findings were proposed for functional programs that could be provided to the banking industry. One of the key aspects of the

recommended programs was service quality enhancement. This showed that an innovation in financing could reach more people if it had the capacity to provide high quality services.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1. Introduction

This chapter presents the methodology that the researcher used to conduct the research. Section 3.2 presents the research design. Section 3.3 describes the target population and the sample. Section 3.4 focuses on data collection methods while 3.5 discusses the data analysis methods.

3.2. Research Design

This study used a survey design. McClosky (1969) defined a survey as any procedure involving systematic collection of data from a population or a sample from a population using some form or through direct solicitation like face-to-face interviews, telephone interviews or mail questionnaires. A survey research is also a method of descriptive research based on primary data collected using verbal or written communication with a representative sample of individuals or respondents from the target population.

In a survey data is collected in a consistent way. It aims at documenting the existing conditions in a population. Kish (1988) provides six primary purposes of surveys. A survey aims at calculation of diverse statistics; characterization of the diverse statistics; collection of multiple variables; multi-subject surveys; continuation of survey operations; and master frames. All these are generally focused on describing the population as accurately as possible regarding features of interest.

This research design is applicable for this study since the researcher aimed to use a sample to define the situation as it is in banks regarding mobile banking. The study collected primary data by use of a self-administered questionnaire. The study, therefore, fitted the description of a survey.

3.3. Target Population

Target population is depicted as the whole set of the study of all the members of both real or hypothetical be they people, events or subjects to which the investigator desires to

generate the result from (Mugenda and Mugenda, 2003). The target population of this study was all the strategy managers of the 30 commercial banks using mobile banking in Kenya (see Appendix I). Since all the 30 strategy managers were expected to respond to the questionnaires in this research, the study was a census.

3.4. Data Collection

The researcher used a questionnaire for collecting information from the strategy managers of the 30 banks using mobile banking in Kenya. The required qualitative data was collected by means of the questionnaire. Since all the 30 banks have their headquarters in Nairobi City, the researcher was able to hand the questionnaire to each of the strategy manager in person and collect the completed questionnaires. The data collected was coded in MS Excel software.

3.5. Data Analysis

Statistical analysis was done using descriptive statistics such as the mean and standard deviation. The mean, for instance, was used to find the average response of a respondent concerning a given item determining the effectiveness of the administration. The standard deviation was used to measure the variability in responses to an item. Bar graphs were the main charts use in the description of the distribution of respondent banks.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1 Introduction

This section presents the analysis and the findings of this study. 4.2 presents the summary statistics. 4.3 presents findings regarding access to financial services. 4.4 presents findings on usage of financial services while 4.5 focuses on quality of financial services. 4.6 is the interpretation of the findings of this study in comparison with findings of other similar studies.

4.2 Summary Statistics

This study targeted the 30 commercial banks that have embraced mobile banking in Kenya. However, 27 questionnaires were received back and used for analysis. This makes a response rate of 90 percent. The findings are therefore representative of the 30 banks that made up the target population of this study.

Figure 4.1 shows the distribution of the banks regarding their size. Size was estimated by the size of the labour force. As shown in the figure 52 percent of the commercial banks had less than 150 workers. 30 percent had between 150 and 350 workers while 19 percent had over 350 workers. This indicates the variation on responses regarding labour force of commercial banks is captured.

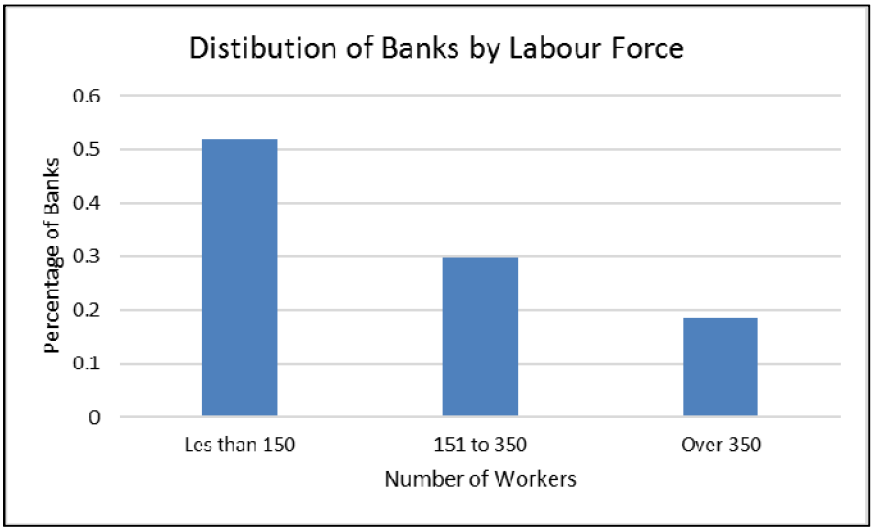

Figure 4.1: Distribution of Commercial Banks by Labour Force

Figure 4.2 presents the summary of the commercial banks according to the number of branches they have. 33 percent of the banks had less than 15 branches. 48 percent had between 15 and 30 branches while 19 percent had over 30 branches. The data used in this study cove the variation of the banks regarding how the bank is spread in the country as indicated by number of branches.

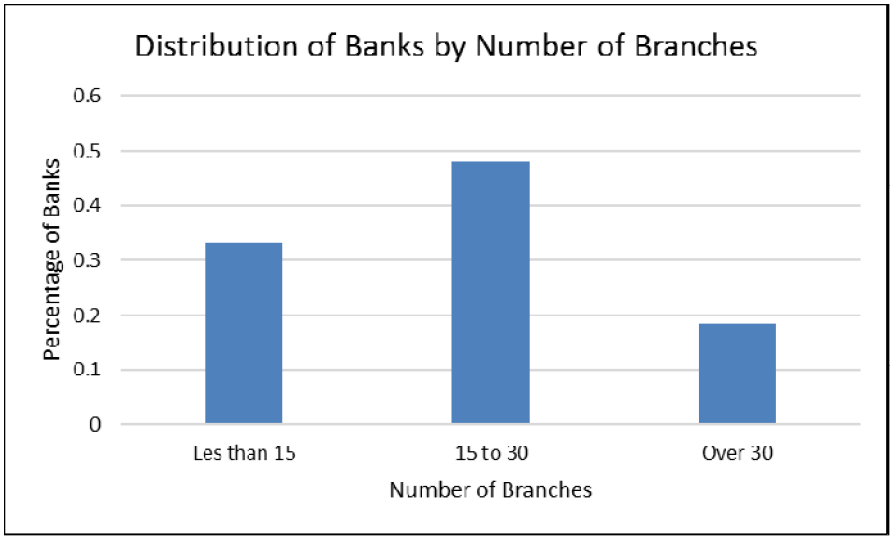

Figure 4.2: Distribution of Commercial Banks by Number of Branches

4.3 Access to Financial Services

The first objective of this study was to determine the effect of mobile banking strategy on the access to financial services in Kenya. Strategy manager of commercial banks were to provide data on the effect of mobile banking on access to financial services by responding to item listed in Table 4.1. They responded by way of selecting options between 1 and 5 on a Likert scale with 1, on one extreme, indicating strong disagreement and 5, on the other extreme indicating strong agreement. The figures in Table 4.1 represent the mean responses and their standard deviation. The mean responses were the ranked in order from the largest to the smallest.

As shown, the strategy managers agreed that their clients are aware of all the products they can access by their mobile devices (ε = 4.07, ů = 0.78); that clients are aware that they can access their accounts using their mobile devices (ε = 4.04, ů = 0.85). Further, the strategy managers agreed that with mobile devices, clients can access their funds any time (ε = 3.93, ů = 1.14) and that clients indeed, frequently check balances using their mobile devices (ε = 3.89, ů = 1.01). The strategy managers confirmed that using mobile devices provided the cheapest way for clients to access their accounts (ε = 3.78, ů = 1.01). The number of customers who do not have formal accounts is growing (ε = 3.74, ů = 1.02) as is the number of clients seeking credit by mobile devices (ε = 3.52, ů = 1.37). On the contrary, the strategy managers showed weak agreement that all segments of banking clients have access to financial services (ε = 2.93, ů = 1.47) and that most clients access their accounts through mobile devices (ε = 2.78, ů = 1.34).

Table 4.1: Access to Financial Services

ACCESS TO FINANCIAL SERVICES	MEAN	SD
Your clients are aware of all the products they can access by their mobile devices	4.07	0.78
All your clients are aware they can access their accounts on mobile devices	4.04	0.85
Clients with mobile devices can access their funds any time	3.93	1.14
Your clients frequently check for balances using mobile devices	3.89	1.01

Using mobile devices is the cheapest way for clients to access accounts	3.78	1.01
There are an increasing number of customers who do not have formal accounts	3.74	1.02
The number of clients seeking credit by mobile devices is growing	3.52	1.37
The number of direct deposits through mobile devices is growing	3.48	1.28
The number of accounts accessed by mobile devices is increasing	3.41	1.15
Those who use mobile banking tend to be the high income group	3.41	1.34
Number of accounts open using mobile devices is growing	3.07	1.47
All segments of your banking clients have access to your financial services	2.93	1.47
Most of your clients access their accounts through mobile devices	2.78	1.34
GRAND MEAN	**3.54**	

Cronbach's Alpha = 0.8317 (Good)

4.4 Usage of Financial Services

The second objective of this study was to establish how mobile banking strategy contributes to the usage of financial services. Table 4.2 presents the mean of the responses of the managers and the standard deviation. The mean responses were then ranked from the largest to the smallest. As shown in the table, the managers agreed that low income levels were a hindrance to the usage of mobile banking (ε = 4.52, ů = 0.64). They also indicated that most clients check their financial statements using mobile devices (ε = 4.15, ů = 1.10). Further, clients prefer using mobile banking to traditional banking procedures (ε = 3.96, ů = 1.13) and that the variety of services commercial banks provide through mobile banking is wide (ε = 3.78, ů = 0.97). All products that can be accessed through mobile banks are used by clients (ε = 3.70, ů = 1.14) and clients with mobile devices can access their funds any time (ε = 3.56, ů = 1.22). However, the frequency of accessing financial services by mobiles devices seems not to be high (ε = 3.37, ů = 1.42).

Table 4.2: Usage of Financial Services

USAGE OF FINANCIAL SERVICES	MEAN	SD
Low income levels are hindering usage of mobile banking	4.52	0.64
Clients check their financial statements using mobile devices	4.15	1.10
Clients prefer using mobile banking to traditional banking procedures	3.96	1.13
The variety of services you provide through mobile banking is wide	3.78	0.97
Your clients use all the products they can access by mobile devices	3.70	1.14
Clients with mobile devices do access their funds any time	3.56	1.22
Using mobile banking has increased lending	3.41	1.39
Frequency of accessing financial services by mobiles devices is high	3.37	1.42
GRAND MEAN	**3.81**	

Cronbach's Alpha = 0.7956(Good)

4.5 Quality of Financial Services

The third objective of this study was to establish how mobile banking strategy contributes to the quality of financial services. The strategy managers in the commercial banks were to indicate ways by which the use of mobile banking had improved the quality of financial services provided to clients. Table 4.3 provided the means and standard deviations of the responses ranked from the highest mean to the lowest mean.

As regards the contribution of mobile banking towards the quality of financial services, the managers of strategy in commercial banks agreed that the use of mobile devices had improved the willingness/readiness of employees to provide services ($\varepsilon = 4.22$, $\mathring{u} = 1.01$)

and that the use of mobile banking has enhanced workers' effectiveness on the job (ε = 3.89, ů = 1.15). Customers are also well informed of banking services provide (ε = 3.81, ů = 1.04) and the trust in phones for accessing financial services from banks is high (ε = 3.70, ů = 1.23). Further, the use of mobile banking ensures customerôs confidentiality (ε = 3.70, ů = 1.20) and security of customersô funds (ε = 3.67, ů = 1.21). Commercial banks are also able to understand the needs of the customer (ε = 3.59, ů = 1.28).

Table 4.3 : Quality of Financial Services

QUALITY OF FINANCIAL SERVICES	**MEAN**	**SD**
Improved the willingness/readiness of employees to provide services	4.22	1.01
Using mobile banking has enhanced workers' effectiveness on the job	3.89	1.15
Customers are well informed of banking services you provide	3.81	1.04
Clients trust phones in accessing financial services from your bank	3.70	1.23
Mobile banking ensures the confidentiality of the customer	3.70	1.20
Clients are ensured security of their funds if they use mobile banking	3.67	1.21
By mobile banking you are able to understand the needs of the customer	3.59	1.28
Transactions conducted by mobile banking are error free	3.48	1.34
Information about your banking services can be access easily by phone	3.44	1.01
Clients are satisfied with services provided through mobile banking	3.07	0.96
GRAND MEAN	**3.66**	

Cronbach's Alpha = 0.8922 (Good)

4.6 Summary and Interpretation of Findings

This study finds that the use of mobile phones in banking through making clients aware of all the products they can access by mobile devices and making them aware that they can access their accounts using their mobile devices. The use of mobile devices has enabled clients to access their funds at any time and even check their balances. Mobile devices provide the cheapest way for clients to access their accounts. The number of customers with informal accounts and those seeking credit by mobile devices is increasing.

These findings agree with those of Chatain, et al. (2008) in that both studies show accessibility of financial services through mobile phones was widened as people accessed more of the devices. Commercial banks used this technology to market their products, sensitize customers on the types of services they could access using the phone, enabling unlimited access to banking services and used the mobile devices to provide informal accounts to clients.

The findings are also in agreement with Bellamy (2010) who established that the kind of technology available determined the strategic alignment of firms. Firms were forced to include the technology available as a means of making themselves competitive and improve their efficiency in providing services to their customers. This study has established that with widening mobile telephony, products like informal accounts have been introduced since this is what the customer wants from banks. In this aspect, mobile telephony has improved access to financial services.

This study has established that the use of mobile devices has improved usage of financial services beyond just improving access. Most clients check their financial statements using mobile devices and the use of mobile banking has become more preferable to traditional banking procedures. Further, banks are now providing a wider variety of services commercial banks provide through mobile banking. Indeed, almost all banking products can be accessed through mobile banking and this is done regardless of the time of the day.

A similar study by Burhouse (2014) also established that mobile telephony improved access to mobile financial services in the USA. Financial services through mobile banking motivated clients when attached to mainstream banks. The use of smartphones increased the opening of mobile bank account in effect widening access to the mainstream banking. The findings also agree with those of Muisyo, Alala and Musiega (2014) in Kakamega town in Kenya. They established that the wider use of mobile phones in Kakamega town had widened the access to banking services to those who used the mobile devices.

This study has also established that mobile baking has improved the quality of services provided by commercial banks. This has been realized by improving the willingness and

readiness of employees to provide services in an effective manner. Through mobile banking, customers are well informed of banking services available to them and the customers trust the services. The level of confidentiality and security is high and banks are able to understand the needs of the customer better than before.

The findings agree with those of Jepleting, Sangoro and Bureti (2013) who conducted their study in Eldoret town in Kenya. In their study it was revealed that customers using mobile banking services were satisfied with the efficient and reliable services provided to them. The study showed that quality of services to customers could be improved further especially with regard to access to accounts. However, unlike this study, their study found that people still had strong doubts regarding the security and reliability of the mobile banking system.

CHAPTER FIVE
SUMMARY and CONCLUSIONS

5.1 Introduction

This section presents the summary and conclusions of this study. 5.2 presents the summary of the study, 5.3 presents the conclusions and 5.4 focuses on recommendations. Limitations are discussed in 5.5 while 5.6 make suggestions for further research.

5.2 Summary

This study had three objectives regarding the use of mobile banking as a strategy of financial inclusion in Kenya. The three objectives were: to determine the effect of mobile banking strategy on the access to financial services; to establish how mobile banking strategy contributes to the usage of financial services and to establish how mobile banking strategy contributes to the quality of financial services.

To achieve the three objective, a survey study was conducted in which primary data was collected by means of self-administered questionnaires presented to and completed by managers of strategy in 30 commercial banks in Kenya that have adopted mobile banking. Analysis was done by use of the mean and standard deviation.

Findings indicated that the use of mobile banking had a tremendous effect on access to financial services. Mobile banking had also improved the usage of financial services among the clients of commercial banks. Further, the use of mobile banking had improved the quality of financial services provided by commercial banks in Kenya

5.3 Conclusions

Basing on the findings of this study, the following conclusions are drawn. First, mobile telephony has improved the access to commercial banking financial services by customers. This is seen through improved awareness of all the products they can access by mobile devices; increased frequency of access to accounts, the twenty-four-hour

access to accounts, the cheapness of the use of mobile banking and the increase in the number of clients with informal accounts managed through mobile devices.

Secondly, the use of mobile devices has improved usage of financial services provided by commercial banks. For instance, most clients now check their financial statements using mobile devices; the use of mobile banking is more preferred to traditional banking; the variety of banking services provided through mobile banking has widened. Now most banking services can be accessed by mobile banking.

The third conclusion of this study is that mobile baking has improved the quality of services provided by commercial banks. This is seen through improved willingness and readiness of employees to provide services in an effective manner. It is also seen through the high levels of customersô awareness of the banking services available to them through mobile banking. Customers are increasingly trusting the use of mobile banking to conduct transactions and banks now better understand the needs of the customers.

5.4 Recommendations

This research makes the following recommendations. First, the use of mobile banking should be widened in intensity of use. This means customers should have more freedom and frequency in accessing the services provided by commercial banks through mobile banking. Though tremendous improvement has been achieved, a lot has to be done regarding the number of accounts being opened using mobile devices, widening the segments of the clients that have access to financial services and the percentage of customers using mobile banking vis-à-vis traditional banking.

Secondly, the use of mobile banking to enhance usage of financial services can still be improved. Most clients currently prefer checking their financial statements using mobile devices as opposed to the traditional banking procedures. Further, all products that can be accessed through mobile banks are used by clients any time during the day and cheaply so. However, weaknesses are realized when it comes to using mobile banking for lending and the frequency of accessing financial services. These should be strengthened.

Thirdly, the quality of services provided through mobile banking can still be improved. Currently, employees are ready and willing to offer services to customers effectively, customers are well informed of banking services available to them, customers trust mobile banking more, customerôs confidentiality and security are guaranteed and commercial banks are also able to understand the needs of the. However, access to banking information using mobile devices has to be improved to make customers satisfied with the banking services that get through mobile banking.

5.5 Limitations of the Study

The strength of this research lies in its time limit. The time scope of this research was for the instant the respondents completed the questionnaires handed to them. It cannot be told by the study whether the results would still hold if it was designed to cover a longer period of time. Further it is not possible to tell whether the same findings will hold for the period after responding to the questionnaires.

The findings of the research covered only commercial banks in Kenya. Kenya has many other financial institutions that are using mobile telephony to provide their services. It is not possible to tell from this study whether the same findings would apply to all the other financial institutions in Kenya. Further, the research has not dealt with commercial banks outside Kenya, for instance in the East African Community to ascertain whether the findings can still hold.

The quality of the data may be a weakness of this study. This study was based on qualitative data. Qualitative data has a weakness of being highly opinionated. The indications in the questionnaires can easily pass as opinions of the respondents which may not be an accurate representation of the facts on the ground. The effect is that if the data were collected a few months later, due to the dynamism in human behavior, the results can become sharply different.

5.6 Suggestions for Further Research

There is a need to answer the question of whether the findings of this research can be made universal across time in Kenya and outside Kenya. There are many financial institutions in Kenya and abroad which use mobile banking. This study has just covered commercial banks in Kenya. This reduces the power of universally applying the results. A research can be done to determine how mobile banking is used to enhance financial inclusion in more financial organizations and for a longer period of time to get more universally useful results.

This research has not answered the question of whether mobile banking causes improved access to financial services, improved usage of financial services and improved quality of financial services. A study can be done to show whether mobile banking causes improved financial inclusion.

The study can be repeated with aid of secondary data. Since secondary data is recorded with a higher level of objectivity, the results found can provide strong and objective support to the findings that are based on primary data. It is the recommendation here that such a study can be repeated using secondary data.

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APPENDICES

Appendix I: List of Banks Using Mobile Banking in Kenya

Commercial Bank	Bank To M-Pesa Code	Pay bill Number
1. ABC Bank	APP	111777
2. Bank of Africa	*987#	972900
3. Barclays Bank K LTD	*224#	303030
4. CFC Stanbic	*208#	600100
5. Chase Bank	* 275#	552800
6. Comm. Bank of Africa	*654#	880100
7. Consolidated Bank LTD	*262#	508400
8. Co-operative Bank	*667#	400200
9. Credit Bank	*699#	972700
10. Diamond Trust Bank (DTB)	*385#	516600
11. Ecobank	*335#	700201
12. Equatorial Commercial Bank	*286#	498100
13. Equity Bank	*247#	247247
14. Family Bank Ltd	*325#	222111
15. Guaranty Trust Bank	APP	910200
16. Guardian Bank	*356#	344501
17. Gulf African Bank	*399#	985050
18. Housing Finance Company	*231#	100400
19. I & M Bank Limited	*458#	542542
20. IMPERIAL BANK LTD	*356#	800100
21. Jamii Bora Bank	*344#	529901
22. KCB	*522#	522522
23. K-REP BANK	*527#	111999
24. National Bank	*625#	547700
25. NIC Bank Limited	*488#	488488
26. Post Office Savings Bank	*498#	200999
27. Prime Bank	APP	982800
28. Standard Chartered Bank	*722#	329329
29. Transnational Bank	*862#	862862
30. UBA Bank	*368#	559900

(Source: Safaricom, Kenya, 2015)

Appendix II: Questionnaire

Please answer all questions honestly according to the given instructions

SECTION A

DEMOGRAPHIC INFORMATION

Complete this section by filling in the spaces

1. How many people has your organization employed? _____
2. How many branches do you have in Kenya? _____
3. Have you adopted mobile banking in your bank? _____
4. What position do you hold in the bank? _____

SECTION B

ACCESS TO FINANCIAL SERVICES

To what extent do you agree that each of the following statements about mobile banking affects access to financial services provided by your bank to clients? Tick the option that best explains your view.

(1= Not at all, 2= Little Extent, 3=Moderate Extent, 4=Great Extent, 5=Very Great Extent)

	1	2	3	4	5
All segments of your banking clients have access to your financial services					
Most of your clients access their accounts through mobile devices					
The number of accounts accessed by mobile devices is increasing					
The number of clients seeking credit by mobile devices is growing					
The number of direct deposits through mobile devices is growing					
Using mobile devices is the cheapest way for clients to access accounts					
Number of accounts open using mobile devices is growing					
Those who use mobile banking tend to be the high income group					
There are an increasing number of customers who do not have formal accounts					

All your clients are aware they can access their accounts on mobile devices					
Clients with mobile devices can access their funds any time					
Your clients are aware of all the products they can access by their mobile devices					
Your clients frequently check for balances using mobile devices					

SECTION C

USAGE OF FINANCIAL SERVICES

To what extent do you agree that each of the following statements about mobile banking affects usage of financial services provided by your bank to clients? Tick the option that best explains your view.

(1= Not at all, 2= Little Extent, 3=Moderate Extent, 4=Great Extent, 5=Very Great Extent)

	1	2	3	4	5
The variety of services you provide through mobile banking is very wide					
Clients with mobile devices do access their funds any time					
Your clients use all the products they can access by their mobile devices					
Clients check their financial statements using mobile devices					
Low income levels are hindering usage of mobile banking					
Clients prefer using mobile banking to traditional banking procedures					
Using mobile banking has increased lending					
The frequency of accessing financial services by mobiles devices is high					

SECTION D

QUALITY OF FINANCIAL SERVICES

To what extent do you agree that each of the following statements about mobile banking affects the quality of financial services provided by your bank to clients? Tick the option that best explains your view.

(1= Not at all, 2= Little Extent, 3=Moderate Extent, 4=Great Extent, 5=Very Great Extent)

	1	2	3	4	5
It has improved the willingness/readiness of employees to provide services					
Customers are well informed of banking services you provide					
Clients trust phones in accessing financial services from your bank					
Clients are ensured security of their funds if they use mobile banking					
Mobile banking ensures the confidentiality of the customer					
By mobile banking you are able to understand the needs of the customer					
Transactions conducted by mobile banking are error free					
All information about your banking services can be access easily by phone					
Using mobile banking has enhanced workers' effectiveness on the job					
Clients are satisfied with services provided through mobile banking					