THE RELATIONSHIP BETWEEN PERCEIVED EASE OF USE, PERCEIVED USEFULLNESS, BEHAVIOURAL INTENTION TO USE AND ACCEPTANCE OF MOBILE BANKING SERVICES:

THE CASE OF COMMERCIAL BANKS IN KENYA

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DECLARATION

This research project report is my own original work and has never been presented for the award of degree in a University.

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D61/79620/2012

This is project report has been submitted with my approval as University supervisor.

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DEDICATION

This research project is dedicated to my dear parents Mr. and Mrs. Samson Tumo for laying a strong foundation to my life. My special dedication to my wife Naomi Rono, my dear son Ian, and daughter Jasmine who are always the source of my strength, joy and desire to excel academically. I thank God for having you in my life.

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LIST OF ABBREVIATIONS USED

ANOVA	**:**	Analysis of Variables
CBD	**:**	Central Business District
CBK	**:**	Central Bank of Kenya
CCK	**:**	Communication Commission Kenya
EBL	**:**	Equity Bank Ltd
MBS	**:**	Mobile Banking Services
MNO	**:**	Mobile Network Operators
MVNO	**:**	Mobile Virtual Network Operators
SIM	**:**	Subscriber Identification Module
SMS	**:**	Short Messaging Service
TAM	**:**	Technology Acceptance Model

ABSTRACT

Mobile phones play a big role in making life convenient, productive and significantly easier to transact. Most transactions can now be done electronically from almost any location with M-commerce technology. M-commerce involves transacting goods and services, which is done by utilizing mobile access via networks with the use of mobile banking and mobile devices. This service has provided banking services to all people including unbanked, those without bank accessibility or bank accounts, those living in remote areas, and those who are at the bottom of the economic pyramid. It's evident that problems of being under banked and unbanked could be overcome if financial services were delivered over a mobile phone since there are more mobile phone owners than bank accounts owners. Despite the benefits achieved from using the mobile banking services like convenience, flexibility, simplicity and low cost plus its potential of improving the financial services its acceptance and usage rate is still low. The objective of the study was to determine the relationship between perceived ease of use, perceived usefulness, behavioral intention to use and acceptance of mobile banking services. A descriptive design was adopted to study and analyze the variables. A cross sectional and correlation quantitative analysis was also adopted to evaluate the acceptance of mobile money. The study population consisted of all the 43 Commercial Banks in Kenya. The study sampled 12 commercial banks. The study used purposive sampling technique to sample 10 users of mobile banking services from each of the 12 Commercial Banks. Data was collected using both primary and secondary methods. Data was analyzed through descriptive and inferential statistics. The study found that most of mobile banking users use their mobile banking for paying bills, cash withdrawal and buy airtime. The results show that mobile banking users think interaction with mobile banking does not require a lot of mental effort and that it is easy to use and learn how to use mobile banking system. The study found that mobile banking services in overall is advantageous, banks are trustworthy and that they would not feel totally safe providing personal privacy information over mobile banking. Evidence shows that transaction fee (bank charges) is expensive to use, mobile banking may not perform well because of network problems and they think mobile banking is expensive. The results also revealed that perceived ease of use, perceived usefulness and behavioral intention to use are positively related to acceptance of mobile money services. The study further found that he more people will perceive mobile money system as easy to use, the more their intention and willingness to use the system will increase. The results indicate that perceived usefulness highly influences the behavioral intention to use mobile money services that is if people perceive a technology as useful their behavioral intention to use increases. The study recommends then system designers and developers should endeavor to achieve user friendliness in a technological system so as to increase the end users' perceived ease of use of the system.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

In the Recent times availability of mobile technology-based products and services in developing regions such as East Africa has been increasingly witnessed. Mobile phones provide a new and rapidly developing technological means to facilitate monetary payments and transfers for those included in and excluded from formal financial systems (Porteous, 2006).

Mobile phones play a big role in making life convenient, productive and significantly easier to transact. Most transactions can now be done electronically from almost any location with M-commerce technology. M-commerce involves transacting goods and services, which is done by utilizing mobile access via networks with the use of mobile banking and mobile devices (Techguide, 2012). Amongst others, M-commerce consists of mobile banking, mobile advertising and mobile entertainment. Mobile banking is also commonly referred to as cell phone banking and uses various technologies. This includes Subscriber Identity Module (SIM), Wireless Application Protocol (WAP), and Short Message Service (SMS) (Pavlou, 2003).Cell phone banking services are provided by most major banks in Kenya using the technologies mentioned.

Mobile banking is a service provided by financial institutions in cooperation with mobile operators. This service has provided banking services to all people including unbanked, those without bank accessibility or bank accounts, those living in remote areas, and those who are at the bottom of the economic pyramid. Mobile banking is

most frequently performed via SMS or the Mobile Internet but can also use special programs which clients downloads to the mobile device (Salzaman, Palen & Harper, 2001).

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

It's evident that problems of being under banked and unbanked could be overcome if financial services were delivered over a mobile phone since there are more mobile phone owners than bank accounts (Porteous, 2007). It is also believed that increase in acceptance of mobile money has the ability to enable and catalyze the development of mobile commerce in developing countries (Leishman, 2010).Through mobile banking, a customer can do everything that can be performed in regular banking institution, only with the benefit doing it at the convenience of his own home. This also gives a feeling of comfort and peace of mind knowing that one can keep track all personal banking issues with ease. (Venkatesh, 1999).

The banking industry in Kenya is well established with several commercial banks which are categorized as large, medium and small banks. To stay relevant in the competitive industry, there is need for banks to enhance value delivery for the clients. Banks have tendency of increasing branches in the country to beat competition but the new trend is to improve service delivery and harness technology including mobile banking services to serve customers better hence increased revenue (Koivu, 2002).

Kenya has an estimated population of 44 million with over 31 million mobile phone subscribers (CCK, 2013) and about 21.8 Million bank account holders (CBK, 2013).There are close to 43 registered banks in Kenya and most of them have mobile banking service in place proving services to its customers. Equity Bank Limited (EBL) has been in the forefront in technological advancement in a bid to enhance its competitive advantage. It is the bank with the highest customer base in East Africa with over 9 million customers in Kenya alone. With a total of over 3 million customers registered for mobile banking services, the bank has experienced remarkable growth in number of transactions and revenue. The bank has a well-established mobile banking platform which is constantly upgraded to suit the customer's needs. The well-established Eazzy24/7 mobiles platform has enabled establishment of recently launched Equity Hapo Hapo services and the MVNO platform with ease (**www.equitybank.co.ke).** The bank presents a best choice to undertake the study because of its constant technological innovation and the market share it commands in Kenyan banking sector.

1.1.1 Theoretical Background

The mobile money platform has become popular with the banked, underserved and the unbanked population. Acceptability of mobile money highly depends on how individual users perceive innovation attributes such as simplicity, convenience, security, cost, flexibility and accessibility (Porteous, 2007). Perceptions on an innovation have a direct impact on the intention to use and the actual usage of an innovation (Venkatesh, 2000). Mobile banking as a new technology in most parts of the world; can either be adopted or rejected by users depending on several factors that affect their perceptions (Ngugi et al, 2010). Adoption of new service or new technology in mobile banking has been tackled for years by academicians.

In order to achieve the objectives of this research study, this study analyses the Technology Acceptance Model (TAM), Theory of Reasoned Action (TRA) and Theory of Planned Behaviour (TPB). According to the TAM model, user motivation is explained by perceived ease of use, perceived usefulness and attitude toward using the system (Davis 1985). The TAM posits that a user's adoption of a new information system is determined by that user's intention to use the system, which in turn is determined by the user's beliefs about the system. The TAM further suggests that two beliefs –perceived usefulness and perceived ease of use – are instrumental in explaining the variance in users' intentions (Barati, 2009).

The objective of the TRA is meant to show how a specific behavior is produced by an individual's beliefs, attitudes and intentions toward the specific behavior. This includes the subjective norm which is the individual's perception of social pressures of whether to continue or not to continue with the behavior (Braun, 2012). According to the theory,

behavior toward a technology usage is better predicted by intentions that are determined by the users' attitude and subjective norm (social environment) regarding the behavior, meaning that attitude towards an object influence intentions and also end up influencing user behavior with respect to the object in question (Jackson et al, 1997).

TPB evolved from TRA and was developed with the purpose of understanding and predicting the influences of human behavior and the strategies needed to influence change in a target behavior (Ajzen et al ,1980, Braun 2012). It is based on cognitive processing, making it quite different from affective processing models (Braun, 2012). The theory states that there is a relationship that exists between attitude and behavior, and that relationship is at its strongest when both are measured to the same degree of specificity (Ajzen et al, 2005).The theories will give an insight into the relationship between a perception and actual adoption or eventual action.

1.1.2 Contextual Background

Commercial banking business in Kenya is guided by the banking Act Chapter 488 that provide for the licensing and regulation of commercial banks within its jurisdiction. The central bank of Kenya that regulates the sector has licensed forty-five commercial banks that are tiered into peer groupings as large, medium and small depending on the various bank sizes.

The banking industry in Kenya is governed by the companies Act, the banking Act, the Central bank of Kenya Act and various prudential guidelines issued by the Central Bank of Kenya (CBK). The banking sector was liberalized in 1995 and the exchange controls lifted. CBK which falls under the Cabinet Secretary of Finance docket is responsible for formulating and implementing monetary policy and fostering the liquidity, solvency

and proper functioning of the financial system. The banking sector in Kenya comprises of 46 institutions, 43 which are commercial banks and the 3 mortgage finance companies according to CBK annual reports. Out of the 43 institutions 35 are locally owned. The foreign Banks comprise of 5 locally owned and 5 branches of foreign incorporated institutions.

The banking industry has been an expanding branch networking amid the introduction of branchless banking system, which includes the use of EFTs, ATM cards, SMS banking etc. The annual reports of CBK clearly indicate that branch network has been slowly expanding since 2002. By the end of December 2006, Kenya had a total branch network of 575, as compared to 486 branches in the period ended December 2002. Further it is indicated that Nairobi County has a large number of branch network while north eastern province has never added any branch since 2000.

This indicates that many Kenyans are left un-banked throughout the whole northern part of Kenya as banks have customer bases concentrating in major cities. Also the slow growth of branches can be attributed to the rapid rise of alternatives, which include electronic financial product through mobile phones and personal computers. Banks in Kenya have exponentially embraced the use of information communication technologies both in their service provision and as a strategy to ensure their survival. They have invested huge amounts of money in implementing the self and vital banking services with the objective of improving quality of customer service. Some of the ICT-based products and services include the introduction of SMS banking, ATMs, Anywhere banking software`s, core banking solutions, electronic clearing systems and direct debit among others.

In mid-2005, Kenya`s banking industry moved a milestone by introducing Real Time Gross and Settlement system (RTGS) which was renamed Kenya Electronic Payment and Settlement System (KEPSS). In October 2009, Central Bank introduced value capping, meaning the maximum value for which an individual can make payment by cheque. With the new arrangement, one cannot make a payment worth 1 million or more through a cheque. It will be easier and faster to make payment electronically through the central bank's real time growth settlement system. This will facilitate the interbank financial data transfer. The development of e-banking services is expected to decongest banking halls and reduce the incidences of long queues in banking halls. Digital-based financial services have made a significant contribution in covering the cost of financial services.

The vision 2030 for financial services in Kenya, as crafted by the government, is to create a vibrant and globally competitive financial sector that will create jobs and also promote high levels of savings to finance Kenya's overall investment needs. The Kenyan banking system has as well grown enormously in the last decade keeping pace with the country's economic growth. There has been significant improvement in the payments and settlements with electronic payments and RTGs (real time gross settlements) gaining quick acceptance. Information technology has played a major role in these achievements. Today, the banks have centralized operations, network based computing, and new delivery channels such as networked ATMs (Automated teller machines), Internet banking, and smart card based products and mobile access.

1.2 Research Problem

The financial services market in Kenya has been subject to radical transformation since Kenya started to register economic growth in early 2003. Commercial banks in Kenya started competing for Kenya's hugely untapped and unbanked population. The distribution of retail financial services received growing attention in academic and professional literature as it has been hailed as an increasingly important factor in determining whether banks compete effectively in their chosen market (Pasha, 2009). Commercial banks have therefore over years continued to introduce a wide range of new products, prompted by increased competition, embracing ICT and enhanced customer needs. As a marketing strategy, the new products offered in this segment of market, continue to assume local development brand names to suit the domestic environment and targeting the larger segment of local customer base. All the above clearly indicate that, Commercial Banks in Kenya have great developments like any other banking market in the world. It is important that Commercial Banks in Kenya understand the relationship between perceived ease of use, perceived usefulness, behavioral intention and acceptance of mobile banking services as they continue to innovate mobile banking services.

The study tried to determine if there exist any relationship between the variables in the study based on theoretical arguments which includes the Theory of Reasoned Action (TRA), Theory Acceptance Model (TAM) and Theory of Planned Behavior (TPB). The TAM argues that perceived ease of use and perceived usefulness determines one's intention to use and actual usage of technology. TAM assumes that perceived ease of use other things being constant, the easier the technology is to use, the more useful it can be (Ajzen, 1975).

There is limited scholarly research on perceived ease of use and perceived usefulness of mobile banking in the developing world (Donner & Tellez 2008). Besides understanding the current usage patterns, this study seeks to explain and predict the acceptance of mobile money banking services in Kenya basing on psychological perception. Therefore, the research questions which helped understand the study are as follows: to what extent does perceived ease of use influences acceptance of mobile banking services? How perceived usefulness does influences acceptance of mobile banking services? What is the influence of behavioral intention on the acceptance of mobile banking services? What is the relationship between perceived ease of use, perceived usefulness, behavioral intention to use and acceptance of mobile banking services?

1.3 Objective of the Study

The objective of the study was to determine the relationship between perceived ease of use, perceived usefulness, behavioral intention to use and acceptance of mobile banking services.

1.4 Value of the Study

The findings of this study may be useful to different cohorts of the population. To Policy makers, they may use the findings of the study to provide regulations, interventions and creating and enabling environment that enhances telecommunication innovations and their acceptance. To business owners they may use the findings to educate themselves on the many avenues and platforms that M-banking affords them

and their acceptance can help to reveal the underlying logic of Practitioners' strategic decisions in information management.

To mobile phone operators and banking institutions to improve or expand their services in a way geared to economic empowerment to all involved and also provide information for managers and software vendors seeking to enhance the adoption of communication-oriented forms of ICT and telecommunications. The study may be significant to future researchers, finance practitioners and academicians as it will contribute to advance or modify the existing theories and concepts. The findings may further provide learning base, be used as reference and stimulate further research in this area as well as background for further researches.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This literature review looks at studies previously done on perceived ease of use, perceived usefulness and acceptance of mobile banking services in developing world. Section 2.2 discusses the theoretical literature, section 2.3 presents the empirical literature while 2.4 will highlight local research on the topic and Section 2.5 will highlight the critical review.

2.2 Theoretical Literature

The theoretical review highlights the theories which will examine the relationship perceived ease of use, perceived usefulness and acceptance of mobile banking services. The study analyses the Technology Acceptance Model (TAM), Theory of Reasoned Action (TRA) and Theory of Planned Behaviour (TPB) and their arguments on the topic.

It also gives analysis of arguments and critical reviews on the theories or models used to examine the variables and the relationship between each other in order to understand on the research topic.

2.2.1 The Technology Acceptance Model

There are a number of influential models investigating intentions to adopt technology have emerging in the recent past. These models have their origins in the disciplines of

psychology, information systems and sociology (Venkatesh, Morris, Davis, & Davis, 2003). Among the best known of these is the Technology Acceptance Model (TAM) (Davis, Bagozzi, & Warshaw, 1989) based on the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975, Venkatesh, 2000). The TAM has been tested and applied in the explanation and prediction of future consumer behavior with respect to adoption and acceptance patterns of new technologies and innovations (Legris et al, 2003) amongst others in the mobile service domain over the years (Cheong & Park 2005).

Perceived ease of use and perceived usefulness jointly determine the attitude. Also perceived ease of use affects perceived usefulness. Attitude towards using a technology was omitted by Davis et al. (1989) in their final model (pp. 995–996) because of partial mediation of the impact of beliefs on intention by attitude, a weak direct link between perceived usefulness and attitude, and a strong direct link between perceived usefulness and intention. This was explained as originating from people intending to use a technology because it was useful even though they did not have a positive affect (attitude) toward using. Empirical studies have found that an individual's actual system usage is determined by behavioral intention, which is jointly predicted by perceived usefulness and perceived ease of use. Khalifa and Shen (2008) confirmed that perceived usefulness directly and significantly influences behavioural intention to use a particular system.

A key purpose of TAM is to provide a basis for discovering the impact of external variables on internal beliefs, attitudes, intentions, and usage (Davis et al 1989). On Comparing TAM to research grounded in Innovation Diffusion Theory (Rogers, 1995) there are more complex set of beliefs to predict adoption. Perceived usefulness in TAM is equivalent to Rogers' relative advantage while ease of use is equivalent to

complexity. Perceived innovation attributes are very important in explaining the rate of innovation acceptance or usage.

The TAM mainly attempts to identify the factors that affect user acceptance of information systems or to explain why they resist accepting these systems. TAM takes the linkages between belief, attitude, intention and behaviour. It mainly presents two important variables that affect the intention of user towards usage of computer related systems or applications which are "perceived ease of use" and "perceived usefulness. According to TAM, user intention predicts whether people will use the system or not. User behavioural intention towards actual system usage of information systems is determined by his/her attitude.

The parsimony of TAM combined with its predictive power make it easy to apply to different situations. However, while parsimony is TAM's strength, it is also the model's key limitation. TAM is predictive but its generality does not provide sufficient understanding from the standpoint of providing system designers with the information necessary to create user acceptance for new systems (Mathieson 1991, Venkatesh, 2000).

Extensive research over the past decade has provided evidence that perceived ease of use has a significant effect on behavioral intention to use, either directly or indirectly, through its effects on perceived usefulness (Agarwal and Prasad, 1999; Davis et al, 1989; Venkatesh, 2000).

A limitation of TAM is that while it provides a valuable insight into users' acceptance and use of technology, it focus only on the determinants of use (Perceived ease of use and Perceived usefulness) and does not reveal how such perceptions are formed or how

they can be manipulated to foster users acceptance and increased usage (Mathieson, 1991). The implication is that without a better understanding of the antecedents of Perceived ease of use and Perceived useful practitioners are unable to know which levers to pull in order to affect these beliefs and, through them, the use of technology (.Yousafzai et al, 2007).

2.2.2 Theory of Reasoned Action

The objective of the TRA is meant to show how a specific behavior is produced by an individual's beliefs, attitudes and intentions toward the specific behavior. This includes the subjective norm which is the individual's perception of social pressures of whether to continue or not to continue with the behavior (Braun, 2012).

According to Ajzen et al, (1980), individuals are rational and often make systematic use of the information that is available to them and therefore think of the implications of their actions and behavior and then they decide whether or not they should continue with their behavior. Because of the function of the attitude toward the behavior as being good or bad, and the subjective norm, with this model behavior is predictable through the individual's intention to perform the said behavior (Ajzen et al, 1980).

The behaviors referred to in the model are those that the individual has "free will" to control, and do not need special skills, resources and can be performed at will (Ajzen et al, 1980). According to the theory, behavior toward a technology usage is better predicted by intentions that are determined by the users attitude and subjective norm (social environment) regarding the behavior, meaning that attitude towards an object influence intentions and also end up influencing user behavior with respect to the object in question (Jackson et al, 1997).

Several criticisms have been leveled against the reasoned action theory. First, some scholars have questioned the assumption that the theory can explain the immediate causes of behavior, and therefore other determinants of behavior are of limited use (Ajzen & Driver, 1991; 1992). These scholars argue that there are other determinants of an individual's intention in addition to attitude toward behavior and the subjective norm. Second, the TRA cannot predict behaviors that require resources, opportunities, cooperation, and skills of others (Liska, 1984).

2.2.3 Theory of Planned Behavior

TPB evolved from TRA and was developed with the purpose of understanding and predicting the influences of human behavior and the strategies needed to influence change in a target behavior (Ajzen et al 1980, Braun 2012). It is based on cognitive processing, making it quite different from affective processing models (Braun, 2012). This theory is based on an individua's intention to carry out a behavior, making behavioral intention a determinant of behavior (Ajzen et al, 1980).

TPB assumes that an individual's intention to perform certain behaviour impacts the individuals' behavior (Ajzen et al 1980), thus behavioral intentions are the individuals', motivations to dedicate some effort in performing the said behavior (Braun , 2012).The theory states that there is a relationship that exists between attitude and behavior, and that relationship is at its strongest when both are measured to the same degree of specificity (Ajzen et al 2005).Behavior consists of the following elements: An action performed toward a goal, an action performed in a specific setting and an action performed at a specified time. (Braun, 2012).

The planned behavior theory has been criticized on several grounds (Eagly and Chaiken, 1993). First, individuals' perception of control over their behavior or situation can be biased. Secondly, the causal chain from perceived behavior control to intention and finally to action has been questioned. It implies that merely having a perception of control over some behavior will cause one to act on it. This is not correct especially with respect to negative behaviors. Thirdly, the conceptual framework of the TPB has been found wanting. By merely introducing one more variable, the perceived behavioral control, it cannot lay claim to pride of place among other comprehensive theories of human behavior. Lastly, the TPB fails to delineate the processes through which individuals formulate and implement their plans (Sifunjo, 2014).

2.3 Determinants of Acceptance of Mobile Banking Services

In this section recent studies and research in the field are highlighted to give more understanding on perceived ease of use, perceived usefulness, behavioural intention to use and eventual acceptance of mobile banking. Dzokoto et al (2011) in their study to investigate the adoption of mobile money transfers, conducted interviews with 35 low-income clients, 35 middle class clients, 25 merchants and 25 market women Mobile Money vendors in Ghana. They found that custo mers value Mobile Money as safe, fast and convenient services and they identified major challenges are lack of trust, literarily about technology (Vivian et al ,2011).

A research done by Rajnish et al, (2007) to undertake an objective and critical examination of the phenomenon of Mobile Commerce in a given business field and to scrutinize the potentials. The study concentrated on application and utility of Mobile Banking in Germany. The customer acceptance for Mobile Banking was surveyed

between 28.06.2005 and 21.07.2005 largely in Hamburg. A total of 488 natural persons in the age-group of 18 to 65 years answered a 3-page long questionnaire giving information on their perceived preferences and willingness to pay for 17 different financial services offered in Mobile Banking. The services were bundled into 3 groups: Mobile Accounting, Mobile Brokerage and Mobile Financial Information. The survey results and findings demonstrated unambiguously that Mobile Banking staged a remarkable use and acceptance. Banks under review were seen to increasingly getting forced to include mobile services in their product portfolios (Rajnish et al 2007).

One of the most successful Mobile banking initiatives was introduced in the Philippines in the year 2000 as per study done by (FinScope,2012).The service was known as G-cash and allowed consumers to shop at their local stores and make payments to merchants using their cell phones. Interestingly the success of this banking service was driven by the mobile operators and not the banks, however cell-phone banking was successful adopted by the population of the Philippines. The use of cell phone banking was alternative to using cash and banks ATM's. Globe Telecom operating the G-CASH service in the Philippines, which provided cashless and card less way to transform a mobile phone into an electronic wallet meaning that the phone could be utilized to send and receive money from and to other GCASH Users. (FinScope, 2012).

In South Africa, M-Pesa, a Vodacom and Nedbank partnership did not live up to expectations. In 2011, it had registered just over 100 000 users, a far cry from the 10 million, of the 13 million unbanked population, that it had expected to register within three years of the launch (AllAfrica.com 2011). Despite partnering with local banks to offer mobile banking services it did not experience a breakthrough and adoption by the locals. According to the CEO of Vodacom at the time, the reason for the failure of M-

Pesa in South Africa is due to the fact that the South African banking sector is more developed (All Africa.com, 2011).

2.3.1 Perceived Ease of Use

Perceived ease of use is the degree to which a person believes an innovation would be free of effort (Saade and Bahil, 2005). Technology users perceive a technology as easy to use if it is simple to learn, flexible and compatible with the user's needs and values. It is a construct based on a person's assessment of the effort involved in the process of using a particular innovation. In mobile banking services, it includes registration procedures, ease of use of the payment procedure, ease of the payment procedure, easy to access, simplicity of the platform design, the system flexibility and compatibility to the user's values. The service should be accessible on mobile phones with the most basic features and software. Perceived ease of use directly affects perceived usefulness and both determine the behavioral intention to use and eventually to the actual use of the system (Viehland & Leong, 2007).

This is supported by prior research that empirically found a positive relationship between perceived ease of use and perceived usefulness as critical factors on the use of telecommunication technologies (Agarwal et al, 2000). Perceived ease of use and perceived usefulness are considered to be the primary determinants of system usage and intention (Wu & Wang, 2005).

Convenience of usage in adopting telecommunication innovations occur when customers can transfer and withdraw their money at anytime, anywhere, regardless of location. Therefore the easier it is to use a technology, the greater the expected benefits from the technology with regard to performance enhancement. To prevent under usage,

the mobile money platform must be both easy to learn and easy to use (Luarn & Li, 2004). The easier it is for a user to interact with a system, the more likely he or she will find it useful (Thong et al, 2004). There is substantial empirical support for this view (Chau, 2001; Hong et al, 2002).

A system that is easy to use is less threatening to a user (Moon & Kim, 2001). So a consumer that perceives higher ease of use would develop a higher credibility perception towards the system that results into a positive impact on his/her intention to use the system. For two systems that have identical functions and the one that is perceived to be easier to use by users would be perceived to be more useful. On the other hand, if a system is perceived useless, its ease of use would not lead to acceptance. One of the reasons why a user would accept to use mobile money transfer services is because of its relative advantage over the other methods of money transfers, otherwise the user would opt for alternatives that he perceives to be easier to use (Moon & Kim, 2001).

2.3.2 Perceived Usefulness

Perceived usefulness in the adoption of mobile services is defined in a broader context to include how well consumers believe mobile services can be integrated into their daily activities (Kleijnen, 2004). Perceived Usefulness is defined as the prospective user's subjective probability that using a specific system will increase his or her job performance (Venkatesh et al, 2003; Chen, 2008). The perceived usefulness of something is its ability to provide a means-end relationship (i.e. the given thing as a means to a desired end), or to provide a rationale upon which to make decisions. Means-end knowledge accounts for why consumers use a product (Barczak et al, 1997). The

importance of perceived usefulness is based on the expectancy theory which models the role of beliefs in decision making (Chau, 1996). This theory asserts that the relative attractiveness of various options is related to people's beliefs about the consequences that each option will lead to and their beliefs about the desirability of these consequences. Individuals evaluate the consequences of their behavior in terms of perceived usefulness and base their choice of behaviour on the desirability of the usefulness (Chau, 1996)

Empirical studies have confirmed that perceived usefulness directly and significantly influences behavioral intention to use a particular system. When this belief increases, the consumers' intention to use mobile money will also increase. In consumer behavior analysis, perceived usefulness has been well tested as a determinant for a consumer's intention to use a technology. If mobility and easier accessibility characteristics of mobile money services leads to a consumer's belief that the mobile money system is better than traditional money transfer services then that will affect its perceived usefulness. (Venkatesh et al, 2000).

Extensive research over the past decade has provided evidence that perceived ease of use has a significant effect on behavioral intention to use, either directly or indirectly, through its effects on perceived usefulness (Agarwal & Prasad, 1999; Davis et al, 1989; Venkatesh, 1999). Research has proved that there is a significant effect of users" perceived usefulness of an information system on the intention to use the system (Venkatesh et al, 2000). Perceived ease of use was found to be the second most important determinant of a user's behavioral intention towards the system. The ultimate reason why people exploit mobile money transfer services is that they find them useful (Luarn and Li, 2005).

At the pre-implementation stage, perceived ease of use of a system was found in some studies not to have a significant and direct effect on their behavioral intention to use the system but instead affect their intentions only through perceived usefulness of the system (Szajna, 1996). This finding was later supported by (Chau, 1996). Chau further split the construct of perceived usefulness into two parts: perceived near-term usefulness and perceived long-term usefulness and reveals that behavioral intention to use a particular technology is dependent on the above two variables. Empirical findings have supported hypothesized relationships between perceived near-term and long-term usefulness, and intention to use. The ease of use of a system was found to have no significant direct relationship with its long term usefulness but instead its effects on user's intentions to use the system were through near term usefulness of the system. It was indicated that unless users perceived an information system as being useful, its ease of use has no effect on the formation of behavioral intentions to use it.

2.3.3 Behavioral Intention to Use

Behavior in the intention-based model is referred to as a manifestation which is observable, single-act criterion which is performed (not-performed) with respect to a specific target in a given situation at a given point of time (Fishbein & Ajzen, 1975). How hard individuals are willing to try, the effort the individuals are planning to exert to perform the particular behavior is the motivational factor captured in intention that subsequently influence behavior (Ajzen, 2002).

Behavioral intention to use is a function of attitudes from perceived ease of use and perceived usefulness and thus it is a measure of the strength of one's willingness to exert effort while performing certain behaviors. Research has shown that user's

acceptance and usage of an information technology innovation is determined by their beliefs and attitudes toward that information system. Recent studies have indicated that there is a significant positive correlation between behavioral intention and behavior. In that respect, behavior has been seen as an indicator of usage. Venkatesh et al (2000) found that behavioral intention fully mediated the influence of the other factors on immediate use or short term use of a system but did not have effects on continued use.

Behavioral intention does not perfectly correlate with the actual behavior. An individual may be engaged in a less intended choice due to the presence of some constraints (behavioral control factors). In addition, stated intentions often differ from true intentions due to social desirability bias (the tendency to provide the response that is socially expected) or consistency bias (the need to appear consistent to the analyst, which can result in the stated intentions that are consonant with the previously expressed attitudes, whereas in reality one's actual behavior will be dissonant from those attitudes). However, behavioral intention tends to have a positive association with the actual choice of that behavior. Hence it can be concluded that users' intention to use mobile money transfer services will positively influence their acceptance to use the system.

2.4 Local Empirical Literature

A research study to investigate the factors influencing mobile banking adoption by (Korir, 2012) was guided by four objectives ranging from age, cost, education and security of the platform under survey. The study targeted a sample of 400 respondents in Garissa District who were customers of Kenya Commercial Bank Ltd. The findings of the study indicated that there was a need for banks to develop a technically, reliable

and easy to understand mobile banking system besides being sensitive on cost effectiveness to their customers as it revealed that a few admitted that the cost of accessing mobile banking services was high. He noted that many behavioral implications have not been considered in depth as regards perception an attitude. (Korir, 2012).

A study by Thando (2013) examined the perception and adoption of mobile payment platforms (MPP) by entrepreneurs in Zimbabwe. It involved sampling a database of 1842 registered agents of the MPP that was supplied by Green Mobile, in Zimbabwe. Of the 1842 agents, 558 were informal entrepreneurs. These agents facilitated where customers could register to use the MPP. The research found that most informal entrepreneurs have positive perceptions about the service provider of the MPP; however, he suggested that the service providers needs to direct more effort and time in educating the entrepreneurs about the functionality, and added benefits of using the platform (Thando, 2013).

Gakure et al, (2013) undertook a descriptive survey research to analyze the factors that contribute to the performance of the Mkesho in Nairobi Region. As per the survey M-Kesho Account was launched by M-Pesa and Equity as an accessible, affordable bank account that allows people to deposit and withdraw money from their account using MPesa Account from their handset. The general objective of the study was to investigate factors contributing to low adoption of Mkesho services by subscribers. The total registered users of Mkesho during the survey period in May 2013 were about 700,000 people which formed the population density in the survey. The research sampled a total of 100 respondents representing 0.0142% of the population. The findings showed that 80% of the respondents were not using the Mkesho services and

only 20% the subscribers were using the service. This implied that the most customers had ceased to use the services of Mkesho as a result pointing towards the decline of the services. The findings also attributed the presence of other competitive and substitute products like Mshwari that is simple and easy to use, also the lack of awareness of Mkesho to the consumers as a cause for low adoption of Mkesho service. This shows that there are more underlying factors that affect adoption of mobile technology besides perception and attitudes.

2.5 Summary of Literature Review

This chapter has explored different theories advanced to explain the relationship between perception and acceptance of mobile banking. A multitude of models have been proposed to better predict the adoption factors for these services however, it has highlighted that there is still a lot to be discovered once these technologies move into a mainstream cycle where customers perception, behavioural intention to use and actual acceptance of the technology. The propositions highlighted in this study will provide more knowledge to a limited knowledge base, from a Mobile Banking adoption framework ,and highlight the areas in Equity Bank K Ltd should concentrate on to improve adoption of users to this mobile channel.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter details the methodology adopted in the study. Section 3.2 describes the research design, Section 3.3 is divided into 3.3.1 which describes the target population and 3.3.2 which describes sample, Section 3.4 is data and data collection, and Section 3.5 provides conceptual model and the analytical model of the study.

3.2 Research Design

According to Ngechu (2006), a research design is a plan showing how the problem under investigation will be solved. The design selects methods to be used to answer the research questions and solve the research problem. A descriptive design was adopted to study and analyze the variables. A cross sectional and correlation quantitative analysis was also adopted to evaluate the acceptance of mobile money.

A correlation approach was used to establish the relationships amongst variables. Regression analysis was also used to determine the predictive power of the independent variables on the dependent variable.

3.3 The Study Population and Sample

This section described the study population and sample.

3.3.1 Population

A study population is a well-defined or specified set of people, group of things, households, firms, services, elements or events which were being investigated (Ngechu, 2004). Thus, the population should fit a certain specification, which the researcher is studying and the population should be homogenous. For the purposes of this study, the study population consisted of all the Commercial Banks in Kenya. There are 43 commercial banks in Kenya as per the CBK's directory of listed commercial banks in Kenya. Therefore, the target population was 43 Commercial Banks in Kenya.

3.3.2 Sample

The study sampled 30% of Commercial Banks in Kenya. According to Mugenda and Mugenda (2003), a sample size of between 10% and 30% is a good representation of the target population and hence the 30% is adequate for analysis. Borg and Gall (2003) also state that 30% of the accessible population is enough for the sample size. The sample size was therefore 12 Commercial Banks in Kenya. Each commercial bank within Nairobi County will be represented by one of its branch.

From the sample size of 12 commercial banks, the study used purposive sampling technique to sample 10 users of mobile banking services from each of the 12 Commercial Banks. Purposive sampling is when researchers select a sample on the basis of their own knowledge of the population, its elements and the nature of the research aims, based on the judgment and the purpose of the study. Purposive sampling procedures draws a representative sample, from whose findings generalizations to the bigger population can be made and that people who do not fit the requirements are eliminated and it is less expensive as it involves lesser search costs (Cooper et al 2011).

The study was conducted within Nairobi County which is the capital city of Kenya and is the largest business hub in the country. The unit of analysis was mobile banking users from the target population. This was also due to limited time and financial constraints.

3.4 Data and Data Collection Instrument

Data was collected using both primary and secondary methods. For primary data, a close ended questionnaire as an instrument was administered by the researcher to obtain data from respondents. The questionnaire was divided into two sections that is first part consists of the background information and the second part comprises of items that measure perceptions and acceptance of mobile banking services. Secondary data was collected for review of relevant literature about the variables and theories from journal articles, text books, Internet and any relevant publications.

The research model used by Masinge (2010) included the original variables of the extended TAM used by (Venkatesh et al, 2000). These constructs and constructs were adapted to fit the purposes of this study as stated below. The research study conducted by Masinge (2010) made use of the TAM2 and had five predictors of the level of user perception of mobile banking. These are perceived usefulness, perceived ease of use, perceived cost, overall trust, and perceived overall risk. Perceived overall risk included performance risk, security and privacy risk, time risk, social risk and financial risk. The research instrument of 5-point Likert scale and closed-ended questions was used, with each of the constructs in the model represented (perceive ease of use, perceived usefulness, behavioural intention and actual usage of mobile banking).

3.5 Data Analysis

This section highlighted the conceptual and analytical models used to analyze and measure the variables in the study.

3.5.1 Conceptual Model

Data was compiled, sorted, edited, classified and entered into a computer for analysis using statistical packages for social scientists (SPSS version 16.0). The data was manipulated using cross tabulations. Multiple regression analysis was used to find out the relationship between the dependent variables, mediating variable and independent variables.

The variables can be represented in a mathematical format as below;

$$\mathbf{Y=f(x1, x2, x3)} \quad (1)$$

Where:

Y =Acceptance of mobile banking and

x1=perceived ease of use; **x2**= perceived usefulness; **x3**= behavioral intention to use

The reliability of the instrument was determined using Cronbach's alpha coefficient to measure the internal consistence of the variables. Hence a pre-test on the questionnaire was performed using SPSS to validate the research instrument within the targeted context since its validity may not be persistent across different technologies and user groups (Straub, 1989, 2004).

Table 3.1: Operationalization of Variables

Objectives	Variables	Indicators	Data Analysis
To determine the relationship between perceived ease of use, perceivedusefulness, behavioral intention to use and acceptance of mobile banking services.	Acceptance of mobile banking services	• Frequency of use •Number of hours spent per week. •Time spent using the system	Regression analysis
To determine the extent to which perceived ease of use influences acceptance of mobile banking services	Perceived ease of use	• Compatibility • Simplicity • Flexibility	Descriptive statistics
To determine how perceived usefulness influences acceptance of mobile banking services	Perceived usefulness	• Convenience • Security • Accessibility	Descriptive statistics
To examine the influence behavioral intention has on the acceptance of mobile banking services	Behavioral intention	• Effort of using • Willingness to try • Attitude	Descriptive statistics

Table 1: Operationalization of Variables

3.5.2 Analytical Model

The independent variables were the perceived ease of use and perceived usefulness while the intention to use was the mediating variable and acceptance of mobile money transfer services the dependent variable. A questionnaire was designed and tailored to the study using items from prior technology acceptance studies (Davis, 1989; Venkatesh and Davis, 2000a, b, Straub et al., 2000; Saade and Bahil, 2005, Mbogo, 2009).

Perceived ease of use was measured in respect of compatibility, flexibility and simplicity while perceived usefulness was measured in terms of convenience, security and accessibility. Behavioral Intention to use and Acceptance was measured in respect to willingness to use and benefits derived from using mobile money services respectively. The algebraic expression of the conceptual model which consists of the constant term coefficient and error term took the format below;

$$\mathbf{Y=\alpha+\beta_1X1+\beta_2X2+B_3X3+\varepsilon_t} \quad \text{.....(2)}$$

E_t is the Random error, The other variables were defined as before.

In order to measure the dependent variable (acceptance of mobile money services) three items will be used. One will be a measure of the frequency of use of the system. The second was to ask subjects to specify how many hours they normally spend each week using the system. The third will be how much time will be spent using the system. Five-position categorical boxes were used. The study used Ordinary Least Square (OLS) analysis to identify the relationship that exists between the dependent variable and

independent variables. The variables were rated on a five point likert scale running from (5) strongly agree to strongly disagree (1) to measure the extent of agreement pertaining to the ease of use and usefulness of mobile money services. The quantitative data was further analysed using descriptive statistics (frequency distributions, and percentage) and qualitative data was transformed into quantitative data by the way of tallies and frequency distribution and analyzed in the same way. Data was finally presented using tables, pie charts and graphs.

The correlation test was used as a basis for validating the relationships hypothesized in this study, as supported by Aldrich (1995), who explained that correlations are valuable tools because they can show a predictive relationship which can be used in practice. Cronbach's alpha was used to measure the reliability of the scales.The factor analysis was run along theoretical lines. TAM, TPB and TRA variables were assessed in the first factor analysis. A factor solution for a combination of the independent variables were determined. The 95% level of significance was used and the variance that each variable tested has on the set level assisted derive a conclusion.

CHAPTER FOUR

DATA ANALYSIS

4.1 Introduction

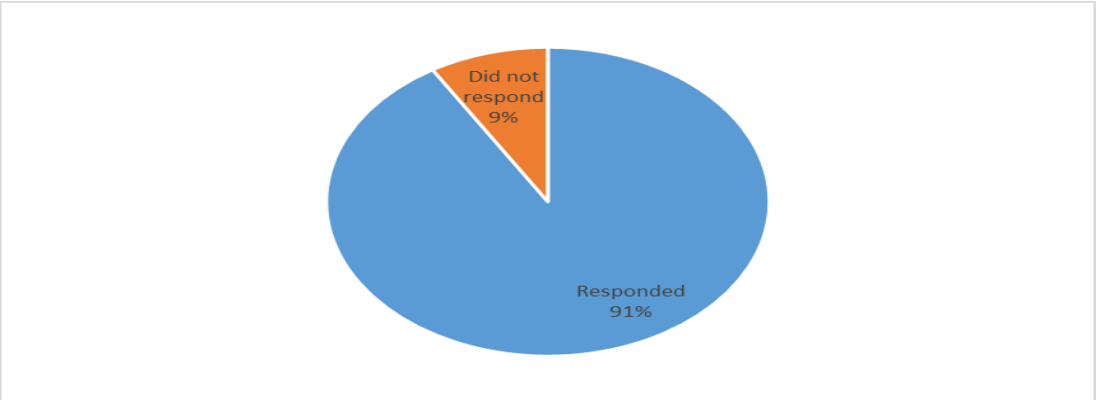
This chapter presents findings of the study according to the objectives of the study. Section 4.2 describes summary of statistics, Section 3 describes inferential statistics, and Section 4.4 describes discussion of findings.

4.2 Summary of Statistics

4.2.1 Response Rate of Mobile Banking Users

The study was conducted on a sample of 120 respondents. Out of the sample size, 105 returned duly filled in questionnaires making a response rate of 91% as shown in Figure 4.1

Figure 4.1: Response Rate of Mobile Banking Users



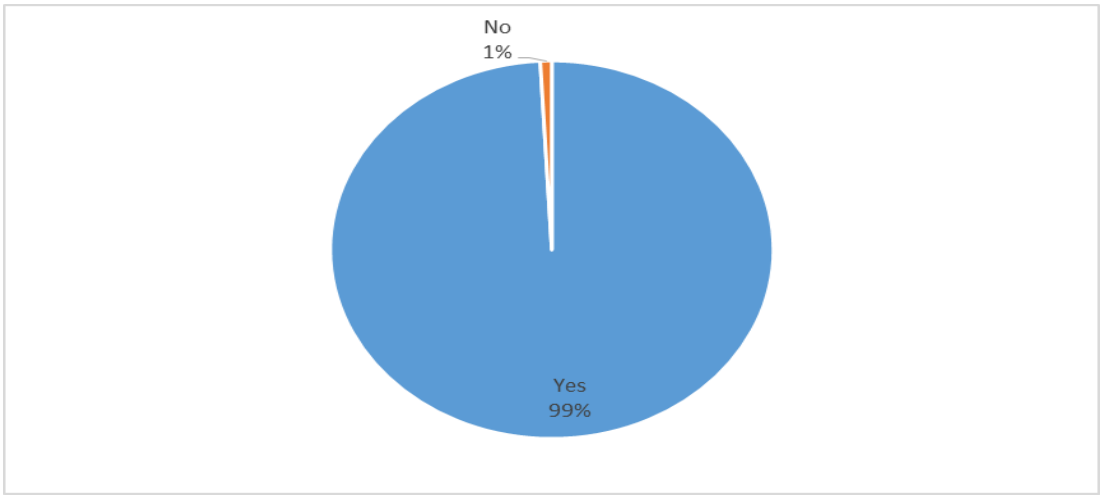
Source: Research Data (2014)

This response rate was sufficient for data analysis and the researcher went ahead and analyzed data.

4.2.2 Mobile Banking Services

The study sought information about mobile financial services. It requested respondents to state whether they have or use a mobile phone. Figure 4.2 presents the findings.

Figure 4.2: Usage of Mobile Phone in Nairobi County

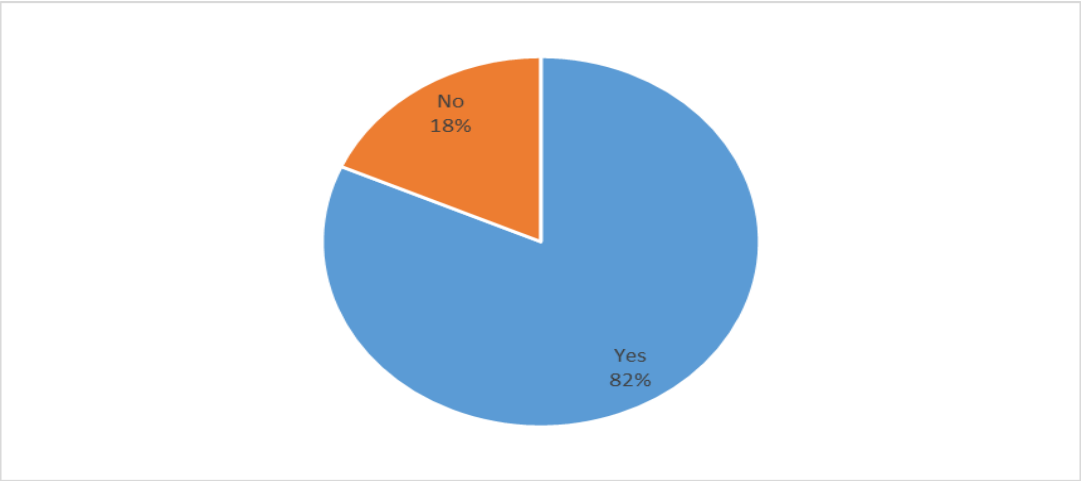


Source: Research Data (2014)

From the findings, it can be deduced that almost all of the respondents (99%) have or use a mobile phone while 1% only indicated that they don't have or use mobile phone. This implies that users of mobile banking services in Kenya have and use their mobile phones.

The study further requested respondents if they have a bank account. All the respondents (100%) indicated they have a bank account. They were then asked if they are subscribed to mobile banking service. Figure 4.3 presents the findings.

Figure 4.3: Subscription to Mobile Banking Service

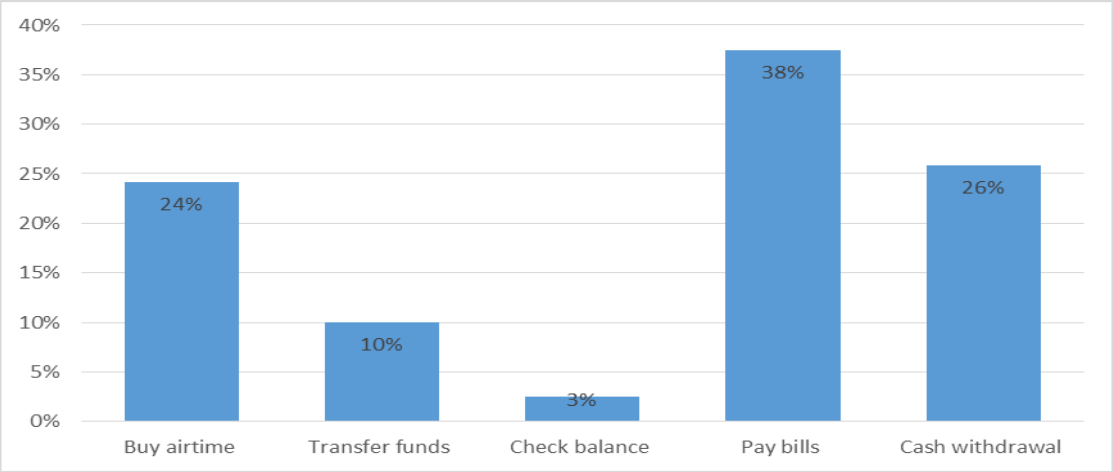


Source: Research Data (2014)

The findings shows that majority of the respondents (82%) were subscribed to mobile banking service while 18% were not. The findings implies that of account holders in commercial banks are subscribed to mobile banking services.

For those who indicated that that they are subscribed to mobile banking service, the study asked them what they you use mobile banking for. Figure 4.4 presents the findings.

Figure 4.4: Usage of Mobile Banking in Nairobi County



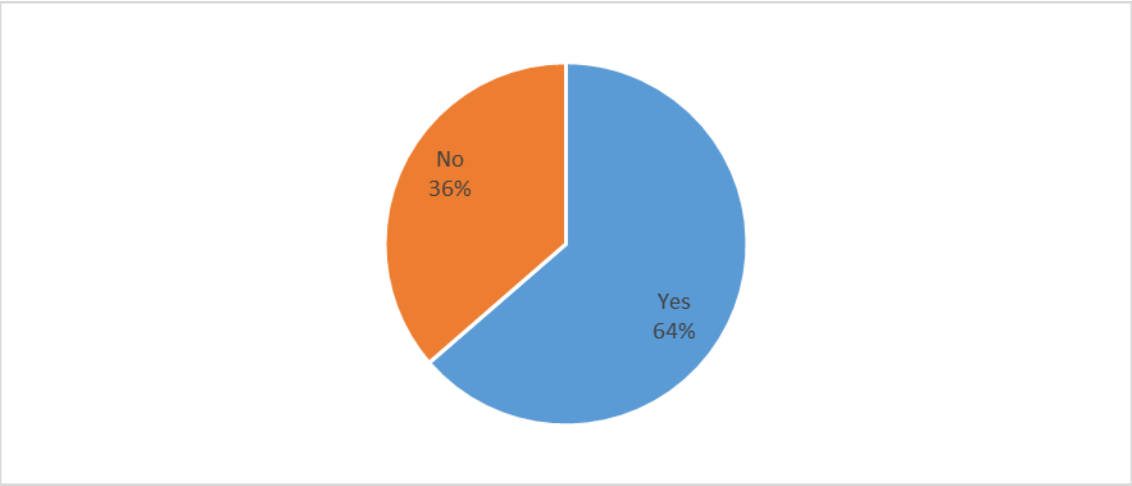
Source: Research Data (2014)

From the findings, most of the respondents (38%) indicated that they use mobile banking for paying bills, cash withdrawal (26%), buy airtime (24%), transfer funds (3%) and 3% for checking balance. The findings indicate that most of mobile banking users use their mobile banking for paying bills, cash withdrawal and buy airtime.

The study requested respondents with mobile banking service if mobile banking technology is complicated and difficult to use. All the respondents (100%) indicated that mobile banking technology is not complicated and difficult to use. All the respondents (100%) also indicated that the use of mobile banking is useful. The findings indicate that mobile banking service is useful to users.

Of the 18% of the respondents who indicated that they are not subscribed with mobile banking service, the study requested them to indicate if they plan on using it in the future. Figure 4.5 presents the findings.

Figure 4.5: Planning to Use Mobile Banking Services

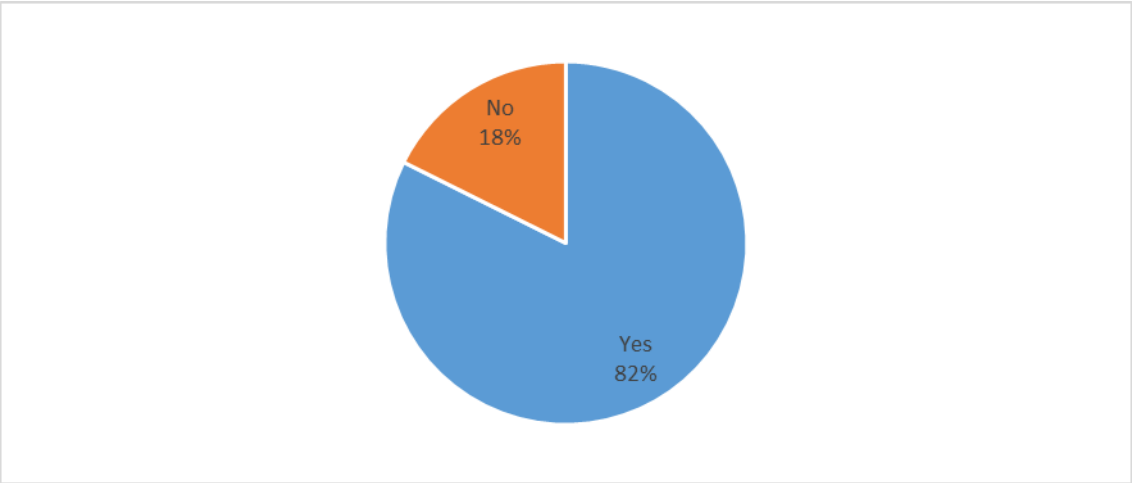


Source: Research Data (2014)

Of the respondents, 64% indicated that they are planning to start using it in future while 36% still indicated that they are not planning to. The findings indicate that more bank account users are planning to use mobile banking services.

The study finally requested respondents to indicate if they are satisfied with the authentication process with service provider when initiating a transaction. Figure 4.6 presents the findings.

Figure 4.6: Authentication Process



Source: Research Data (2014)

The findings shows that 82% of the respondents are satisfied with the authentication process with service provider when initiating a transaction while 18% are not. For those who are not, the study asked what is in their opinion a challenge is as far as financial transactions are concerned.

4.2.3 Perceived Ease of Use

The study in this section sought information about perceived ease of use. It requested respondents to state the extent to which they agree or disagree with each of the statements regarding perceived ease of use of mobile banking services. Majority of the respondents were in agreement that they think interaction with mobile banking does not require a lot of mental effort and that it is easy to use and learn how to use mobile banking system. This had mean scores of 4.29 and 3.78 respectively as shown in Table 4.1

Table 4.1: Perceived Ease of Use

	Mean	**S.D**
I think that interaction with mobile banking does not require a lot of mental effort.	4.29	1.119
I think that it is easy to use mobile banking to accomplish my banking tasks.	2.57	1.397
I think that using mobile banking would make it easier for me to carry out my tasks	1.71	0.983
I think that learning to use mobile banking would be easy.	2.93	1.455
It is easy to use and learn how to use Mobile banking system	3.78	1.168
I think mobile banking helps perform several banking activities with ease.	2.85	1.196

Source: Research Data (2014)

The findings also show respondents agreeing that they think that learning to use mobile banking would be easy with a mean score of 2.93, they think mobile banking helps perform several banking activities with ease (2.83), they think that it is easy to use mobile banking to accomplish their banking tasks (2.57) and they think that using mobile banking would make it easier for them to carry out their tasks having a low mean score of 1.71. The findings indicate that mobile banking users think interaction with mobile banking does not require a lot of mental effort and that it is easy to use and learn how to use mobile banking system.

4.2.4 Perceived Usefulness

The study in this section sought information about perceived usefulness. It requested respondents to state the extent to which they agree or disagree with each of the statements regarding perceived usefulness of mobile banking services. Majority of the respondents were in agreement that in overall, they think mobile technology is advantageous, banks are trustworthy and that they would not feel totally safe providing

personal privacy Information over mobile banking with mean scores of 4.51, 4.42 and 4.38 respectively as shown in Table 4.2

Table 4.2: Perceived Usefulness

	Mean	**S.D**
I think that mobile banking services are useful	3.83	0.990
Overall I think mobile technology is advantageous	4.51	0.837
I think that using mobile banking would enable me to accomplish my tasks uch quicker	1.38	0.790
The service is preferably reserved for high class of people and educated.	2.60	1.211
I would not feel secure sending sensitive information across mobile Banking.	3.85	1.237
I would not feel totally safe providing personal privacy Information over mobile banking.	4.38	0.818
When transferring money through mobile banking, I am afraid that I will lose money due to careless mistakes such as wrong input of account number and wrong input of the amount of money.	4.15	0.916
I believe banks are trustworthy.	4.42	0.631

Source: Research Data (2014)

The study also found that majority of the respondents were in agreement that when transferring money through mobile banking, they are afraid that they will lose money due to careless mistakes such as wrong input of account number and wrong input of the amount of money with a mean score of 4.15. There were few respondents who agreed that they think that using mobile banking would enable them to accomplish their tasks much quicker with a mean score of 1.38 and that the service is preferably reserved for high class of people and educated with mean score of 2.6. The findings indicate that in overall, mobile technology is advantageous, banks are trustworthy and that they would not feel totally safe providing personal privacy Information over mobile banking.

4.2.5 Behavioral Intention to Use

The study in this section sought information about behavioral intention to use. It requested respondents to state the extent to which they agree or disagree with each of the statements regarding behavioral intention to use mobile banking services. The study found that most of the respondents were in agreement that they think the transaction fee (bank charges) is expensive to use, mobile banking may not perform well because of network problems and they think mobile banking is expensive with mean scores of 3.73, 3.71 and 3.71 respectively as shown in Table 4.3

Table 4.3: Behavioral Intention to Use

	Mean	**S.D**
It requires sufficient skills to operate on Mobile banking platform	3.5	0.413
Mobile banking may not perform well because of network problems	3.71	0.429
Mobile banking may not perform well and process payments correctly	2.8	0.148
When transaction errors occur, I worry that I cannot get compensation from banks.	3.62	0.452
I think the transaction fee (bank charges) is expensive to use	3.73	0.54
The cost of subscription is high	2.81	0.421
I'm worried about use mobile banking because other people may be able to access my account	2.5	0.35
If I lose the mobile phone as a mobile banking user I will lose my money as well.	2.6	0.139
I think mobile banking is expensive.	3.71	0.429

Source: Research Data (2014)

Respondents were also in agreement that when transaction errors occur, they worry that they cannot get compensation from banks with mean score of 3.62. Few respondents agreed that they are worried about the use of mobile banking because other people may be able to access their account and that if they lose the mobile phone as a mobile banking user they will lose their money as well with mean scores of 2.5 and 2.6 respectively. The findings indicate that mobile banking users think the transaction fee

(bank charges) is expensive to use, mobile banking may not perform well because of network problems and they think mobile banking is expensive.

4.2.6 Acceptance of Mobile Banking Services.

The study in this section sought information about acceptance of mobile banking services. It requested respondents to state the extent to which they agree or disagree with each of the statements regarding acceptance of mobile banking services. Table 4.4 presents the findings.

Table 4.4: Acceptance of Mobile Banking Services

	Mean	**S.D**
I frequently use mobile banking services.	3.77	0.972
I spend more hours on mobile banking system a week	2.94	1.199
I don't spend a lot of time on mobile banking platform.	4.21	0.783

Source: Research Data (2014)

From the findings, majority of the respondents agreed that they don't spend a lot of time on mobile banking platform with a mean sore of 4.21. However, there are respondents who agreed that they frequently use mobile banking services and spend more hours on mobile banking system a week with mean scores of 4 3.77 and 2.94 respectively. The findings indicate that mobile banking users in Kenya do not spend a lot of time on mobile banking platform.

4.3 Inferential Statistics

4.3.1 Results of Correlation Analysis

Pearson correlation coefficient was used to examine if there is any correlation between perceived ease of use, perceived usefulness, behavioral intention to use and acceptance of mobile banking services. Table 4.6 presents the findings.

Table 4.5: Correlation Analysis

	Acceptance of mobile banking services	**Perceived ease of use**	**Perceived usefulness**	**Behavioural intention to use**
Acceptance of mobile banking services	1			
Perceived ease of use	0.533	1		
Perceived usefulness	0.689	0.489	1	
Behavioural intention to use	0.517	0.451	0.410	1

Source: Research Data (2014)

Results indicated a strongly positive relationship between behavioral intention to use and acceptance of mobile money services having a correlation coefficient of 0.517. This implies that the stronger individual's behavioral intention to use mobile money services, the more likely they are to perform that behavior.

The results also revealed that perceived ease of use is positively related to acceptance of mobile money services having a correlation coefficient of 0.533. This implies that

the easier the mobile money services can be used without any disturbances the more users will be willing to use it for their financial needs.

The results revealed that perceived usefulness is positively related to acceptance of mobile money services having a correlation coefficient of 0.689. This implies that the more users feel that the mobile money system is useful, the higher their acceptance level.

There was a positive significant relationship between Perceived Ease of Use and Perceived Usefulness of mobile money services having a correlation coefficient of 0.489. This means that ease of use positively influences perceived usefulness. This implies that a system that is easy to use will be perceived to be more useful compared to a difficult one.

The results revealed that perceived ease of use is positively related to behavioral intention to use mobile money services with a correlation coefficient of 0.451. This implies that the more people will perceive mobile money system as easy to use, the more their intention and willingness to use the system will increase.

The results revealed that perceived usefulness is positively related to behavioral intention to use mobile money services having a correlation coefficient of 0.410. The results imply that perceived usefulness highly influences the behavioral intention to use mobile money services that is if people perceive a technology as useful their behavioral intention to use increases.

4.3.2 Results of Model Goodness of Fit Test

The study used the regression model to predict the extent to which Perceived Ease of Use, Perceived Usefulness and Behavioral Intention to Use can determine the Acceptance of Mobile Money. It presents the model summary of the regression equation. Table 4.7 presents model summary

Table 4.6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.765	0.585	0.58	0.49245
a Predictors: (Constant), Acceptance of Mobile Money				

Source: Research Data (2014)

The model shows the extent to which independent variables influence the dependent variable. The results in the above Table indicate that a combination of Perceived Usefulness, Perceived Ease of Use and Behavioral Intention to Use have 58.5% (R square= 0.585) predictive potential for Acceptance of Mobile Money. This means that 58% of the variance in Acceptance of Mobile banking services is attributed to perceived ease of use, perceived usefulness and behavioral intention to use.

4.3.3 Results of ANOVA

The findings in Table 4.8 presents the ANOVA results which reveal that perceived ease of use, perceived usefulness and behavioral intention to use have a significant effect on Acceptance of Mobile banking services.

Table 4.7: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.881	4	3.47	7.554	.000b
	Residual	96.014	209	0.459		
	Total	109.894	213			
a Dependent Variable: Acceptance of Mobile banking services						
b Predictors: (Constant), perceived ease of use, perceived usefulness and behavioral intention to use						

Source: Research Data (2014)

Since the P value is actual 0.000 which is less than 5% level of significance, the regression model was significant (sig. <.000) and therefore fit for the study.

4.2.4 Estimated Model

The findings in Table 4.9 presents the coefficients of the regression model.

Table 4.8: Coefficients of the Model

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.480	.199		2.413	.017
	X1	.196	.050	.193	3.963	0.000
	X2	.373	.057	.324	6.489	0.000
	X3	.343	.038	.431	9.023	0.000
a Dependent Variable: Acceptance of Mobile banking services						

Source: Research Data (2014)

All the predictor variables had a p-value of less than 0.05 which means that they are significant predictors of Acceptance of Mobile banking services.

The regression model becomes:

$$Y=0.480+0.196X1+0.373X2+0.343X3$$

This implies that acceptance of mobile money is highly influenced by positive behaviour intentions of users towards it. If you know the level of one's perceptions regarding ease of use and usefulness of the mobile money platform, it is possible to predict their level of acceptance of the system. Behavioral intention to use is a statistically significant predictor of acceptance of mobile banking services therefore it can explain an increase or decrease in the acceptance of mobile banking services. This implies that if you know the level of one's willingness to use mobile money services, it becomes easy to predict their intentions to use the mobile money system.

4.4 Discussion

The study found a strongly positive significant relationship between behavioral intention to use and acceptance of mobile money services. It found that the stronger individual's behavioral intention to use mobile money services, the more likely they are to perform that behavior. This result concurs with Mbogo (2009) who concluded that there is a strong link between intention and actual behaviour. Behavioral intention to use is a function of attitudes from perceived ease of use and perceived usefulness and thus it is a measure of the strength of one's willingness to exert effort while performing certain behaviors (Venkateshet et al., 2003). Venkatesh et al., (2000) also found that behavioral intention fully mediated the influence of the other factors on immediate use or short term use of a system but did not have effects on continued use. However in another study carried by Venkatesh (2003) it was found that behavioral intention does

not perfectly correlate with actual behavior. An individual may be engaged in a less intended choice due to the presence of some constraints (behavioral control factors).

The study found that there is a significant positive relationship between perceived ease of use, perceived usefulness and behavioral intention to use. Behavioral intention was significantly determined by perceived usefulness and perceived ease of use. Perceived ease of use has a direct effect on perceived usefulness and both determine the consumers' toward use, which leads to behavioral intention to use and actual use of the mobile banking services. The finding is also in line with a study by Venkatesh et al., (2003) of the consistently prominent factors in explaining and predicting consumer behaviour in a variety of adoption models are perceived usefulness and perceived ease of use. Park (2005) also found that there is a direct interrelationship between perceived ease of use, perceived usefulness and behavioral intention to use.

This study found Perceived ease of use was found to have a more significant effect on behavioral intention to use. Wang et al., (2003) in their study on determinants of user acceptance of internet banking found that Perceived ease of use exerted a stronger influence on behavioral intention than perceived usefulness. Similarly, Davis (1989) found the direct effect of Perceived Ease of Use on intentions to be stronger in the early stages of learning and behaviour. Straub et al., (2000) concluded in their research on relative importance of Perceived Ease of Use in Information System Adoption that by controlling exogenous factors when comparing the two types of intentions to use a system it is the task or type of intended use that seems to determine whether Perceived Ease of Use directly affects use-intention.

The study also found that Perceived ease of use has a positive impact on perceived usefulness. This means that users, who perceive an innovation as easy to interact with, find it useful in meeting their needs. This is in line with Rogers (1985) findings in which he asserts that "ease of use is an antecedent of useful". All other factors being constant, the easier a technology is to use, the less effort needed to operate it and the more effort one can allocate to other activities. This result is also in line with Shim & Viswanathan (2007) who found a positive effect of perceived ease of use on perceived usefulness. This indicates that if users find that the mobile money system is easy to use, they will find the system useful in meeting their financial needs.

CHAPTER FIVE

SUMMARY AND CONCLUSION

5.1 Introduction

This chapter presents summary and conclusions of the findings. Section 5.2 describes summary of the study, Section 5.3 describes conclusions, Section 5.4 presents recommendations, and Section 5.5 describes suggestions for further study.

5.2 Summary of the Study

The study found that most of mobile banking users use their mobile banking for paying bills, cash withdrawal and buy airtime. It found that mobile banking users think interaction with mobile banking does not require a lot of mental effort and that it is easy to use and learn how to use mobile banking system. The results also revealed that perceived ease of use is positively related to acceptance of mobile money services having a correlation coefficient of 0.615. This implies that the easier the mobile money services can be used without any disturbances the more users will be willing to use it for their financial needs.

The study found that mobile banking services in overall is advantageous, banks are trustworthy and that they would not feel totally safe providing personal privacy Information over mobile banking. The results revealed that perceived usefulness is positively related to acceptance of mobile money services having a correlation coefficient of 0.527. This implies that the more users feel that the mobile money system is useful, the higher their acceptance level.

It found that mobile banking users think the transaction fee (bank charges) is expensive for them, mobile banking may not perform well because of network problems and they think mobile banking is expensive. Results indicated a strongly positive relationship between behavioral intention to use and acceptance of mobile money services having a correlation coefficient of 0.658. This implies that the stronger individual's behavioral intention to use mobile money services, the more likely they are to perform that behavior.

The study found a positive significant relationship between Perceived Ease of Use and Perceived Usefulness of mobile money services having a correlation coefficient of 0.489. This means that ease of use positively influences perceived usefulness. It found that the more people will perceive mobile money system as easy to use, the more their intention and willingness to use the system will increase. It found that perceived usefulness highly influences the behavioral intention to use mobile money services that is if people perceive a technology as useful their behavioral intention to use increases.

The study found out that a combination of Perceived Usefulness, Perceived Ease of Use and Behavioral Intention to Use have 58.5% (R square= 0.585) predictive potential for Acceptance of Mobile Money. It found out that acceptance of mobile money is highly influenced by positive behaviour intentions of users towards it. Behavioral intention to use is a statistically significant predictor of acceptance of mobile banking services therefore it can explain an increase or decrease in the acceptance of mobile banking services

5.3 Conclusions

The study concludes that there exists a strong, direct and positive relationship between perceived ease of use, perceived usefulness, behavioral intention to use and acceptance of mobile banking services.

It also concludes that there is a positive relationship between perceived ease of use and perceived usefulness. Similarly there exists a direct strong relationship between perceived usefulness and acceptance of mobile banking services. Perceived ease of use, perceived usefulness, and behavioral intention to use are the major variables in the study model. This model has indicated the above relationships. Behavioral intention was proposed to have a significant influence on the user's acceptance of mobile banking services. The evidence revealed by this study and previous studies has implications to system developers, especially at the level of system planning, development and implementation.

The results revealed that perceived usefulness is positively related to acceptance of mobile money services. This concludes that the more users feel that the mobile money system is useful, the higher their acceptance level. The study concludes that mobile banking users think the transaction fee (bank charges) is expensive to use, mobile banking may not perform well because of network problems and they think mobile banking is expensive. It concludes that the stronger individual's behavioral intention to use mobile money services, the more likely they are to perform that behavior.

The study concludes that there exists a significant relationship between Perceived Ease of Use and Perceived Usefulness of mobile money services. This means that ease of use positively influences perceived usefulness. It concludes that the more people will

perceive mobile money system as easy to use, the more their intention and willingness to use the system will increase. It concludes that perceived usefulness highly influences the behavioral intention to use mobile money services that is if people perceive a technology as useful their behavioral intention to use increases.

5.4 Recommendations

The study recommends a balanced approach for money transfer regulation of Mobile Network Operators wishing to offer mobile banking services independently from banks as opposed to the current situation where Mobile Network Operators are not directly responsible for the virtual Mobile Money accounts for their Mobile Money registered users.

The study also recommends that system designers and developers should endeavor to achieve user friendliness in a technological system so as to increase the end users' perceived ease of use of the system. This is because perceived ease of use influences the users' perception of the usefulness of the system. If users find the system easy to use then it is perceived to be useful. Hence perceived ease of use is a primary motivator to perceived usefulness of technological innovations and thus both being motivators for system acceptance or usage.

Practitioners, who might have been guided by previous Technology Acceptance Model studies to underestimate the importance of perceived ease of use, should reconsider the extent to which perceived ease of use affects system use. Perceived ease of use is important and does influence intended use, but its effects are task-dependent. Consequently, when advertising, marketing, or implementing new systems, mobile

money service providers might find it beneficial to advocate the ease of use of the system for given tasks rather than present it in a task-independent manner.

Mobile Network Operators may find it useful to advertise the benefits of mobile money hence Management attention should be focused on the development of belief. They should employ training and promotion approaches to develop the customers' beliefs of usefulness and ease of use of the system, which in turn will influence the behavioral intention to use mobile money services.

5.5 Suggestions for Further Study

The results from the study indicated that the studied variables explain or predict 58.5% in the acceptance of mobile money services. It is therefore, recommended that further research be conducted to find out the actual effect of those variables to mobile money system usage.

The discussed findings and their implication are obtained from commercial banks within Nairobi County only. In order to reduce on the bias accruing from studying one county, future research can be extended to include more counties in the country.

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APPENDICES

Appendix 1: Questionnaire for bank customers

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

Section A:

1. Name (optional)

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2. Do you have or use a mobile phone?

[ ] Yes [ ] No

3. Do you have a bank account?

Yes [ ] No [ ]

4. Are you subscribed to mobile banking service?

Yes [ ] No, not interested [ ]

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

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

…...

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

Yes [ ] No [ ]

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

……

……

……

7. Is the use of Mobile banking useful?

Yes [ ] No [ ]

If No, why not?

……

……

8. If you do not use mobile banking, do you plan on using it in the future?

Yes [ ] No [ ]

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

Yes [ ] No [ ]

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

.....

.....

.....

Section B: Five-point Likert scale questionnaire

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

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
10	I think that interaction with mobile banking does not require a lot of mental effort.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
11	I think that using mobile banking would enable me to accomplish my tasks much quicker	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
12	I think that using mobile banking would make it easier for me to carry out my tasks	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
13	I think that mobile banking services are useful	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
14	Overall I think mobile technology is advantageous	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

15	I think that interaction with mobile banking does not require a lot of mental effort	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
16	Mobile banking may not perform well because of network problems	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
17	Mobile banking may not perform well and process payments correctly	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
18	I think that it is easy to use mobile banking to accomplish my banking tasks.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
19	When transaction errors occur, I worry that I cannot get compensation from banks.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
20	It would take me lots of time to learn how to use mobile banking services.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
21	I would not feel totally safe providing personal privacy Information over mobile banking.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
22	I think that learning to use mobile banking would be easy.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
23	When transferring money through mobile banking, I am afraid that I will lose money due to careless mistakes such as wrong input of account number and wrong input of the amount of money.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
24	I believe banks are trustworthy.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
25	I'm worried about use mobile banking because other people may be able to access my account.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
26	I think the transaction fee (bank charges) is expensive to use	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

27	I would not feel secure sending sensitive information across mobile Banking.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
28	I think mobile banking is expensive.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
29	The cost of subscription is high	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
30	The service is preferably for High class of people and educated.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
31	It is easy to use and learn how to use Mobile banking system	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
32	If I lose the mobile phone as a mobile banking user I will lose my money as well.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
33	It requires sufficient skills to operate on Mobile banking platform	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

Appendix II: List of Commercial Banks in Kenya

1	African Banking Corporation.
2	Bank of Baroda Kenya Ltd.
3	Bank Of India (K) Ltd.
4	Barclays Bank of Kenya Limited.
5	Bank of Africa.
6	CFC Stanbic Bank Limited.
7	Charterhouse bank Ltd
8	Chase Bank (K) Limited.
9	City Finance Bank limited.
10	Commercial Bank of Africa Ltd.
11	Consolidated bank of Kenya Ltd.
12	Co-operative Bank of Kenya Ltd.
13	Credit Bank Ltd.
14	Development Bank of Kenya Ltd.
15	Diamond Trust Bank of Kenya.
16	Dubai Bank Ltd.
17	Equatorial Commercial Bank Ltd.
18	Equity Bank
19	Ecobank Ltd.
20	Family Bank Ltd.
21	Fidelity Commercial bank Ltd.
22	Fina Bank Ltd.
23	First Community Bank Ltd.
24	Giro Commercial Bank.
25	Guardian Bank.

26	Gulf African Bank Ltd.
27	Housing Finance Ltd.
28	Habib Bank A.G. Zurich.
29	Habib Bank Limited.
30	Imperial Bank Limited.
31	Investments & Mortgages (I&M) Bank.
32	Kenya Commercial bank Ltd.
33	K- Rep Bank.
34	Middle east Bank Kenya Ltd.
35	National Bank of Kenya.
36	National Industrial Credit Bank.
37	Oriental Commercial Bank
38	Paramount – Universal Bank Ltd.
39	Prime Bank Limited.
40	Prime Capital and Credit Finance Ltd.
41	Savings and Loan (K) Ltd.
42	Southern Credit Banking Corporation.
43	Standard Chartered Bank (K) Ltd.

Appendix II: List of Sampled Commercial Banks

1	Bank of Africa.
2	Barclays Bank of Kenya Limited.
3	CFC Stanbic Bank Limited.
4	Commercial Bank of Africa Ltd.
5	Consolidated bank of Kenya Ltd.
6	Co-operative Bank of Kenya Ltd.
7	Ecobank Ltd.
8	Equity Bank
9	Family Bank Ltd.
10	Investments & Mortgages (I&M) Bank.
11	Kenya Commercial bank Ltd.
12	National Bank of Kenya.