FACTORS AFFECTING CUSTOMERS' USE OF INFORMATION AND COMMUNICATION TECHNOLOGY IN THE BANKING INDUSTRY IN KENYA. A CASE OF KENYA COMMERCIAL BANK NYERI, KENYA

BY

GRACE MWIHAKI MUTURI

A RESEARCH PROJECT REPORT SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF ARTS IN PROJECT PLANNING AND MANAGEMENT OF THE UNIVERSITY OF NAIROBI.

2013

DECLARATION

I the undersigned declare that this is my original work and has not been presented in any other university or college for examination purpose.

Signature…………………………........   **Date..**

Grace Mwihaki Muturi

 L50/74551/2012

This research project report is submitted for examination with my approval as the University

Supervisor.

Signature ………………….......   **Date………………**

Dr. Harriet Kidombo

College of Education and External Studies

School of Continuing and Distance Education

University of Nairobi

DEDICATION

This research project is dedicated to my loving family Mr and Mrs Muturi who went out of their way to sacrifice a lot of funds to see me through my entire course and research work. You have been a source of strength, support and encouragement.

ACKNOWLEDGEMENT

I wish to take this opportunity to first and foremost acknowledge the entire University of Nairobi for giving me an opportunity to undertake my research in the institution. I also wish to acknowledge my lecturers all through my course work and in particular my project supervisor Dr Harriet Kidombo for her immense contribution in checking my work and making corrections. Am particularly indebted to her support by availing at my disposal all the information relevant to this research project. Meeting you was indeed a true experience.

I also wish to acknowledge the academic and administrative staff of the Nyeri Extra Mural Centre of the University of Nairobi for their unfailing cooperation and support. Further, I acknowledge my colleagues in the Master of Arts Project Planning and Management class with whom I have been privileged to work and discuss with during this programme. They have been of great support all through the course, demonstrating great dedication to teamwork, ever ready to share with me their deepest academic thoughts and never tiring to encourage me to press on with hard work

Last but not least, I wish to recognize the contribution, assistance and encouragement of my colleagues at work all through the course.

TABLE OF CONTENTS

Page

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS AND ACRONYMS

ICT   Information and Communication Technology

ATM   Automated Teller Machine

KCB   Kenya Commercial Bank

IT   Information Technology

INFODEV   Information for Development Program

MIS   Management of Information System

CCTV   Closed-Circuit Television

MOEST   Ministry of Education Science and Technology

UNESCO   United Nations Education, Scientific and Cultural Organisation

GOK   Government of Kenya

ABSTRACT

In Kenya Information and communication technology adoption has been a slow process due to lack of proper national policies that ensure quick adoption. Banking industry for instance has seen a gradual and faster growth in terms of ICT structure and IT platform. However, this investment in new ICT systems and new technologies has not been well accepted by the end users; the customer who still believe in the older slower ways of banking as compared to the new banking systems that are faster and cheaper. This study therefore sought to investigate the factors that affect ICT use by customers in the banking industry with specific reference to Kenya Commercial Bank Nyeri, Kenya. The study was guided by the following objectives; To examine how customers' demographic characteristics influence their use of ICT, to find out the influence of education on ICT use, to assess the influence of security concerns on customers' use of ICT and to determine the influence of system quality on customers' use of ICT.This study employed a descriptive survey research design using structured questionnaires to gather data from the respondents. This research targeted a population of 23,437 Kenya Commercial Bank Nyeri, customers. A sample size of 204 customers was selected using simple random sampling for analysis from this population. The data collected was analyzed by use of descriptive statistics. The study also used Pearson's product moment correlation to test the relationship between the variables under study. The findings were presented in terms of tables. The findings concluded that gender had no influence on the use of ICT; there was a positive relationship between the age of the respondents and use of ICT. Education level, security fears and systems quality had a positive influence on the use of ICT The researcher recommends that banks should strive to educate their customers on the available technological advances and how to use them. Banks need to increase the security systems so as to minimize thefts and fraud. The banks also need to invest heavily on modern technology that is user friendly, accessible and convenient to the needs of the customer. The findings will be of use to the Ministry on Information and Communication, the Government, Banking sector, Kenya Commercial Bank management and the customers in general

CHAPTER ONE
INTRODUCTION

1.1 Background of the study

Generally in today's world, technology has taken a wide lead in the operation of businesses and according to Tavares, (2000) information and communication technology (ICT) has made the world one global village. ICT (information and communication technology - or technologies) is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems as well as the various services and applications associated with them, such as videoconferencing and distance learning.

According to the European Commission, the importance of ICT lies less in the technology itself than in its ability to create greater access to information and communication in underserved populations. Most of the businesses carried out rely their operations on new ways and ideas of science that are mushrooming in the world of information technology (IT). This is due to the fact that technology comes into existence due to various combination of knowledge, information and ideas (Murungi, 2003). Today's modern customer is informed and demands better services that if not offered to them they would easily walk out into the competition. This has necessitated organizations especially banks to install new information and communication technology that would speed up service and improve efficiency in operations with the aim of giving better services while at the same time increasing revenues. However this noble ides has received a lot of opposition from end users; the customers hence leading to slow rate of adoption.

Information and communication technology has played a significant role in banking over the years. In fact ICT has made the banking industry more competitive. ICT allows the banks to cater to the needs of customers by strengthening their internal control systems which are then backed by effective communications mechanisms. Widespread use of ATMs, Internet banking, mobile banking, 24/7 services, plus the ability to offer an expanded portfolio of products and services have enabled banks to improve their service to customers. ATMs were one of the first significant improvements in technology as they gave banking customers greater access to their

money. Now they no longer have to queue up in banks to obtain their money, and could do so at whatever time of day they desire as cash machines are available 24 hours a day, seven days a week. The rise of Internet and mobile banking has made banking even more convenient. Customers can now check their balance and pay bills online without having to leave the comfort of their own homes. Customers can also take an overdraft, apply for loans and credit cards and access a number of pages offering advice on savings and protecting you from card fraud. It also enables customers to keep a real-time track on their finances and enables banks to offer services which can help customers to manage their money and see more clearly what their incomes and outgoings are. Mobile banking enables you to talk to an advisor and resolve any urgent issues in a quick and efficient manner. Banks have taken advantage of ICT developments by offering more products, such as online savings accounts. They can also implement offers exclusively for their online customers, offering in some cases better deals on insurance and credit cards compared to those who bank in branch.

In the past, the main concern of banking was the acceptance of deposits from the customers, the lending of surplus of deposited money to suitable customers who wished to borrow and transmission of funds. In the recent years, competition has increased due to many new entrants in the banking industry with even the mobile service providers e.g. Mpesa offering money transfer services and this has pushed banks to provide a wide range of services to satisfy the financial and non financial needs to all types of customers from the smallest account holder to the largest company and in some cases non customers (Jeevitha, 2007)As the number of years increase in the business environment, more challenges increase rapidly in the financial services market thus inserting more pressure on banks to grow and make use of alternative channels with a view of attracting more customers, improving their perceptions and encouraging loyalty.

This fact is supported by earlier researchers and according to Bauer, (2005) and Parasuraman, (2001) the changing business environment has forced banks to look for other channels of diversification to increase revenues. ICT has made the banking sector more competitive because of the advancements of information and communication technologies. It allows the banks to effectively cater to the needs of

the consumers by strengthening internal control systems which are backed by the effective communications mechanisms (Baronj, 2007).The technology has also resulted into the wide spread use of smart cards, ATMs, mobile banking and expanded portfolio of products and services enabling banks to serve their customers better.

In Kenya, banking started in the year 1896 with the national bank of India opening its first branch. Standard chartered bank opened its first branches in Mombasa and Nairobi in January 1911. The Kenya Commercial Bank was established in 1958 with the Grind lays bank of Britain merging with the national bank of India. The co-operative bank of Kenya was established in 1965 for the express purpose of providing financial services to the co-operatives. Three years later, National Bank of Kenya (NBK) was incorporated (Ojung'a, 2005).Most banks in Kenya especially KCB have embraced the use of technology in offering their services due to the mere fact that by using technology in offering services they are able to meet the quality factors that are highly important to the consumers; of these qualities include speed and efficiency in service delivery (Bateson, 1997).

In Kenya, KCB has continued to grow and has been included in the Nairobi Stock Exchange (NSE) where it is listed as a commercial bank. KCB remains the largest bank in eastern Africa, with the largest Asset base and most profitable bank in the region. It operates in Kenya, Uganda, Tanzania, Southern Sudan, Rwanda and recently, Burundi. The bank is credited to taking banking services to the people through its accessible, affordable and flexible service provision. With this growth over time, there is need to service customers efficiently so that they can be retained or they move to other banks who are the biggest threat to KCB.Some of the services that are offered to customers with the assistance of this readily available technology includes mobile banking, ATM services, e-banking, Agent banking, RTGS, Swifts and many more. All these are used on the ICT platform.

This new technology is familiar to staff but on the contrary, the customers who are supposed to be assisted with these new developments either do not understand it fully or are not aware of the benefits. This has created resistance and hence the slow rate of adoption of ICT in KCB.

1.2 Statement of the problem

There are very few studies about ICT adoption in developing countries (Schmid et al 2001). In Kenya for instance there has been substantial growth in the IT sector which has strengthened issues of communication for development. But there have been drawbacks in terms of technology literacy and accessibility (MOEST, 2005).Only a small proportion of the population has the knowledge and ability to use computers and other newer technologies. Research has revealed that the role of ICT in improving the lives of people cannot be under estimated(Langmia,2005).For example, the growth of mobile banking in Kenya such as M-pesa ,Yu-cash and Zap by mobile service providers has made people who do not have access to traditional banks to undertake money transfer easily quickly and safely. Innovations such as internet and cell phone have made previously disenfranchised population have a voice.

In spite of the accelerated application of the information and communication technology in the banking industry, the level of adoption by the end users-customers has not been that impressive especially in the developing countries (Mugambi, 2006). Little attention has been given to the major factors that could be hindering the adoption of technology, not only in rural but urban areas.

Pinsonneault and Kraemer, (1993) have categorized internal and external barriers that hinder the adoption of ICT. The internal barriers include; owner manager characteristics, cost and return on investment, and external barriers include; infrastructure, social, cultural, political, legal and regulatory. Panagariya, (2000) found that one of the major factors inhibiting ICT diffusion and intense utilization is poor physical infrastructure. In developing countries some of the ICT adoption challenges include legal and regulatory issues, weak ICT strategies, excessive reliance on foreign technology and ongoing weaknesses in ICT implementation (Thong and Yap1995).Sauyan, (2007) carried out a study focusing on the emergence of technology in banking industry in Kenya. She came up with the conclusion that technological changing trends have influenced the use of technology in the banking sector due to their efficiency and effectiveness. Despite the fact that Sauyan and other researchers have explored some of the factors that influence use of technology in the

banking industry, there is still a gap in terms of the extent to which the awareness level can influence the use of technology; customer based security concerns, level of education and the general perceptions that the customers have about use of ICT in accessing banking services.

Some of the reviewed studies like Milton, (2003) and wanders, (2005) appeared to have been limited in scope in the sense that they laid much focus on use of technology with reference to people of certain age bracket (Data, 2010).Others studies have been conducted in Europe like Funnish, (2006) and Asia by Purash, (2007) where the use of technology is at a higher level as compared to developing countries like Kenya.

KCB for instance is known for lengthy queues of customers despite the heavy ICT investment the bank has lain to improve the services. This is mainly caused by continued trust in older ways of banking that entails going to the bank to transact despite the new service channels that have been invented based on the ICT platform. This in turn slows down the speed of service delivery to the customers given the ratio of staff to the customers they serve. This is a clear indication that customers are not aware of the different channels of services like the ATMs, mobile banking services and agent banking among others. It therefore implies that KCB has to rethink its strategy and come up with a way of decongesting their banking halls otherwise they will lose their customers to the competitors in the industry.
Following the foregoing discussion, there was need to examine the factors affecting the use of technology in selected KCB branches especially in the major towns in Kenya and what can be done to increase the rate of use of ICT to the customers so that the bank benefits from full adoption of ICT.

1.3 Purpose of the Study

The purpose of this study was to investigate the factors affecting customers' use of information and communication technology in the banking industry in Kenya. A case of Kenya Commercial Bank Nyeri, Kenya.

1.4 Research objectives

Objectives in research studies refer to specific aspects of the phenomenon under study that the researcher desires to bring out at the end of the research study. The objectives of the study were;

1. 1. To examine how customers' demographic characteristics influence their use of ICT in Kenya Commercial Bank Nyeri, Kenya.
2. To find out the influence of education on ICT use in Kenya Commercial Nyeri, Kenya
3. To assess the influence of security concerns on customers' use of ICT in Kenya Commercial Bank Nyeri, Kenya
4. To determine the influence of system quality on customers' use of ICT in Kenya Commercial Bank Nyeri, Kenya.

1.5 Research questions

The study was guided by the following research questions;

1. What influence do customers' demographic characteristics have on the use of ICT in Kenya Commercial Bank Nyeri, Kenya?
2. What is the influence of education on the use of ICT in Kenya Commercial Bank Nyeri, Kenya?
3. How do security concerns influence the use of ICT in Kenya Commercial Bank Nyeri, Kenya?
4. How does system quality influence use of ICT in Kenya Commercial Bank Nyeri, Kenya?

1.6 Significance of the study

This study was expected to be of great significance to the following stakeholders: Banking sector, KCB management and Customers in general. The information gathered through this research will provide useful data to the banking sector and other organizations in terms of empowering employees through positive application of

technology in addressing the key issues that affect effective use of technology.KCB management: the findings of this study will shed more light on sound strategies that KCB can put in place to increase the level of customers' use of technology while accessing banking services. Customers: This study will also enable the customers to be aware of the various banking channels to migrate to and enhance quick banking services through the use of alternative channels. The study will contribute to the knowledge base that will provide guidance on ways to enhance technology integration and adoption in the banking industry. Indentifying the fundamental factors may assist customers to overcome these barriers and become successful technology adopters.

1.7 Delimitations of the study

This study sought to examine the factors that affect customers' use of technology as a strategic tool in the banking industry. Only Kenya Commercial Bank Nyeri was considered. A sample of 204 customers was used. Geographically, the study targeted a population of 23,437 Nyeri Kenya Commercial Bank branch customers which is situated in Nyeri Town, Nyeri County, Kenya.

1.8 Limitations of the Study

Some participants were difficult to contact or too busy to participate in the study. Some interviewees were not willing to share information on ICT use while others were not familiar with ICT.

1.9 Assumptions of the Study

The researcher assumed that the data obtained from the respondents was accurate, correct and valid and that the respondents were honest in giving responses through the questionnaires. The researcher also assumed that the variables under study will not change during the entire research period

1.10 Operational Definition of Significant Terms

Customer Demographic characteristics: Parasuraman,(2001) defines customer characteristics as the customers' information that governs how they behave. In this study customer characteristics will include demographic features of gender, age, and place of residence and the customers' level of awareness

System Quality: System quality refers to the quality of system that produces information output, which can be measured in terms of reliability, accessibility, integration and response time (Thorp, 2008).The researcher will use this terminology to mean the quality of services rendered by ICT products in Kenyan banks, both in terms of speed, accessibility and reliability.

Information & Communication Technology (ICT): ICT may be defined as the convergence of computer hardware and software and telecommunications technology (Kandiri, 2006). In this study, it will be used to refer to the advanced tools and equipments that are used by banks to deliver their services like ATM, Mobile banking, internet banking and many more

Customers Use of ICT: This refers to the rate at which a customer uses an ICT product or channel. The researcher intends to measure this by examining the extent to which an identified ICT based service channel or product is used by customers (Thorp & Henry, 2008).The customers in the study will be categorized as corporate customers and personal customers. Corporate customers will cover among others; registered companies, partnership business and registered organization, schools. Personal customers will include individual customers.

Security: Security will be used in this study to mean the safety of the customer's money or data that are entrusted under the care of banks (Vensign, 2007).In this study the researcher will try and investigate the security measures that are put in the ICT service channels offered by banks and find out whether any fears of lack of proper security indeed affects the customers use of any particular channel.

Education: Education refers to the level of literacy of an individual that governs an individual's ways of reasoning and understanding (Czaja, 2006).This study will try to evaluate the effects of level of education on a customer's adoption of ICT. The researcher will try to compare from the data that will be collected whether education actually affects customer's adoption of ICT in Kenyan banks.

1.11 Organization of the Study

This study was organized into five chapters, with chapter one containing the introduction of the study. It gave the background of the study, statement of the problem, objectives of the study the purpose of the study, research questions, significance of the study, limitations of the study, delimitations of the study, and basic assumptions of the study and definition of significant terms. Chapter two reviewed the literature based on the objectives of the study and further looked at the conceptual framework and described the research gaps. Chapter three covered the research methodology, described the research design, target population, sampling procedure, tools and techniques of data collection, pilot-testing, methods of data analysis and ethical considerations. Chapter four focused on data analysis interpretation and presentation while chapter five focused on summary of major findings from the results of the study, discussions and conclusions made from them. It also presented the recommendations made by the researcher in respect to purpose of the study which was to investigate the factors affecting customers' use of information and communication technology in the banking industry. The present era of information age requires individuals with ICT skills, who can contribute in the emerging global economy. The banking sector in Kenya has not fully embraced the use of ICT .ICT adoption demands that factors influencing ICT adoption be addressed before any attempt to its introduction. These include demographic characteristics, education level, security concerns and system quality.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter contains literature related to factors affecting customers' use of information and communication technology in the banking industry namely the demographic characteristics, level of education, security concerns and system quality. This chapter is divided into various parts namely: Banking and ICT, ICT Policies, Benefits of ICT, Factors that Affect Customers' Use of ICT and Theoretical Review.

2.2 ICT and Banking

Various published studies have been conducted in the field of customer's use of technology in banking industry. A study by Al-Ashban and Burney, (2001) examined customer adoption of mobile banking technology, which revealed that customers increasingly extend their use of mobile banking as their experience grows with the system. It also indicated that in general Saudi consumers' income levels and education play a vital role in their adoption and usage of mobile banking technology Earlier study by Sathye, (1999) examined adoption of Internet banking by Australian consumers which revealed that security concerns and lack of awareness about Internet banking and its benefits stood out as being the obstacles to the adoption of Internet technology in banking. To address these impediments the delivery of financial services over the Internet was made part of overall customer service and distribution strategy. Such measures helped in rapid migration of customers to Internet banking, resulting in considerable savings in operating costs for banks.

Laforet, (2005) also highlighted the issue of security and gender as some of the factors of concern in the use technology among consumers in China. This examined the demographic, attitudinal and behavioural characteristics of online and mobile bank users. The results showed Chinese online and mobile bank users were predominantly males, not necessarily young and highly educated, in contrast with the electronic bank users in the West. The issue of security was found to be the most

important factor that hindered Chinese consumer adoption of online banking. Main barriers to online banking were the perception of risks, computer and technological skills and Chinese traditional cash-carrying banking culture. The barriers to mobile banking adoption were lack of awareness and understanding of the benefits provided by mobile banking. Hwang, Ku, Yen and Cheng, (2004) conducted another study in Taiwan on critical factors influencing the adoption of data warehouse technology in domestic banks. The results revealed that factors such as support from the top management, systems of the bank, effect of champion, internal needs, and competitive pressure on quality would affect the adoption of data warehouse technology.

Technology in banking also encompasses mobile technology which renders services using the mobiles phones. Yang, (2005) conducted a study that employed the Technology Acceptance Model (TAM) to examine factors affecting Singaporeans' attitudes towards mobile technology and applications the study revealed that consumer perceived usefulness influenced their attitude towards using technology. The study also established that consumer innovativeness, past adoption behaviour; technology cluster adoption, age, and gender affect their adoption behaviour. Results further revealed that male respondents tended to perceive E-commerce favourably. Adoption behaviour appeared to be influenced majorly by age factor. Age factor has also been considered in other studies for instance, Morris and Venkatesh, (2000) examined age differences in individual adoption and sustained usage of technology in the workplace using the theory of planned behaviour.

Another study by Czaja, Charness, Fisk, Hertzog, Nair, Rogers and Shark, (2006) on Aging and Technology Enhancement examined the influence of age on the use of technology among community-dwelling adults The findings indicated that the older adults were less likely than younger adults to use technology in general which included computers and the World Wide Web. The results also indicated that computer anxiety, fluid intelligence, and crystallized intelligence were important predictors of the use of technology. The relationship between age and adoption of technology was mediated by cognitive abilities, computer self-efficacy, and computer anxiety.

2.3 ICT Policies

The point that future socio-economic development will need to embrace the use of ICT appears to be widely recognised by governments throughout Africa and is evidenced by the number of countries that have a national policy for ICT in place or under development (Farrell and Shafika, 2007). The policies vary in several ways. First, a few, often those that have been in place for sometime are more likely to focus on telecommunication technologies and their regulation and less on the importance of information technologies for development (Farrell and Shafika, 2007)

Government policies are essential to facilitate change. Policies enable the integration of appropriate forms of ICT into Education system (UNESCO, 2006) they are needed to bring out the benefits of information and communication technologies. Benefits of ICTs lie in the opportunities it offers developing countries to learn innovative and create ICT-based jobs, products and services (World Bank, 2003) the report further states that ICTs policies should be tailored to realize these opportunities and therefore assist individuals and organisations to full participate in and contribute to global information society.

The GOK, (2006) adopted and published a policy and strategy on information and communication technology. The aim was to improve the livelihoods of Kenyans by ensuring availability of accessible, efficient, reliable and affordable ICT services.

2.4 Benefits of ICT

There are many benefits that result from use of technology. It impacts on the economy, business, investment, on food security, on Poverty reduction, on productivity and competitiveness of African economies (Birungi and Musoke, 2004).

2.5 Factors Affecting Customers use of Information and Communication Technology

2.5.1Customers' Demographic characteristics and ICT use

Customers' Gender

Laforet, (2005) highlighted the issue of security and gender as some of the factors of concern in the use of technology among consumers in China. The study examined the demographic, attitudinal and behavioural characteristics of online and mobile bank users. The results showed Chinese online and mobile bank users were predominantly males, not necessarily young and highly educated, in contrast with the electronic bank users in the West.

Yang, (2005) conducted a study that employed the Technology Acceptance Model (TAM) to examine factors affecting Singaporeans' attitudes towards mobile technology and applications. The study revealed that consumer perceived usefulness influenced their attitude towards using technology. The study also established that consumer innovativeness, past adoption behaviour; technology cluster adoption, age, and gender affect their adoption behaviour. Results further revealed that male respondents tended to perceive E-commerce favourably.

Customers' Age

Age is an important variable that cannot be ignored in this study and which directly affects the adoption of ICT.Human beings learn new behaviours' as they grow older and according to Pinker, (2003) when a human being is born, the mind is a blank slate which can be written on anything but at some point in life, new behaviours' are difficult to learn because the mind has been conditioned to a certain way of doing things. At this point, in time, the human person will not be able to learn new behaviours' easily.

Adoption of behaviour appears to be influenced majorly by the age factor. Age factor has also been considered in other studies for instance, Morris and Venkatesh, (2000) examined age differences in individual adoption and sustained usage of technology in

the workplace using the theory of planned behaviour. The study established that young workers' technology usage decisions as compared to older workers were more strongly influenced by attitude towards using the technology.

Another study by Czaja, Charness, Fisk, Hertzog, Nair, Rogers and Shark, (2006) on Aging and Technology Enhancement examined the influence of age on the use of technology among community-dwelling adults. The findings indicated that the older adults were less likely than younger adults to use technology in general. The results also indicated that computer anxiety, fluid intelligence, and crystallized intelligence were important predictors of the use of technology. The relationship between age and adoption of technology was mediated by cognitive abilities, computer self-efficacy, and computer anxiety. Therefore the researchers will be interested in finding out the relationship between the willingness to use an ICT product and the ease of Using a particular ICT service channels

Customers' Level of awareness

Customer awareness can be defined as level of knowledge, experience and benefits of the technology used in the banking industry in relation to the customer. Customers make a choice of use of a given technology based on their own understanding and awareness of the technology, operation, costs, and benefits of using different technologies existing in the banking industry (Xue & Hitt, 2006). Earlier study by Sathye, (1999), examined adoption of Internet banking by Australian consumers.

The study findings revealed that security concerns and lack of awareness about Internet banking and its benefits stood out as being the obstacles to the adoption of Internet technology in banking. The study suggested that some of the ways to address these impediments included making delivery of financial services over the Internet to be a part of overall customer service and distribution strategy. Such measures could help in rapid migration of customers to Internet banking, resulting in considerable savings in operating costs for banks. Given that most financial institutions have made only limited efforts to influence the customers' choice of technology and the customers are assorted, this explains why one finds long queues of people in the banking area waiting to receive financial services.

Studies done by past researchers have revealed that the highest percentages of customers in the economy who carry out financial transactions are from the older generation in the society. These older customers have less experience or comfort level with technology-mediated service channels (Hitt & Bitner,2000);Curran,(2003); Gurau,(2002),Wang,(2003)).This makes them prefer the traditional banking system whereby one waits in queue for a service to be rendered e.g. in cash withdrawal or deposit. The proliferation of and rapid advances in technology based systems, especially those related to the internet are leading to fundamental changes in how financial institutions interact with customers.

Hwang, Ku, Yen and Cheng, (2004) conducted another study in Taiwan on critical factors influencing the adoption of data warehouse technology in domestic banks. The results revealed that factors such as support from the top management, size of the bank, effect of champion, internal needs, and competitive pressure would affect the adoption of data warehouse technology. Following this discussion it is important to get an in depth understanding of the effects of the level of awareness on the acceptance of use of ICT by the customers in the banking industry in Kenya

2.5.2 Customers' Level of Education

This is another important aspect that affects technology adoption. Educated people are well informed and in many occasions they take risks when the outcome is attractive. In this case, the outcome can be on maximizing on the time one has to achieve targets. A study by Al-Ashban and Burney, (2001) examined customer adoption of mobile banking technology which was a case of Saudi Arabian Banking Industry. The findings revealed that customers increasingly extend their use of mobile banking as their experience grows with the system it also indicated that in general Saudi consumers' income levels and education play a vital role in their adoption and usage of mobile banking technology

The level of education of an individual will affect the decision they make about embracing a given technology or not. However not every account holder in the bank has a prior knowledge of ICT and hence there is need to address the level of

knowledge in simple computer or ICT applications. This will enable banks to identify customers with serious needs and hence train them better in using a specific service channel. Embracing the use of technology will enable an individual to get effective and quick service which in most cases is not limited by time.

2.5.3 Customers' Security Concerns.

Security will be used in this study to mean the safety of the customer's money or property entrusted under the care of banks. It will also mean the safety involved in the use of the technology that the bank offers. Today's customers are increasingly more concerned about security and privacy issues when using a given channel of service.

According to Pavlou, (2001) security can also be defined as the perception by the customer that their information will not be viewed, stored or manipulated during transit and storage by inappropriate parties. Laforet, (2005), also highlighted the issue of security which was found to be the most important factor that hindered Chinese consumer adoption of online banking.
Main barriers to online banking were the perception of risks, computer and technological skills and Chinese traditional cash-carry banking culture. Security is therefore of prime importance to the customers towards any new technology that the bank offers them use.

For a customer to use a given technology rendered by banks, the individual needs to disclose all the information about him or her to the financial institution (warren and Brandeis, 1980).Most customers as a result of this tend to avoid channels that lead to them giving this information for fear that if the information gets to the wrong hands, it would result to a financial theft. Many customers fear to use technology in the bank due to reasons that the transaction conducted electronically is open to hackers and viruses, which are beyond their control or the bank's. This perceived risk is the major factor why customers tend to be reluctant to a new technology introduced by banks (Saya and Wolfe, 2007; Poltoglu, 2001).

All these factors stated herein are the major reasons why customers would tend to do things the traditional ways than adapt to a new way of doing things. In addition

security control of the sites where the customers carry out their financial transaction strongly influences the use of the online banking by customers. A lot of emphasis needs to be laid in handling security concerns when dealing with a particular ICT channel in the banking industry. This issue is a major concern of the unwillingness to accept adoption of a given alternative service stream. Security violation leads to various problems such as destruction of the operating systems and disruption of information access.

Many customers are not satisfied with the infrastructure of ICT platform systems in the bank. Customers associate ICT adoption with perceived risks that come with such service avenues e.g. the use of internet banking (Cunningham, 2003).Security issues that need to be addressed include; Perceived risks of using a service channel, Protection of Pins and passwords. Safety of location of service channel e.g. offsite automated teller machines

2.5.4 Information Communication and Technology System Quality

System quality is related to the quality of system that produces information output, which can be measured in terms of reliability, accessibility, integration, and response time (Nelson et al., 2005).
System reliability involves the consistency of performance and dependability .It means that the system can deliver the service exactly as the service provider puts it. This involves accuracy in billing and information.Accesibility on the other hand refers to the ability to use the system anytime anywhere without fail. One reason that makes customers shy away from an ICT service channel is the inaccessibility of it by returning error messages.

System responsiveness refers to the time a service channel takes to finish a transaction and the feedback. Response will also include the timeline within which information alerts are relayed to the customers. According to Davis, (1989), he did not include system characteristics into TAM model, but he suggested including judicious system characteristics singularly or jointly affects subsequent use and user satisfaction. Hence it can be assumed that system quality directly or indirectly through perceived

usefulness and perceived ease of use, positively affects user acceptance of online banking information systems

2.6 Theoretical Framework

A theory is a set of interrelated concepts, assumptions and generalizations that systematically describe and explain regularities of behavior. A theory therefore has principles, assumptions, generalizations, basic concepts and application (Dahrendorf, 1976).

This study was guided by several theories that relate to technology adoption.

2.6.1 Technology Acceptance Model

This is a theory that explains how users come to accept and use technology. The model suggests that when users are presented with new technology, a number of factors influence their decision about how and when they will use it, namely: Perceived usefulness (PU) and Perceived ease-of-use (PEOU). TAM suggests that users formulate a positive attitude towards any technology when they perceive the technology to be useful and easy to use (Davis, 1989).The Technology Acceptance Model (TAM) was developed b y Davis to explain technology-usage behaviour.

 The theoretical basis of the model was Fishbein and Ajzen's Theory of Reasoned Action (TRA). Both of these theories have strong behavioural elements as they assume that when someone forms an intention to act, they will do so without limitation. However, in real life situation, there will be many constraints that limit freedom to act (Bagozzi and Warshaw, 1992).

Several researchers have replicated Davis's original study to provide empirical evidence on the relationships that exists between perceived usefulness, perceived ease of use and system use Adams, Nelson and Todd, (1992); Hendrickson, Massey and Cronan, (1993); and Subramanian, (1994). The sum of these studies has confirmed the validity of the Davis' findings on the relationship that exists between the above mentioned factors. There is no doubt that TAM has emerged as one of the most influential models in this stream of research. The model represents an important theoretical contribution towards understanding use of technology and its acceptance.

However, this model with its original emphasis on the design of system characteristics fails to account for social influence in the adoption and utilization of new information technology systems (Mazhar, 2006). Perceived Usefulness (PU); Perceived usefulness defined as "the degree to which a person believes that using a particular system would enhance his/her job performance" (Davis, 1989).

According to TAM Perceived Usefulness is a significant factor that affects user acceptance of information system (Davis, 1889; Davis et al., 1989). Several researchers provide evidence of significant effect of PU on information system (IS) acceptance and usage (Davis, 1989; Pikkarainen et al., 2003; Wang et al., 2003). Hence online banking systems that users think are useful are more likely to be accepted by the users. Perceived Ease of Use (PEOU); Perceived ease of use is defined as "the degree to which a person believes that using a particular system would be free of efforts" (Davis, 1989). TAM posits that PEOU is an important factor that affect information system (IS) acceptance, either directly or indirectly through perceived usefulness (Davis et al., 1989). Venkatesh and Davis, (2000) found that PEOU have positive direct effect on user acceptance of IS. Thus, if online banking systems are easy to use they are more likely to be accepted by the intended users and if they are complicated to use customers tend to shy away from them.

This theory tends to explain how users tend to accept technology; it asserts that when users are presented with a new technology, number of factors influences their decision about how to use it. These factors include perceived usefulness and perceived ease of use. Customers who think that a specific technology is complicated will not accept it while those that think that the new technology is useful to them will accept it and use the service rendered. The researcher deems this theory useful for the study. This theory explains why customers crowd banking halls for services like cash deposit, cheque deposit which they can instead do at the ATM, or at the bank agents

2.6.2 Theory of Planned Behaviour

TPB posits that individual behaviour is driven by behavioural intentions where behavioural intentions are a function of an individual's attitude towards the behaviour, the subjective norms surrounding the performance of the behaviour, and the

individual's perception of the ease with which the behaviour can be performed (behavioural control).Attitude toward the behaviour is defined as the individual's positive or negative feelings about performing behaviour. It is determined through an assessment of one's beliefs regarding the consequences arising from behaviour and an evaluation of the desirability of these consequences.

Formally, overall attitude can be assessed as the sum of the individual consequence desirability assessments for all expected consequences of the behaviour (Eagly and Chaiken, 1993).Subjective norm is defined as an individual's perception of whether people important to the individual think the behaviour should be performed. The contribution of the opinion of any given referent is weighted by the motivation that an individual has to comply with the wishes of that referent. Hence, overall subjective norm can be expressed as the sum of the individual perception x motivation assessments for all relevant referents.

Behavioural control is defined as one's perception of the difficulty of performing behaviour. TPB views the control that people have over their behaviour as lying on a continuum from behaviours that are easily performed to those requiring considerable effort and resources. Although Ajzen suggested that the link between behaviour and behavioural control outlined in the model should be between behaviour and actual behavioural control rather than perceived behavioural control, the difficulty of assessing actual control has led to the use of perceived control as a proxy. In Kenya Commercial Bank for instance, this theory is applicable as most customers have negative behaviour towards using new technology. The theory postulates that it is an individual's behaviour, perception, and norms that govern who use technology. In Africa for instance there is a general perception that technology is for the whites and this negative perception affects the level of use of technology by customers in the banking sector.

2.6.3 Unified Theory of Acceptance and Use of Technology

This model was formulated by Venkatesh. The model aims to explain user intentions to use an information system and subsequent usage behaviour. The theory holds that

four key constructs, namely performance expectancy, effort expectancy, social influence, and facilitating conditions are direct determinants of usage intention and behaviour. Gender, age, experience, and voluntariness of use are posited to mediate the impact of the four key constructs on usage intention and behaviour.

This model has been found applicable. For instance, Koivimaki, Ristola, and Kesti, (2008) applied the model to study the perceptions of 24 individuals in northern Finland toward mobile services and technology and found that time spent using the devices did not affect consumer perceptions, but familiarity with the devices and user skills did have an impact. UTAUT was introduced in order to fill the missing gaps in TAM, The UTAUT model is a well-meaning and thoughtful presentation, but it presents so many constructs that easily render it chaotic (Bagozzi, 2007). To this end, Bagozzi suggested a more direct model that can succinctly explain decision making when adopting any technology.

UTAUT as a Subjective norm is defined as an individual's perception on whether people important to an individual think the behaviour should be performed. The contribution of the opinion of any given referent is weighted by the motivation that an individual has to comply with the wishes of that referent. Hence, overall subjective norm can be expressed as the sum of the individual perceptions motivation assessments for all relevant referents. Behavioural control is defined as one's perception of the difficulty of performing behaviour.

TPB views the control that people have over their behaviour as lying on a continuum from behaviours that are easily performed to those requiring considerable effort and resources. Although Ajzen suggested that the link between behaviour and behavioural control outlined in the model should be between behaviour and actual behavioural control rather than perceived behavioural control, the difficulty of assessing actual control has led to the use of perceived control as a proxy. The researcher therefore believes that since this model was tried in a developed country and worked, then it can also be applied as well in the banking industry in Kenya.

2.6.4 The Theory of Reasoned Action

Ajzen, (1988) formulated in 1980 the theory of reasoned action (TRA). This resulted from attitude research from the Expectancy. He formulated the TRA after trying to estimate the discrepancy between attitude and behaviour. This TRA was related to voluntary behaviour. Later on behaviour appeared not to be 100% voluntary and under control, this resulted in the addition of perceived behavioural control. With this addition the theory was called the theory of planned behaviour (TPB).

The theory of planned behaviour predicts deliberate behaviour, because behaviour can be deliberate or planned (Todd, 1992).Theory of Reasoned Action suggests that a person's behaviour is determined by his/her intention to perform the behaviour and that this intention is, in turn, a function of his/her attitude toward the behaviour and his/her subjective norm. The best predictor of behaviour is intention. Intention is the cognitive representation of a person's readiness to perform a given behaviour, and it is considered to be the immediate antecedent of behaviour. This intention is determined by three things: their attitude toward the specific behaviour, their subjective norms and then perceived behavioural control.

The theory of planned behaviour holds that only specific attitudes toward the behaviour in question can be expected to predict that behaviour. For instance, one can embrace usage of technology because of its convenience sake to the user. In addition to measuring attitudes towards the behaviour, we also need to measure people's subjective norms, their beliefs about how people they care about will view the behaviour in question. To predict someone's intentions, knowing these beliefs can be as important as knowing the person's attitudes.

TRA and TAM, both of which have strong behavioural elements, assume that when someone forms an intention to act, that they will be free to act without limitation. In practice constraints such as limited ability, time, environmental or organisational limits, and unconscious habits will limit the freedom to act (Todd, 1992).The theory of reasoned action (TRA) operates on perceived behavioural control which influences intentions. Perceived behavioural control refers to people's perceptions of their ability to perform a given behaviour. These predictors lead to intention. A general rule suggests that the more favourable the attitude and the subjective norm, and the greater the perceived control the stronger should the person's intention to perform the

behaviour in question (Ajzen, 1988). As a result of this the researcher agrees that this theory is applicable in terms of the customers' acceptance of ICT.

Generally bank customers have not fully accepted the use of mobile banking services for the belief that it is not safe and or they keep forgetting their passwords which is a behaviour developed by their negative perception about the mobile banking services

2.7 Conceptual Framework

Independent Varibles   **Dependent Variable**

Customers' Demographic Characteristics	Moderating variable
• Age	• Government policies
• Gender	
• Geographical residential area	• Weather

Level of Education	ICT USE BY BANK CUSTOMERS
• Primary education	• ATM use
• Secondary Education	• Agent banking use
• University Education	• Mobile banking use
• Computer skills	• Internet banking use
• Tertiary Education	• E statement use

Security Concerns
• Perceived risks
• Protection of pins and passwords
• Safety of location of service channel

	Intervening variables
• Culture	
• Attitude	

System Quality
• Accessibility
• Reliability
• Response

Figure 2.1 Conceptual Framework

The conceptual framework depicts the relationship between the independent, dependent and moderating variables.

Figure 2.1 shows that the study considered the dependent variable to be ICT use by bank customers which was influenced by four independent variables which are; Customers' demographic characteristics, system quality, Level of education and Security Concerns. It was expected that the afore mentioned variables will greatly affect ICT use or lack of ICT use in the banking industry.

There are government policies on ICT use in Kenya which the study considered as moderating variables as they may mediate ICT use by bank customers.

2.8 Summary

From the review of literature it was evident that there are a number of issues that have not been clearly addressed. For instance researchers Al-Ashban and Burne,(2001); Milind Sathye,(1999);(Hwang et al 2004) concentrated on adoption of technology in banking institutions but largely ignored customer use of these technologies in accessing quick and efficient service. Secondly most of the studies that have been conducted are not local but have been done outside Africa. For example a study by Sathye, (1999) on internet banking was conducted in Australia. Wang, Ku, Yen and Cheng, (2004) conducted another study on adoption of technology in warehouse in Taiwan. There were scanty studies that have been done with reference to Kenya. Thirdly, while some of the studies actually addressed the key areas of concern, their scope appeared limited in terms of a single factor like Age. Therefore there was need to examine the factors that affected customer use of technology in general while focusing on a particular bank; Kenya Commercial Bank, Nyeri.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter explores the methodology that was used to carry out this research. Research methodology is defined as an operational framework within which facts are placed such that their meaning is seen more clearly. This chapter presented details of the research design, target population, sample and sampling procedures, description of research instruments, validity and reliability of instruments, data collection procedures, data analysis procedures and the ethical considerations.

3.2 Research Design

This study employed a descriptive survey research design. This design was adopted for the following reasons: it is useful in describing the characteristics of a large population i.e. their values, attitudes, perceptions and behaviours'; explaining or exploring the existing status of two or more variables at a given point, makes use of a large sample thus making the results statistically significant. In this research both quantitative and qualitative research paradigms were used. This allowed the researcher to collect both numerical or quantifiable data as well as qualitative data. Using both types of research helped to avoid bias associated with either as they act as a check on each other that is the subjectivity associated with qualitative research is minimized by the objectivity of quantitative research and findings derived from one approach validates the other (Mugenda, O.M.and Mugenda A.G, 1999) The design used structured questionnaires to obtain primary data which were self administered to ensure a high return rate. Secondary data was acquired from internet, journals and relevant books.

3.3 Target Population

A population is any set of persons or objects that possesses at least one common characteristic (Barton, 2001). The target population is that which a researcher wants to

generalize the results of the study (Mugenda and Mugenda, 2003).This consisted of 23,437 Kenya Commercial Bank, Nyeri customers (KCB, Financial Statements Report, 2012)

3.4 Sampling Procedure and Sample size

3.4.1 Sampling Procedure

Sampling has been described by Cooper et al., (2003) as the procedure by which some elements of a given population are selected as representative of the entire population. The primary purpose of sampling is that by selecting some elements of a population, a conclusion on the entire population can be drawn.

Simple Random sampling design was employed to select the required sample. Simple random sampling was used to ensure that all subjects of the sample size had an equal chance of being selected. Any customer who walked into the banking hall between 9am to 1pm was interviewed; to avoid repetition the customers were asked if they had already filled the questionnaires.

3.4.2 Sample Size

A sample is a subject of a particular population according to Mugenda, O.M.and Mugenda A.G, (1999) According to Yamane, (1967) the recommended formula for calculating the sample size is as follows:

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

Where n = the desired sample size

N = the population size. In this case 23,437

e = level of precision. In this case 0.07

$$n = \frac{23,437}{1 + 23,437(0.07)^2}$$

$$= 204.32$$

The figure will be rounded off to 204 respondents.

3.5 Data Collection Instruments and Techniques

Questionnaires (structured) were used to collect primary data from the customers. These types of items refer to questions which are accompanied by a list of all possible alternatives from which the respondents select the answer that best describes their situation. Use of structured questionnaires was prompted by the fact that they are easier to analyze as they are in an immediate usable form, less time consuming for both the researcher and the participants and can reach a huge sample (Owens, 2002). The questionnaire was divided into various sections. Section A covered the background information of the respondents. These included sex, age, education level and Place of Residence. Section B analysed ICT use by customers; Section C solicited data on the extent to which customers' level of awareness influenced ICT use, Section D addressed customers' security Concerns while Section E looked at the influence of system quality on ICT use. The questionnaires consisted of open ended and closed ended items designed as likert-type statements to which the respondents responded with a rating of 1-5 (5 indicating strongly agree, 4 indicating agree, 3 indicating undecided, 2 indicating disagree and 1 indicating strongly disagree

3.5.1 Pilot Study

Before administering the instruments to the sample representing the target population, a pilot study was conducted at Kenya Commercial Bank, Karatina with the aim of testing the instruments. The pilot study was carried out on 20 respondents who represent 10% of the sample size.

3.5.2 Instrument validity

The validity of an instrument is the extent to which it does measure what it is supposed to measure. According to Mugenda and Mugenda, (1999) validity is the accuracy and meaningfulness of inferences, which are based on the research results. It is the degree to which results obtained from the analysis of the data actually represent the variables of the study. The instruments were validated in terms of content validity. The content related technique measured the degree to which the question items reflected the specific objectives. The validation of the questionnaires was done mainly by the University Supervisor for their expert opinion, further validation was carried out by peers and experienced researchers. The researcher used different sources of data and approaches to strengthen the validity of the results.

3.5.3 Instrument Reliability

Reliability is the ability of a research instrument to consistently measure characteristics of interest over time. It is the degree to which a research instrument yields consistent results or data after repeated trials, (Mugenda and Mugenda, 1999). To test the reliability of the research instruments, test re-test technique was used. Pilot testing of the research instruments was done at Kenya Commercial Bank, Karatina which was not part of the sample. The process was repeated after two weeks to examine the consistency of the responses between the two tests. The reliability of the instruments, namely the questionnaires was computed to determine Cronbach's reliability coefficient which was 0.84.This indicated that the questionnaires were reliable in collecting data for the variables understudy

3.6 Data Collection Procedure

Prior to data collection the researcher obtained a permit to carry out the research from the National commission for science Technology and innovation, which was presented to the Branch Manager at Kenya Commercial Bank, District Commissioner and District Education Officer, Nyeri District before embarking on the study.This permit was expected to help in seeking authorization .The researcher carried out the

data collection process by self administering the questionnaires with the help of trained research assistants**.**

3.7 Data Analysis Procedure

Descriptive analysis was used to analyze the data gathered from each variable. The researcher edited the raw data to ensure it was free from inconsistencies and incompleteness. A coding scheme was then developed to create codes and categories for the responses, the data was coded manually and prepared for analysis using the Statistical Package for Social Science version 2.00 (Kombo et al., 2006).Means ,percentages and standard deviations of the questionnaire items were calculated .The results were presented using tables and percentages.

3.8 Ethical Considerations

The researcher obtained a permit to carry out the research from the National commission for science Technology and innovation, which was presented to the Branch Manager at Kenya Commercial Bank, District Commissioner and District Education Officer, Nyeri District before embarking on the study. An informed consent was sought from all the respondents as the researcher gave full and detailed explanation of the study. The respondents were made aware of voluntary participation and the information collected was made confidential and used for the purposes of the study only. No threats or victimisations were used if the respondents declined to participate or withdrew from the study. The researcher ensured that the three principles of ethics were observed. These included respect, beneficence and justice. Respect and protection of autonomy, rights and dignity of the participants was guaranteed throughout the research period. The conduct of the research was fair, honest and transparent and the researcher presented the findings honestly and objectively

3.9 OPERATIONALIZATION OF VARIABLES

Objectives	Variable	Indicator	Measurement	Measurement Scale	Tools of Data Analysis	Method of data analysis
To examine how customers' demographic characteristics influences their use of ICT	Independent variable: Customers' demographic characteristics	-Age -Gender -Geographical residential area	-Number of people in an age bracket -Number of males and females - Number of people residing in the area of study	- nominal -Ratio -interval	Percentages Frequencies	Descriptive
To find out the influence of education on ICT use	Independent variable: Level of education	-Primary Education -Secondary Education -University Education -Computer Skills -Tertiary Education	-Number of people with the various categories of formal education - Certificates attained	-Ordinal -Ratio	Percentages Frequencies	Descriptive
To assess the influence of security concerns on	Independent variable: Security	-Perceived risks -Protection of pins and passwords	-Measures put in place to combat risks	-Ratio _Nominal	Mean Standard deviation	Descriptive

customers' use of ICT	concerns	-Safety of location of service channel	-Adherence to regulations on issuing pins and passwords -Location of service channels			
To determine the influence of system quality on customers' use of ICT	Independent variable: marketing strategies	-Reliability -Accessibility -Response	-Rate of Reliability of the ICT channel - Rate of access of ICT channels -Rate of response of the ICT channels	-Ratio -Nominal	Mean Standard deviation	Descriptive
To determine factors affecting ICT use by bank customers	Dependent variable: ICT use by bank customers	-ATM use - Agent banking use -Mobile banking use -Internet banking use -E statement use	-Number of people using ATM, agent banking, mobile banking, Internet banking and E statement use	-Ratio -Nominal	Mean Standard deviation	Descriptive

3.10 Summary

The study utilized descriptive survey design with qualitative and quantitative approach. The data was collected by use of structured questionnaires. A target population of 204 respondents was used. Simple random sampling was used to select the participants who took part in the study. Data from each variable was coded and analyzed by use of Statistical Package for Social Science. Descriptive analysis was used to analyze data gathered from each variable. The researcher sought informed consent from the respondents before collecting data and explained to them that all information given would remain confidential and be used for academic purposes only

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter focused on data analysis, interpretation and presentation. The purpose of this study was to investigate the factors affecting customers' use of information and communication technology in the banking industry in Kenya. The objectives of the study were to examine how customers' demographic characteristics, education on ICT, security concerns and influence of system quality on customers' use of ICT in Kenya Commercial Bank Nyeri, Kenya.

4.2 Response Rate

Table 4.1: Response Rate

Category	Frequency	Percentage
Responded	204	100
Did not respond	0	0
Total	204	100

From Table 4.1 the researcher distributed 204 self-administered questionnaires to the sampled respondents, all the questionnaires were returned out of which two were rejected for incomplete information leaving 202 questionnaires for analysis. This however, represented a 100% response rate.

4.3 Demographic Data

The researcher found it crucial to ascertain the broad information of the respondents since it provides basis under which the study can fairly produce relevant information. The analysis relied on this information so as to classify the different results according to their

knowledge and responses. This section looked at the gender of the respondents, age, highest education level, occupation and place of residence.

4.3.1 Gender of the Respondents

In this section, the researchers asked the respondents to indicate their gender. Their responses are shown in Table 4.2

Table 4.2: Gender of the Respondents

Category	Frequency	Percentage
No response	10	5.0
Male	116	57.4
Female	76	37.6
Total	**202**	**100**

From the Table 4.2, 57.4% of the respondents were males, 37.6% of the respondents were females and 5.0% of the respondents did not respond to the question. This implies there is a wide disparity between the male and female responses. However, this does not mean that the responses are biased based on the gender.

4.3.2 Age of the Respondents

In this section, the researcher asked the respondents to indicate their age. Their responses are shown in Table 4.3

Table 4.3: Age of the Respondents

Category	Frequency	Percentage
Below 30 years	87	43.1
Between 31 and 40 years	59	29.2
Between 41 and 50 years	34	16.8
Above 50 years	22	10.9
Total	**202**	**100**

From the Table 4.3, 43.1% of the respondents were aged below 30 years, 29.2% of the respondents were aged between 31 years and 40 years, 16.8% of the respondents were aged between 41 years and 50 years and 10.9% of the respondents were aged above 50 years. This implies that most of the respondents who were involved in the study were in their prime age and they had ample knowledge on the subject matter.

4.3.3 Education Level of the Respondents

In this section, the researcher asked the respondents to indicate their highest education level attained. Their responses are shown in Table 4.4

Table 4.4: Education Level of the Respondents

Category	Frequency	Percentage
No response	5	2.5
Adult education	2	1.0
Primary	17	7.4
Secondary	23	11.4
Certificate	46	22.8
Diploma	60	29.7
Degree and above	51	25.2
Total	**202**	**100**

From the Table 4.4, 29.7% of the respondents indicated that they had attained a diploma, 25.2% of the respondents indicated they had a degree and above, 22.8% of the respondents indicated they had a certificate, 11.4% of the respondents indicated they had secondary education, 7.4% of the respondents had primary education, 1.0% of the respondents had adult education and 2.5% of the respondents did not respond to the question. This implies that most of the respondents were able to comprehend and respond to the questionnaire appropriately.

4.3.4 Occupation of the Respondents

In this section, the researcher asked the respondents to indicate their occupation.

The respondents were drawn from diverse professions. Respondents indicated their occupations as teachers, procurement officers, account clerks, mechanics, traffic police/police officer, nurses/nursing officer, saloonists, technicians, business lady/men,

farmers, plumbers, lawyers, bankers, domestic workers, computer scientists, pharmacists, human resource assistants, IT systems administrator/IT specialist, water and sewerage engineer, hotel attendant/waitress, school's clerk, security guard, news reporter, factory manager, school matron, driver, tailor, pastor and lab technologist. This implies that the respondents were drawn from diverse professions meaning their views about the subject of study were varied.

4.3.5 Place of Residence

In this section, the respondents were asked to indicate whether they resided in Nyeri or not. Their responses are shown in Table 4.5

Table 4.5: Place of Residence

Category	Frequency	Percentage
No response	6	3.0
Yes	196	97.0
No	0	0.0
Total	**202**	**100**

From the Table 4.5, 97.0% of the respondents resided in Nyeri while 3.0% of the respondents did not respond to the question. This implies that the respondents have knowledge about the subject matter since they reside within the area of study and understand the factors affecting customers' use of information and communication technology in Kenya Commercial Bank Nyeri, Kenya.

4.4 ICT use by Customers

In this section the respondents were asked to indicate how often they used the following services from the bank on a typical month.

4.4.1 Analysis of ICT use by Customers

It is imperative to state the criteria for analysis of the data that was used to answer this investigative question. For each best practice identified the respondents were required to indicate how often they used the named ICT channels and how often they used the specific named services.

Table 4.6: Scores for Frequency of Use

Score	Interpretation
1	Very frequently
2	Frequently
3	Rarely
4	Never

Table 4.6 shows the score of the frequency for the various uses of ICT and banking services. A five point Likert scale was used to interpret the respondents' responses. According to the scale, if the respondent ticked that particular items very frequently used, a score of 1 was given and if they ticked never a score of 4 was given on the likert scale. Within the continuum are 2 for frequently and 3 for rarely. Mean (weighted average) and standard deviation were used to analyze the data. On the same note the higher the standard deviation the higher the level of dispersion among the respondents. The scores for each question from all respondents were analyzed for the mean and standard deviation. Table 4.7 shows the criterion used to interpret the mean scores.

Table 4.7: Interpretation of the Mean Scores

Mean Score	Interpretation
Below 2	Frequently used
Between 2 and 3	Rarely used
Above 3	Never used

The Table shows that if the score of the mean for a particular factor was below 2, the interpretation is that the respondents used the service frequently. The interpretation for other mean scores is as shown in Table 4.7

4.4.2 Use of ICT Channels

In this section, the respondents were asked to indicate how often they used the following ICT channels. Their responses are shown in Table 4.8

Table 4.8: Frequency of Use of ICT Channels

Category	Mean	S.D	Interpretation
ATM used	1.05	.227	frequently
Mobile banking used	1.55	.691	frequently
Internet banking used	1.98	.794	frequently
Agent Banking	3.22	.799	Never used

From the Table 4.8 respondents indicated that they frequently used ATMs, internet banking and mobile banking as the mean scores were less than 2 on the likert scale.

However, it was noted that agent banking was never used by most of the respondents as the mean score was more than 3 on the likert scale.

4.4.3 Frequency of Use of the Banking Services

In this section, the respondents were asked to indicate how often they used the following banking services. Their responses are shown in the Table 4.9

Table 4.9: Frequency of Use of the Banking Services

Category	Mean	S.D	Interpretation
ATM cash withdrawals	2.62	.950	rarely used
ATM cash deposits	2.26	1.054	rarely used
Mobile paying bills	2.22	.954	rarely used
Agent banking money transfers	2.61	.967	rarely used

From the Table 4.9, respondents indicated that they rarely used ATM cash withdrawal services, ATM cash deposits services, mobile paying bills and agent banking money transfers as rated between 2 and 3 on the likert scale.

4.5 Customers' Level of Awareness

In this section, the respondents were asked to indicate the extent to which they agreed with the statements related to customers' level of awareness.

4.5.1 Analysis of Customers' Level of Awareness

It is imperative to state the criteria for analysis of the data that was used to answer this investigative question. For each best practice identified the respondents were required to indicate how each of the named factors touches on the customers' level of awareness.

Table 4.10 : Scores for Level of Awareness

Score	Interpretation
1	Strongly agree
2	Agree
3	undecided
4	Disagree
5	Strongly Disagree

Table 4.10 shows the score of the frequency for the various customers' level of awareness. A five point Likert scale was used to interpret the respondent's responses. According to the scale, if the respondent ticked that particular items to be strongly agree a score of 1 was given and if they ticked strongly disagree a score of 5 was given on the Likert scale. Within the continuum are 2 for agree, 3 for undecided and 4 for disagree. The higher the standard deviation the higher the level of dispersion among the respondents. The scores for each question from all respondents were analyzed for the mean and standard deviation. Table 4.11 shows the criterion used to interpret the mean scores.

Table 4.11: Interpretation of the Mean Scores

Mean Score	Interpretation
Below 2	Agree
Between 2 and 3	Undecided
Above 3	Disagree

The Table shows that if the score of the mean for a particular factor was below 2, the interpretation is that the respondents agree with the statement. The interpretation for other mean scores is as shown in Table 4.11

4.5.2 Awareness Levels

Table 4.12: Customers' Level of Awareness

Category	Mean	S.D	Interpretation
I have good knowledge of various ICT channels in the bank	2.06	.993	Undecided
I know how to use bank ICT service channels like ATM, mobile banking, agent banking	1.90	.831	Agree
The mode of advertisement used in marketing an ICT product affects my use of technology's	2.10	1.095	Undecided

From the Table 4.12 respondents agreed that they knew how to use bank ICT service channels like ATM, mobile banking and agent banking as the mean score was below 2 on the likert scale. The respondents however, were undecided on whether they had good knowledge of various ICT channels in the bank and whether the mode of advertisement

used in marketing an ICT product affected their use of technology as the mean score was between 2 and 3 on the likert scale.

4.5.3 Security Concerns

In this section, the researcher sought to assess the effects of security concerns on customers' use of ICT. Their responses are shown in the Table 4.13 the analysis of their responses is in line with Table 4.11 and Table 4.12

Table 4.13: Security Concerns

Category	Mean	S.D	Interpretation
The location of an ATM or any technology used for financial transaction affects my choice of method to use for carrying out a transaction	1.59	1.121	Agree
The security control of the sites where one carries out a financial transaction strongly influences my use of technology	1.56	.1.036	Agree
Increase in internet & ATM theft discourages me from using an ICT channel to transact	1.69	1.170	Agree
Giving my password out for assistance in using ATM or mobile banking affects my use of it	1.66	1.140	Agree

From the Table 4.13, respondents agreed that the location of an ATM or any technology used for financial transaction affected their choice of method to use it for carrying out a transaction, the security control of the sites where one carries out a financial transaction strongly influences their use of technology, increase in internet & ATM theft discourages them from using an ICT channel to transact and giving out password for assistance in using ATM or mobile banking affects their use of it. All these statements have a mean

score of less than two on likert scale indicating that the respondents agreed with all the four of them.

4.5.4 Systems Quality

In this section, the researcher sought to determine the effects of system quality on customers' use of ICT. Their responses are shown in the Table 4.14 the analysis of their responses is in line with Table 4.12 and Table 4.13

TABLE 4.14: SYSTEMS QUALITY

Category	Mean	S.D	Interpretation
Use of technology has helped me save the time I used to spend in carrying out funds transfers	1.67	.818	Agree
I believe that the services provided by banks are of good quality	1.88	.962	Agree
I do feel safe when using technology in carrying out financial transactions.	2.02	1.217	Undecided
The ICT Channels I use are reliable since I use it any time I want	1.95	.937	Agree
Use of Technology in financial transactions meets my expectations in banking industry	1.91	.915	Agree
Technology is convenient since I transact any time I want.	1.73	.846	Agree
Accessibility of any ICT channel affects my use of the channel	1.68	1.093	Agree

From the Table 4.14 respondents agreed with the statement that use of technology has helped them save the time they used to spend in carrying out funds transfers; they believed that the services provided by banks were of good quality, the ICT Channels they

used are reliable since they use it any time they want, use of Technology in financial transactions met their expectations in banking industry, technology was convenient since they transact any time they want and accessibility of any ICT channel affects their use of the channel. However, the respondents were undecided on the fact that they do feel safe when using technology in carrying out financial transactions.

4.6 Overall Satisfaction with Use of ICT in Banks

In this section, respondents were asked to indicate their overall level of satisfaction with use of ICT. Their responses are shown in Table 4.15

Table 4.15: Overall Satisfaction with Use of ICT in Banks

Variable	Frequency	Percentage
Very dissatisfied	2	1.0
Dissatisfied	4	2.0
Undecided	44	21.8
Satisfied	114	56.4
Very satisfied	38	18.8
Total	202	100

Note: Overall satisfaction ranges from 1 (very dissatisfied) to 5 (Very satisfied)

From the research findings, majority 75.2% of the respondents indicated that they were satisfied with the use of ICT in the Banks, 21.8% of the respondents were undecided while 3% of the respondents were dissatisfied with the use of ICT. The mean value of the respondents' overall perceived level of satisfaction was 5.36, which tends towards the high end of the satisfaction scale. This suggested that customers were satisfied with the use of ICT in banks.

4.7 Correlation Analysis

The researcher conducted a correlation analysis to establish if there were positive or negative relationships between the variables identified to the overall satisfaction with use of ICT in the banks and if so was it significant or not.

4.7.1 Correlation Analysis between Customer's Demographic Characteristic and Use of ICT in Banks

The researcher sought to find out if there was a relationship between customer's demographic characteristic and use of ICT. The findings are as indicated in Table 4.16

Table 4.16: Correlation Analysis between Customer's Demographic Characteristic and Use of ICT in Banks

		Gender	Age	Education	Use of ICT
Gender	Pearson Correlation	1	.475**	.328**	-.002
	Sig. (2-tailed)		.000	.005	.990
	N	202	202	202	202
Age	Pearson Correlation	.475**	1	.590**	.113
	Sig. (2-tailed)	.000		.000	.343
	N	202	202	202	202
Education	Pearson Correlation	.328**	.590**	1	.156
	Sig. (2-tailed)	.005	.000		.191
	N	202	202	202	202
Use of ICT	Pearson Correlation	-.002	-.113	.156	1
	Sig. (2-tailed)	.990	.343	.191	
	N	202	202	202	202

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

The results in Table 4.16 indicate that there is a negative relationship between the gender of the respondents and the use of ICT in banks given that their correlation coefficient was -0.02. This implies that the gender of the respondents had no effect on the use of ICT in the banks. On the other hand, there was a positive relationship between age and education level of the respondents against their use of ICT as the both variables had a positive correlation coefficient of 0.113 and 0.156 respectively. This means that both age and education level of the respondents affected their use of ICT in the banks.

4.7.2 Correlation Analysis between Security Concerns of Customers and Use of ICT in Banks

The researcher sought to find out if there was a relationship between security concerns of customers and use of ICT in the banks. The findings are as indicated in Table 4.17

Table 4.17 Correlation Analysis between Security Concerns and Use of ICT in Banks

		Location of ATM or Any technology	Security Controls of the site	Increased internet and ATM theft	Giving password our for assistance	Fear of theft through fraud and hacking of passwords	Use of ICT
Location of ATM or Any technology	Pearson Correlation	1	.538**	.660**	.660**	-.017	.178
	Sig. (2-tailed)		.000	.000	.000	.884	.134
	N	202	202	202	202	202	202
Security Controls of the site	Pearson Correlation	.538**	1	.468**	.481**	-.014	.204
	Sig. (2-tailed)	.000		.000	.000	.907	.085
	N	202	202	202	202	202	202
Increased internet and ATM theft	Pearson Correlation	.660**	.468**	1	.600**	-.065	.155
	Sig. (2-tailed)	.000	.000		.000	.586	.195
	N	202	202	202	202	202	202
Giving password our for assistance	Pearson Correlation	.660**	.481**	.600**	1	.122	.264*
	Sig. (2-tailed)	.000	.000	.000		.308	.025
	N	202	202	202	202	202	202
Fear of theft through fraud and hacking of passwords	Pearson Correlation	-.017	-.014	-.065	.122	1	.122
	Sig. (2-tailed)	.884	.907	.586	.308		.308
	N	202	202	202	202	202	202
Use of ICT	Pearson Correlation	.178	.204	.155	.264*	.122	1
	Sig. (2-tailed)	.134	.085	.195	.025	.308	
	N	202	202	202	202	202	202

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

The results of Table 4.17 indicate that was a positive correlation amongst all the variables against use of ICT. This implied that the location of an ATM or any technology used for financial transaction, the security control of the sites where one carries out a financial transaction, increase in internet & ATM theft and giving out password for assistance while using ATM or mobile banking were directly linked to the customers' ability to use the ICT of the bank. All the variables had a positive correlation coefficient of 0.178, 0.204, 0.155, 0.264 and 0.122 respectively.

4.7.3 Correlation Analysis between Systems Quality and Use of ICT in Banks

The researcher sought to find out if there was a relationship between systems quality and use of ICT in the banks. The findings are illustrated in Table 4.18

TABLE 4.18: CORRELATION ANALYSIS BETWEEN SYSTEMS QUALITY AND USE OF ICT IN BANKS

		Saving time used in carrying out fund transfers	Services provided are of good quality	Safety in carrying out financial transactions	Reliable ICT channels	Meeting expectations of the banking industry	Convenience of transactions	Accessibility of ICT	Use of ICT
Saving time used in carrying out fund transfers	Pearson Correlation	1	.214	.189	.132	-.117	.229	.396**	.279*
	Sig. (2-tailed)		.136	.190	.363	.419	.109	.004	.0202
	N	202	202	202	202	202	202	202	202
Services provided are of good quality	Pearson Correlation	.214	1	.312*	.440**	.119	.078	.160	.093
	Sig. (2-tailed)	.136		.027	.001	.410	.589	.266	.519
	N	202	202	202	202	202	202	202	202
Safety in carrying out financial transactions	Pearson Correlation	.189	.312*	1	.331*	.116	.106	.009	.074
	Sig. (2-tailed)	.190	.027		.019	.422	.465	.949	.609
	N	202	202	202	202	202	202	202	202
Reliable ICT channels	Pearson Correlation	.132	.440**	.331*	1	.444**	.148	.380**	.227
	Sig. (2-tailed)	.363	.001	.019		.001	.305	.006	.113
	N	202	202	202	202	202	202	202	202
Meeting expectations of the banking industry	Pearson Correlation	-.117	.119	.116	.444**	1	.357*	.429**	.266
	Sig. (2-tailed)	.419	.410	.422	.001		.011	.002	.062
	N	202	202	202	202	202	202	202	202
Convenience of transactions	Pearson Correlation	.229	.078	.106	.148	.357*	1	.302*	.227
	Sig. (2-tailed)	.109	.589	.465	.305	.011		.033	.114
	N	202	202	202	202	202	202	202	202
Accessibility of ICT	Pearson Correlation	.396**	.160	.009	.380**	.429**	.302*	1	.536**
	Sig. (2-tailed)	.004	.266	.949	.006	.002	.033		.000
	N	202	202	202	202	202	202	202	202
Use of ICT	Pearson Correlation	.279*	.093	.074	.227	.266	.227	.536**	1
	Sig. (2-tailed)	.0202	.519	.609	.113	.062	.114	.000	
	N	202	202	202	202	202	202	202	202

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

The results of Table 4.18 show that there was a positive relationship among the variables against use of ICT. It was clear that respondents used ICT because it helped them save on time as they used less time when carrying out funds transfers, they also believed that the services provided are of good quality partly because of use of ICT, technology did make customers feel safe when carrying out financial transactions, ICT channels used were reliable and convenient since they could use it any time they pleased and use and accessibility of technology in financial transactions met their expectations. All the above variables had a positive correlation with the use of ICT.

4.8 Summary

This chapter explored the survey return rate which was 99%, the respondents profile in terms of gender, age, and place of residence. Factors that affect ICT adoption such as level of education security concerns and system quality were analyzed. The information on the above factors was collected by use of structured questionnaires. The questionnaire used a five point likert scale to measure a range of opinions from strongly agree to strongly disagree Descriptive analysis of the data was done in terms of means, standard deviation, percentages and mean score ranking which was presented in form of tables and figures

CHAPTER FIVE
SUMMARY OF FINDINGS, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter focused on summary of major findings from the results of the study, discussion and conclusions made from them. It also presents the recommendation thereto by the researcher. This was done in respect to purpose of the study which was to investigate the factors affecting customers' use of information and communication technology in the banking industry in Kenya. A case of Kenya Commercial Bank Nyeri, Kenya

5.2 Summary of Findings

The following were the major findings of the study as per the objectives:

5.2.1 Influence of customers' demographic characteristics on the use of ICT in Kenya Commercial Bank Nyeri, Kenya.

The study established that 57.4% of the respondents were males and 37.6% were females. 72.3% of the respondents were aged less than 40 years and 97.0% of the respondents resided in Nyeri and were drawn from diverse professions meaning their views about the subject of study were varied. The findings indicated that gender had no influence on the use of ICT, both women and men were equally able to use the available technology and thus the negative relationship between gender and use of ICT. On the other hand, there was a positive relationship between the age of the respondents and use of ICT. This shows that since most of the respondents were in their prime age had embraced the use of technology and found it easier to use it in doing their banking transactions. This revealed that age and place of residence had a positive influence on use of ICT while gender had no influence on the use of ICT.

5.2.2 Influence of education on ICT use in Kenya Commercial Nyeri, Kenya

77.7% of the respondents had at least a certificate, diploma or degree, respondents agreed that they knew how to used bank ICT service channels like ATM, mobile banking and agent banking but were undecided on whether they had good knowledge of various ICT channels in the bank. The educated customers found it easy to use the technology provided as they were able to comprehend on how to go about the use of ICT. This means that education has a positive influence on the use of ICT

5.2.3 Influence of security concerns on customers' use of ICT in Kenya Commercial Bank Nyeri, Kenya

Respondents agreed that the location of an ATM or any technology used for financial transaction affected their choice of method to use for carrying out a transaction, the security control of the sites where one carries out a financial transaction strongly influences their use of technology, increase in internet & ATM theft discourages them from using an ICT channel to transact and giving out password for assistance in using ATM or mobile banking affects their use of it. This indicates that security concerns positively influence use of ICT.

5.2.4 Influence of system quality on customers' use of ICT in Kenya Commercial Bank Nyeri, Kenya.

Respondents used ICT because it helped them save on time as they used less time when carrying out funds transfers, they also believed that the services provided are of good quality partly because of use of ICT, technology did make customers feel safe when carrying out financial transactions.ICT channels used were reliable and convenient since they could use them any time and use and accessibility of technology in financial transactions met their expectations. This revealed that that system quality positively influences ICT adoption.

5.3 Discussion

In this section the study sought to discuss the findings as per the research objectives while basing the discussion on the literature reviewed.

5.3.1 Influence of customers' demographic characteristics on the use of ICT in Kenya Commercial Bank Nyeri, Kenya.

The study indicates that most of the respondents were males and aged less than 40 years. This correlates with findings by Yang, (2005) who established that consumer innovativeness, past adoption behaviour and age affect ICT adoption. Another study by Czaja, Charness, Fisk, Hertzog, Nair, Rogers and Shark, (2006) on Aging and Technology Enhancement examined the influence of age on the use of technology and revealed that older adults were less likely than younger adults to use technology in general which included computers and the World Wide Web. The findings indicated that the relationship between age and adoption of technology was mediated by cognitive abilities, computer self-efficacy, and computer anxiety.It is expected that women would fear the use of technology unlike men and customers of a given age group are comfortable to use modern technology in doing their transactions. Contrary to this, the findings indicated that gender had no influence on the use of ICT. Both women and men were equally able to use the available technology thus the negative relationship between gender and use of ICT. On the other hand, there was a positive relationship between the age of the respondents and use of ICT.This shows that since most of the respondents were at their prime age they had embraced the use of technology and found it easier to use it in doing their banking transactions.

5.3.2 Influence of education on ICT use in Kenya Commercial Nyeri, Kenya

The findings of the study revealed that the respondents had attained at least a certificate, diploma or degree. This is supported by the fact that the respondents agreed that they knew how to use bank ICT service channels like ATM, mobile banking and agent banking but were undecided on whether they had good knowledge of various ICT channels in the bank and whether the mode of advertisement used in marketing an ICT product affected their use of technology. This is in agreement with Laforet, (2005) who stated that the main barriers to ICT adoption were lack of awareness and understanding the benefits provided by ICT. Another study by Al-

Ashban and Burney, (2001) examined customer adoption of mobile banking technology which indicated that in general consumers' income level and education play a vital role in adoption and usage of mobile banking technology.This validates the fact that educated customers found it easy to use the technology provided as they were able to comprehend on how to go about the use of ICT. This means that indeed the education level of the bank customers affects their use of ICT.

5.3.3 Influence of security concerns on customers' use of ICT in Kenya Commercial Bank Nyeri, Kenya

The study established that the respondents agreed that the location of an ATM or any technology used for financial transaction affected their choice of method to use for carrying out a transaction, the security control of the sites where one carries out a financial transaction strongly influences their use of technology, increase in internet & ATM theft discourages them from using an ICT channel to transact and giving out password for assistance in using ATM or mobile banking affects their use of it. Further on, the correlation analysis revealed that the location of an ATM or any technology used for financial transaction, the security control of the sites where one carries out a financial transaction, increase in internet & ATM theft and giving out password for assistance while using ATM or mobile banking were directly linked to the customers' ability to use ICT .It is evident that customers need to feel secure while using the available ICT channels and this ultimately affects their use of ICT while conducting financial transactions at the bank. This concurs with an earlier study done by Sathye,(2009) which revealed that security concerns was found to be the most important factor hindering ICT adoption among the Australian consumers. Laforet, (2005), also highlighted the issue of security and gender as some of the factors of concern in the use of technology among consumers in China and found out that the main barrier to adoption of online banking was the perception of risks.

5.3.4 Influence of system quality on customers' use of ICT in Kenya Commercial Bank Nyeri, Kenya.

Findings from the study revealed that the respondents agreed that the use of technology has helped them save time that they used to spend in carrying out funds transfers; they believed that the services provided by banks were of good quality, the ICT Channels they used are reliable since they use them any time they want, use of Technology in financial transactions met their expectations in the banking industry, technology was convenient since they transact any time they want and accessibility of any ICT channel affects their use of the channel .This observation is similar Hwang, Ku, Yen and Cheng, (2004) who found out that the critical factors influencing ICT adoption include support from the top management, systems of the bank, effect of champion, internal needs, and competitive pressure on quality.This implies that indeed system quality affects the customers use of technology in the bank.

5.4 Conclusions

In light of the above findings the study concluded that ICT adoption among bank customers is still very low despite heavy investment by the banking industry in technology. This may be due to lack of knowledge and awareness, security fears and low understanding of the benefits associated with improved technology

Gender has no effect on the use of ICT in banks; both women and men were equally able to use the available technology provided they were aware of it and understood the benefits. Age affected an individual's use of ICT in the banks which means that the ICT systems in place should be easy to use, reliable and saves on time. In this way it will be easy for all users to use ICT regardless of their age

 Education level affected use of ICT in the banks.ICT integration and adoption was high in individuals who had at least attained a certificate. With free primary education and subsidised secondary education it is possible to conclude that the level of ICT adoption will greatly improve with time.

Security concerns and fears affected ICT use this meant that individuals wanted to be assured of safety during transactions which would then increase their rate of ICT adoption and usage.

The study also concluded that systems quality greatly affected ICT use. This is so because it helped them save on time, the services provided were of good quality partly because of use of ICT, ICT channels used were reliable and convenient since they could use them any time they pleased and use and accessibility of technology in financial transactions met their expectations, this implied that if quality of ICT was maintained many individuals would migrate to embracing new technology.

5.5 Recommendations

Based on the above findings, the researcher recommends that:

i. The Government of Kenya and especially the Ministry of Information and Communication needs to ensure that the ICT systems in place are easy to use, reliable, and accessible and saves on time. In this way it will be easy for all users to use ICT regardless of their age, gender or place of residence

ii. Banks should strive to educate their customers on the available technological advances and how to use them. This could be through the use of media, pamphlets, and electronic materials.

iii. The security firms and banks need to increase the security systems so as to minimize thefts and fraud. This can be done by introducing CCTV cameras, having adequate security controls, up to date training on emerging security threats and hefty punishments for the security offenders

iv. Banks need to invest heavily on modern technology that is user friendly, high quality and convenient to the needs of the customers. The ICT system in place should be one easy to use, reliable and saves on time.

5.6 Areas of Further Research

The following is recommended for further research;

i.   Strategies and mechanisms in ICT that banks can use in marketing their products to reach a wide customer base.

ii.   Strategies and mechanisms that can be adapted to increase and sustain customers' use of ICT in the banking industry

iii.   Influence of culture and attitude on adoption of new technology.

5.7 Summary

The findings indicate that despite government initiative to facilitate ICT adoption in organizations and institutions this is a gap in the number of people who have adopted and use ICT. Highlighted in the chapter include; Summary of findings, discussion, conclusions, recommendations and suggestions for further research

REFERENCES

Ajzen, I. (1988X *Attitudes, Personality, and Behavior.* England: Open University Press & Chicago, IL: Dorsey Press.

Adams, D. A., Nelson, R. R.and Todd, P. A. (1992). Perceived Usefulness, Ease of Use, And Usage Of Information Technology: *A replication, MIS Quarterly,* 16:227-247.

Ahmad, A., Kashif-ur-Rehman, Saif, I. & Safwan, N. (2010). An empirical investigation of Islamic banking in Pakistan based on perception of service quality. *African Journal of Business Management,* Vol. 4(6), 1185-1193.

Al-Ashban, A. A.and Bumey, M.A. (2001). Customer adoption of tele-banking technology: the case of Saudi Arabia, *International Journal of Bank Marketing,* Vol. 19 (5), pp.191-201.

Bateson, J.and Hoffman, K. (1997). *Essentials of service marketing:* The Dryden Press, Fort Worth, TX. Vol. 28 (4): 120-37.

Bagozzi, R.P. and Warshaw, P.R. (1992). Development and test of a theory of Technological learning and usage, *Human Relations,* 45(7): 660-686.

Bagozzi, R.P. (2007). The Legacy of the Technology Acceptance Model and a Proposal
for a Paradigm Shift, *Journal of the Association for Information Systems,* 8, pp. 244-254

Barton, K. (2001). *Introduction to Scientific Research Method.* New York: Griaef Publishers.

Bitner, M.J. Brown, S.W.and Meuter, M.L. (2000). Technology infusion in service encounters. *Journal of the Academy of Marketing Science,* vol 28 (1): 138-149.

Borg, W.R.and Gall, M.D. (1989). *Educational Research.* White Plains, New York: Longman.

Bush, A.J.and Hair, J.F. (1985). An Assessment of the Mall Intercept as a Data Collection Method. *Journal of Marketing Research,* Vol. 22, No. 2 (May, 1985), pp. 158-167

Curran, J. M., Meuter, M. L.and Surprenant, C.F. (2003). Intentions to use self-service technologies: a confluence of multiple attitudes. *Journal of Service Research* ,vol 5 (3):209-224.

Czaja, S. J., Charness, N., Fisk, A. D., Hertzog, C, Nair, S., N., Rogers, W.A. & Shark, J. (2006). Factors Predicting the Use of Technology: Findings From the Center for Research and Education on Aging and Technology Enhancement (CREATE). *Psychol Aging Journal,* 21(2): 333-352.

Datta, K.S. (2010). Acceptance of E-banking among Adult Customers. *Journal of Internet Banking and Commerce.*

Davis, F.D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology, *MIS Quarterly* 13(3): 319-340.

Dowdy, S.and Wearden, S. (1983). Statistics for Research. New York: Wiley.

Equity Bank (2011). *Nairobi Branches.* Retrieved February, 10, 2011 from http://www.equitybank.co.ke/nairobibranches.php

Gay, L.R. (1996). *Educational Research: Competencies for analysis and application (5th Ed.)* New Jersey: Prentice Hall Inc.

George, D.and Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and Reference,* 4th ed.. Boston: Allyn & Bacon.

Gurau, C. (2002). E-banking in transition economics: the case of Romania. *Journal of Financial Services Marketing,* 6 (4) : 362-378.

Hendrickson, A. R., Massey, P. D.and Cronan, T. P. (1993). On the test-retest reliability of perceived usefulness and perceived ease of use scales, *MIS Quarterly,* 17: 227-230.

Hitt, L.M.and Frei, F.X. (2002). Do better customers utilize electronic distribution channels? The case of PC banking. *Management Science,* 48 (6) :732-748.

Ffowcroft, B., Hamilton, R.and Heder, P. (2002). Consumer attitude and the usage and adoption of home-based banking in the United Kingdom. *InternationalJournal of Bank Marketing,* 20 (3): 111-21.

Hsin-Ginn, H., Cheng-Yuan, K, Yen, D.C.and Chi-Chung, C. (2004).

Critical factors influencing the adoption of data warehouse technology: a study of the banking industry in Taiwan. *Decision Support Systems,* Volume 37(1): 1-21.

Jeevitha E. (2007). *Impact Of Technology in Banking.* Retrieved on January 7, 2011 from http://ezinearticles.com

Koivimaki, T., Ristola, A.and Kesti, M. (2008). The perceptions towards mobile services: An empirical analysis of the role of use facilitators, *Personal and Ubiquitous Computing,* vol. 12(1): 67-75.

Laforet, S.and Li, X. (2005). Consumers' attitudes towards online and mobile

banking in China. *International Journal of Bank Marketing,* Vol. 23 (5): 362 - 380

Malhotra, P.and Singh, B. (2009). Analysis of Internet banking offerings and its determinants in India. *Internet Research,* vol 20 (1):87-106.

Mazhar, N. (2006). *Technology Acceptance Model.* Karachi University.38

Mugenda, O.M.and Mugenda, A.G. (1999). *Research Methods. Quantitative and Qualitative approaches.* Nairobi: Africa Center for Technology Studies Press.

Owens, L.K. (2002). Introduction to Survey Research Design.
SRI Fall 2002 Seminar Series.

Ojung'a, S. (2005). *A survey of E-Commerce in Commercial Banks in Kenya.* Unpublished MBA Research Project, University of Nairobi.

Ombati, T.O., Magutu, O.P.and Nyaoga, B.R. (2010). Technology and Service

Quality in the Banking Industry. *A Journal of Business and Management,* Vol. 1.

Pavlou, P. (2001). Integrating trust in electronic commerce with the Technology Acceptance Model: Model Development and Validation. *Seventh Americas Conference on Information Systems, pp.* 816-822.

Parasuraman, A.and Colby, C.L. (2001). Techno-Ready Marketing: *How and Why Your Customers Adopt Technology,* Free Press, New York.

Polatoglu, V.and Ekin, S. (2001). An empirical investigation of the Turkish consumers' acceptance of internet banking services. *International Journal of Bank Marketing,* vol 19 (4): 156-65.

Popoola, S. O. (2010). Management Perceptions of Internet - Based Banking Services in Nigerian Commercial Banks. *African Research and Documentation:* Nigeria.

Sayar, C.and Wolfe, S. (2007). Internet banking market performance: Turkey versus the UK. *International Journal of Bank Marketing,* 25 (3): 122-141.

Subramanian, G. H. (1994). A replication of perceived usefulness and perceived ease of Technology. *Decision Sciences,* 25(5/6): 863-873.

Venkatesh, V.and Davis, M. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly,* vol 27: 425^178.

Wang, Y., Wang, Y., Ling, H.and Tang, T. (2003). Determinants of user acceptance of Internetbanking: an empirical study. *International Journal of Service Industry Management,* volume 14 (5):501-519.

Yang, K.C.C (2005). Exploring factors affecting the adoption of mobile commerce in Singapore. *Telematics and Informatics,* Volume 22(3): 257-277'.

APPENDICES

APPENDIX 1: RESEARCH AUTHORIZATION FROM NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

REPUBLIC OF KENYA

NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Telephone: 254-020-2213471, 2241349, 254-020-2673550
Mobile: 0713 788 787 , 0735 404 245
Fax: 254-020-2213215
When replying please quote
secretary@ncst.go.ke

P.O. Box 30623-00100
NAIROBI-KENYA
Website: www.ncst.go.ke
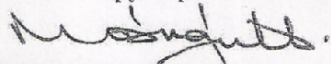
Our Ref: NCST/RCD/13/013/85

Date: 10th July 2013

Grace Mwihaki Muturi
University of Nairobi
P.O.Box 598-10100
Nyeri

RE: RESEARCH AUTHORIZATION

Following your application dated 5th July, 2013 for authority to carry out research on *"Factors affecting customer's use of Information and Communication Technology in the Banking Industry in Kenya: A study of Kenya Commercial Bank, Nyeri-Kenya."* I am pleased to inform you that you have been authorized to undertake research in **Nyeri District** for a period ending 31st **December, 2013.**

You are advised to report to **the Branch Managers at Kenya Commercial Banks, District Commissioner** and **District Education Officer, Nyeri District** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

DR. M. K. RUGUTT, PhD, HSC.
DEPUTY COUNCIL SECRETARY

Copy to:

The Branch Manager
Kenya Commercial Bank

The District Commissioner
The District Education Officer
Nyeri District

"The National Council for Science and Technology is Committed to the Promotion of Science and Technology for National Development".

65

APPENDIX 1I: LETTER OF TRANSMITTAL

Grace M Muturi

P.o. Box 215-10100

Nyeri

Tel No. 0720 877681

Dear Respondent,

RE: Data collection

I wish to inform that I am undertaking research for my Master of Arts Degree in Project Planning and Management of the University of Nairobi. This research deals with the factors affecting customers' use of information and communication technology in the banking industry in Kenya. A case of Kenya Commercial Bank Nyeri, Kenya

Your assistance on data collection will be appreciated as the study will benefit the bank customers, Non -customers and other stake holders. The information you provide will be treated with confidentiality and will be used strictly for academic purposes. I therefore request you to answer the questions honestly and objectively as possible.Incase of any further clarification please contact the researcher on the telephone number above.

Attached please find the questionnaires.

Please treat this as urgent and important.

Kind regards.

Yours faithfully,

Grace M Muturi

APPENDIX 111:KENYA COMMERCIAL BANK NYERI, CUSTOMERS' QUESTIONNAIRE

This questionnaire is for the purposes of collecting research information relating to factors affecting customers' use of information and communication technology in the banking industry.

All the information will be used for the purposes of this research only and will be treated with utmost confidence. Kindly respond to all the questions. Your cooperation will be highly appreciated.

Instructions

Kindly use tick (√) inside the box to indicate the appropriate answer where choices are given.

SECTION A Demographic Data

1. Gender

    Male ☐

    Female ☐

2. What is your age in years

    18 – 29 ☐

    30 - 39 ☐

    40 - 49 ☐

    50 - 59 ☐

    60 and above ☐

3. Indicate the highest educational level attained

    Adult Education ☐

    Primary ☐

    Secondary ☐

    Certificate ☐

    Diploma ☐

    Degree and above ☐

4. _____What is your Occupation?

5. Do you live within Nyeri?

   a) Yes [_____]   No [_____]

Section II: ICT use by Customers

2. How often do you use the following in a typical month (please fill in the appropriate responses by ticking in the boxes)

How often do you use the following ICT channels	Very frequently	Frequently	Rarely	Never
ATM				
Mobile banking				
Internet Banking				
Agent Banking				
How often do you use the following specific services	Very Frequently	Frequently	Rarely	Never
ATM Cash withdrawals				
ATM Cash Deposit				
Mobile Paying Bills				
Money transfer				

Section III: Customers' Level of Awareness

(Key: SA-Strongly Agree, A-Agree, UD-Un Decided, DA-Disagree, SD -Strongly Disagree)

No	Statement	SA	A	UD	DA	SD
SECTIII	Customers Level of Awareness					
3a	I have good knowledge of various ICT channels in the bank					

3b	I know how to use bank ICT service channels like ATM, mobile banking, agency banking					
3c	The mode of advertisement used in marketing an ICT product affects my use of technology's					
SEC IV	**Security Concerns**					
4a	The location of an ATM or any technology used for financial transaction affects my choice of method to use for carrying out a transaction					
4b	The security control of the sites where one carries out a financial transaction strongly influences my use of technology					
4c	Increase in internet & ATM theft discourages me from using an ICT channel to transact					
4d	Giving my password out for assistance in using ATM or mobile banking affects my use of it					
4f	Fear of theft through fraud, hacking of my password affects my use of ICT products in banks					
SECT V	**System Quality**					
5a	Use of technology has helped me save the time i used to spend in carrying out funds transfers					
5b	I believe that the services provided by banks are of good quality					
5c	I do feel safe when using technology in carrying out financial transactions.					
5d	The ICT Channels i use are reliable since i use it any time i want					
5e	Use of Technology in financial transactions meets my expectations in banking industry					
5f	Technology is convenient since I transact any time i want.					
5g	Accessibility of any ICT channel affects my use of the channel					

Thank you for your cooperation