CHALLENGES FACING INTERNET BANKING: A CASE STUDY OF FAMILY BANK LIMITED IN NAIROBI

BY
CHEPKOECH BEATRICE

UNITED STATES INTERNATIONAL UNIVERSITY - AFRICA

SPRING 2017
CHALLENGES FACING INTERNET BANKING: A CASE STUDY OF FAMILY BANK LIMITED IN NAIROBI

BY

CHEPKOECH BEATRICE

A Research Project Report Submitted to the School of Business in Partial Fulfillment of the Requirement for the Degree of Masters in Business Administration (MBA)

UNITED STATES INTERNATIONAL UNIVERSITY - AFRICA

SPRING 2017
DECLARATION

I, the undersigned declare that this is my original work and that it has not been submitted to any other College, Institution or University other than United States International University for academic purposes.

Signed………………………… Date …………………

Chepkoech Beatrice (ID 631351)

This research proposal has been submitted for examination with our approval as university supervisors.

Signed………………………… Date …………………

Name: Kepha Oyaro

Signed………………………… Date …………………

Dean, Chandaria School of Business
COPYRIGHT
All rights reserved. No part of this project may be reproduced or transmitted in any form or by any means-electronic, mechanical, including photocopying, recording, information storage or otherwise, without prior written permission from the author.

Copyright © 2017 Beatrice Chepkoech
All rights reserved
ACKNOWLEDGEMENT

My acknowledgement first goes to the Almighty for giving me strength for having come this far.

I would also like to acknowledge my supervisor, Mr. Kepha Oyaro for his guidance and direction.

I am indebted by the support of Family Bank staff for taking part in the research and sharing their views with courage.

Lastly, my friends Desmond Sagwe, Maryanne Ngari and Baby Ranelle for their Support.
DEDICATION

To my beloved mother.
ABSTRACT

The study looked at Internet banking as a relatively new product that has been developed by commercial banks in Kenya. Businesses keep changing every day as a result of the internet influences. In the banking world, the development in information technology has a lot of effect on development of banking services that are more users’ friendly giving rise to a more efficient banking system. The objectives of this research was; To establish Infrastructural challenges of internet banking, To find out the Legal and security challenges associated with Internet banking and To establish how customers’ exposure and literacy to computers and information technology pose a challenge to internet banking.

In this study the researcher used primary data due to the nature of the variable to be generated and the type of population characteristics. Primary data was both quantitative and qualitative. The target population contributed to the collection of primary data. There were questionnaires to be answered by the respondents themselves. The questionnaires had questions based on the research objectives and is focused to investigate the challenges facing internet banking. In this research, Stratified sample method was engaged. The data collected was edited, coded, classified and analyzed using Statistics Package for Social Sciences (SPSS) and later presented in frequency tables and figures. Both qualitative techniques and quantitative techniques procedures were applied by the researcher.

The findings of this study reveals that infrastructural barriers are not key challenges facing internet banking as shown by the aggregate mean of 2.2778 and standard deviation of .8308. In objective two Legal and security issues are exceptionally good thus there’s compliance to the set rules, regulations and controls by the bank as shown by their rating with the aggregate mean of 2.065 and standard deviation of 0.7147 majority of the respondents. The last objective was on Customers’ exposure and literacy to computers and information technology challenge to internet banking. Respondents rate them as good thus customers are well exposed and are literate on the use of computers and information technology as shown by their rating with the aggregate mean of 2.3407 and standard deviation of 0.8247.
The study concludes that challenges faced in offering internet banking services include lack customer awareness, poor internet speed, lack of internet banking alerts, poor market penetration and reception of internet banking services, illiteracy among the customers, were the challenges they encounter. Internet banking increases convenience, but as it also opens a bank to security issues. Competition and transformation in technological advancements in the banking industry necessitating huge investment on internet banking infrastructure. Internet banking increases convenience, but as it also opens a bank to security issues.

Recommendations for the bank have been generated from the results and findings. Banks to continually train their employees who will in turn pass the knowledge to their customers therefore the issue of illiteracy negative reception and lack customer awareness is dealt with and collaborate with internet service providers so as to gain high quality internet infrastructure to enable the banks offer better quality services and at the same time enhance internet accessibility. More-so banks to put in place extensive customer awareness programs on internet banking to enhance market penetration and reception of internet banking services, and reduce illiteracy among the customers. They should collaborate with internet providers to ensure a faster internet speed provision and internet banking alerts to customers.

The research is of immense help to the policy formulators in family bank, in matters relating to internet banking. It equip staff and more so the senior policy-makers to make the right decisions in the area internet banking going forward.
TABLE OF CONTENTS

DECLARATION ........................................................................................................ iii
COPYRIGHT ........................................................................................................ iv
ACKNOWLEDGEMENT ..................................................................................... v
DEDICATION ....................................................................................................... vi
ABSTRACT .......................................................................................................... vii
LIST OF FIGURES ............................................................................................... xiii

CHAPTER ONE ....................................................................................................... 1
1.0 INTRODUCTION ............................................................................................. 1
1.0 Background of the Study ................................................................................ 1
1.2 Problem Statement ....................................................................................... 5
1.3 General Objective ........................................................................................ 6
1.4 Specific Objectives ....................................................................................... 6
1.5 Importance of the Study .............................................................................. 6
1.6 Scope of the Study ....................................................................................... 7
1.7 Definitions of Terms ................................................................................... 7
1.8 Chapter Summary ....................................................................................... 7

CHAPTER TWO ....................................................................................................... 8
2.0 LITERATURE REVIEW ................................................................................ 8
2.1 Introduction .................................................................................................. 8
2.2 Infrastructural Challenges Facing Internet Banking ..................................... 8
2.3 Legal and Security Issues Facing Internet Banking .................................... 12
2.4 Customers’ Exposure and Literacy to Computers and Information Technology Facing Internet Banking ................................................................. 17
2.5 Chapter Summary .......................................................... 21

CHAPTER THREE ........................................................................ 22

3.0 RESEARCH METHODOLOGY .............................................. 22

3.1 Introduction ..................................................................... 22

3.2 Research Design .............................................................. 22

3.3 Population and Sampling Design ....................................... 22

3.4 Data Collection Methods .................................................. 24

3.5 Research Procedure .......................................................... 25

3.6 Data Analysis Methods ....................................................... 26

3.7 Chapter Summary ............................................................. 26

CHAPTER FOUR ........................................................................ 27

4.0 RESULTS AND FINDINGS .................................................. 27

4.1 Introduction ................................................................. 27

4.2 Response Rate and Demographic Characteristics of the Respondents .............. 27

4.3 Infrastructural barriers ......................................................... 31

4.4: Legal And Security Issues ................................................. 34

4.5 Customers’ Exposure and Literacy to Computers and Information Technology ...... 36

4.6 Chapter Summary ............................................................. 39

CHAPTER FIVE ......................................................................... 41

5.0 SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS 41

5.1 Introduction ................................................................. 41

5.2 Summary ................................................................. 41

5.3 Discussion ................................................................. 43

5.4 Conclusion ................................................................. 48
REFERENCES ........................................................................................................................................... 51
APPENDICES ....................................................................................................................................... 55
Appendix I : Questionnaire .............................................................................................................. 55
Appendix II : Work Plan .................................................................................................................... 59
LIST OF TABLES

Table 3.1 Target population ..................................................................................................................233
Table 3.2 Sample Size ...........................................................................................................................244
Table 4.1: Age of the Respondents .......................................................................................................28
Table 4.2: Education of the Respondents ..............................................................................................29
Table 4.3: Level of Computer Courses of the Respondents .................................................................30
Table 4.4: Access to Internet by the Respondents ...............................................................................31
Table 4.5: Infrastructural Challenges ...................................................................................................322
Table 4.6: Correlation between infrastructural challenges and internet banking ..................................33
Table 4.7: Legal and Security Issues ......................................................................................................344
Table 4.8: Correlation between Legal and Security Issues and internet banking ...............................36
Table 4.9: Customers’ Exposure and Literacy to Computers and Information Technology ..................37
Table 4.10: Correlation between Customers’ Exposure and Literacy to Computers and Information Technology and internet banking .................................................................38
LIST OF FIGURES

Figure 4.1: Gender .........................................................................................................................28

Figure 4.2: The Respondents who have and have not done computer courses.................30
CHAPTER ONE

1.0 INTRODUCTION

1.0 Background of the Study
The economy of most developing countries is cash driven; meaning that monetary transactions are basically made through the exchange of bank notes and coins for goods and services. However, this trend is now giving way to a modern and sophisticated payment system where the currency and notes are converted to data, which are in turn transmitted through the telephone lines and satellite transponders. This is as a result of rapid technological progress and development in the financial market (Ozuru, Chikwe, & Idika, 2010). There is faster delivery of information from the customer and service provider, thus differentiating Internet enabled electronic banking system from the traditional banking operation. This transfer process makes money to be carried in information storage medium such as cheques, credit cards, and electronic means than its pure cash form. Electronic banking has thus become important channel to sell Products and Services; leading to a paradigm shift in marketing practices, resulting in high performance in the banking industry (Singhal & Padhmanabhan, 2008).

The banking industry has been undergoing changes since the mid 1990s, in the form of innovative use of information technology and development in electronic commerce. This development made electronic banking pose as a threat to the traditional branch operations, despite the fact that electronic commerce is still developing and is rapidly changing (Harris & Spence, 2002). Ozuru et al. (2010) explains that the importance of electronic payment system in any country can never be over emphasized, due to the dramatic transformation in technological advancements that is being experienced by the global financial industry.

According to Chiemeke, (2006), traditionally, Banks have always been in the forefront of harnessing technology to improve their products, services and efficiency. Banks have been delivering a wide range of quality products and services using telecommunication networks and electronic networks. They have established direct dial up connections, private networks and public networks as their delivery channels.
They have been using computers, telephone and Automated Teller Machines (ATM), as devices to offer their services. The accessibility in Kenya of personal computer and high-tech mobile phones including iPhones and iPods has made Internet and World Wide Web (WWW) access easy. Internet is increasingly being used by banks to delivering their products and services to their customers and to receiving instructions (Karjaluoto, Mattila, & Pento, 2002). The form of banking is referred to as Internet Banking. Internet banking has been used by most of the financial institutions in Kenya among which are the banks but the product and services offered differ widely from one bank to the other both in their sophistication and content.

The rise of many technological capabilities has led to the development of many product offerings which and have improved operational efficiency of banks. These successes have led to possibilities of technology misuse Kobsa, (2002). Electronic banking is neutral and can be used in the ways that most of us would consider beneficial, as well as in ways that are harmful. Many users of electronic banking are hesitant to use the system due to the fear of system security. Electronic banking security issues have brought many concerns from government, banks, business, individuals and technology experts (Hertzum, Jorgense & Norgaar, 2004).

Malhotra & Singh, (2010) argues that internet banking happens to be the outcome of e-commerce in the banking and financial industry. Internet banking offers a number of online services such as inquiry of balance, cheque books requests, recording stop-payment instructions, and instructions of balance transfer, account opening and other banking services. These are mainly traditional services offered through the internet but as a new delivery channel. Payments services are also being offered by banks on behalf of their customers who utilize different electronic shops and electronic malls. Furthermore, different banks have different levels of such services offered starting with the first level where only information is disseminated through the internet to the third level whereby online transactions are carried out (Kolodinsky, Hogarth, & Hilgert, 2004).

According to Koufaris, (2002), the levels of banking services offered through the internet can be categorized in to three types. The first basic level service is the banks’ websites. The website is used to disseminate information on different products and services offered by the bank to its customers and members of public.
It can also be used as a tool of receiving and replying to customers’ queries through e-mail. The second level is simple transactional websites. The website allows customers to submit their applications and instructions for different services, queries on their account balances, and access other services available, but do not permit any fund-based transactions on their accounts. The third level of Internet banking services are offered by fully transactional websites which allow the customers to operate on their accounts which include being able to pay different bills, to purchase and sell securities, transferring funds and also enabling customers to subscribe to other products and services offered by the bank (Koufaris, 2002).

From the perspective of banking products and services being offered through Internet, Internet banking is nothing more than traditional banking services delivered through an electronic communication backbone, viz, Internet. But, in the process it has thrown open issues which have ramifications beyond what a new delivery channel would normally envisage and, hence, has compelled regulators world over to take note of this emerging channel (Chiemeke, 2006).

Some of the distinctive features of internet banking are; it removes the traditional geographical barriers as it could reach out to customers of legal jurisdiction and different countries. This has raised the question of jurisdiction of law / supervisory system, to which such transactions should be subjected. It also has added a new dimension to different kinds of risks traditionally associated with banking, heightening some of them and throwing new risk control challenges (Gerrard & Cunningham, 2003). Security of banking transactions, validity of electronic contract and customers’ privacy, which have all along been the concerns of both bankers and supervisors who assumed different dimensions have given that Internet is a public domain, not subject to control by any single authority or group of users. It also poses a strategic risk of loss of business to those banks who do not respond in time, to this new technology, being the efficient and cost effective delivery (Hertzum, Jorgense, & Nargaar, 2004)

Information Technology has been made a business tool through the use of internet connectivity. ‘Digital economy’ has been created out of the information technology development and with it has also come increasing and intensive skills and knowledge in all business sectors and rapid change in technology.
Information technology has also led to the creation of new forms of businesses, virtual supply chains and service delivery channels such as Internet banking (Koufaris, 2002). Banking institutions are essential component of most economies as it is referred to as the engine of growth and also conduits towards promoting economic growth. There are not many inventions that have changed the business of banking as quickly as the e-banking revolution. World over banks are reorienting their business strategies towards new opportunities offered by internet-banking. Through internet banking, banks have changed their strategic behaviors and they have been able scale borders. Internet has continued to provide a versatile platform for business entities to offer their services to customers in a convenient manner. Internet banking and e-commerce are closely related systems with huge interactions and their development needs social identity, a reliable law system, well-built network, and powerful government support.

Since there can be many potential problems, it is necessary to develop a sound atmosphere for i-banking. First, strengthen the construction of the network infrastructure; second, improve the risk prevention mechanism, and speed up the formulation of e-commerce-related standards and laws; third, boost the information development; fourth, nurture more practitioners in this area and finally strengthen communications with government for policy support (Shamdasani, Mukherjee, Malhotra, 2008). The revolutionary and transformative approach to business activities have been enabled through internet based solutions. In the world of business, banks have not been left behind in the adoption of computing related solutions to their businesses. Internet banking is one of such ICT adoption that has empowered banks towards taking their services and profitability to a higher notch. However, this good success has not come without challenges and one of the biggest headaches to system developers, banks and customers are the system security threats that can easily erode banks’ reputation and customer confidence (Nitsure, 2003).

According to Hiltgen, Kramp & Weigold, (2006), Internet security problems present themselves in different forms and types of online attacks. Online attackers take advantage of existing weaknesses of some operating systems. They also make unauthorized entry into websites during a short time frame thus denying service to other customers. Breach of security could result in direct financial loss to the bank. This could arise when hackers access bank servers, retrieve and use confidential customer information. The security
threat may arise from internal sources like employees or externally from professional hackers (Kim, Prabhakar, & Kim, 2001).

Family Bank is at its youthful stage as a bank that has opted for a forward thinking approach, and technology utilising market trends to build its level and class in Kenya. Their dream is to transform local banking conventions in Kenya and Africa by bringing in new and earth breaking banking solutions with alternative channels. Family Bank resolved to meet up the banks goal through and m-Banking and e-Banking services. This has been the best course reaching its customers on 24/7 in real time, while offering a tailored approach through client profiling and segmentation. Though the banks internet banking answer previously did not meet the desires of the banks current or future goals, it decided to deploy a fresh e-Banking solution that consolidated client segmentation in one system, allowing independence in managing its services and service operation, as well as integration with their existing systems.

1.2 Problem Statement

The study looks at internet banking as a relatively new product that has been developed by commercial banks in Kenya. Businesses keep changing every day as a result of the internet influences. In the recent past, the growth in information technology has had massive of consequence on growth of more flexible modes of payment, banking services that are users’ friendly and leading to more resourceful and successful banking systems. Although internet banking makes the transaction faster and more convenient, several commercial banks in Kenya have not adopted this new banking product. The banks that have adopted the product have been faced with various obstacles thus necessitating a need for a study to ascertain the challenges facing internet banking and determine how they can be overcome and enhance a breakthrough in internet banking. (Howcroft et al., 2002).

The popularity of electronic banking is experiencing explosive growth as traditional banking practices are being transformed, placing opportunities for banks in Kenya to maximize their share in the market, gaining competitive edge and improving on their profitability. However there are serious challenges associated with internet banking. The challenges that banks may encounter while banking through the internet, due to which many still prefer to go directly to the banks instead of using this facility (Yoogalingam, 2009).
1.3 General Objective
The general objective of the study is to establish challenges facing internet banking.

1.4 Specific Objectives
1.4.1 To establish infrastructural challenges of internet banking.
1.4.2 To determine the legal and security challenges associated with internet banking.
1.4.3 To establish how customers’ exposure and literacy to computers and information technology pose a challenge to internet banking.

1.5 Importance of the Study
1.5.1 Scholars
The study is of great importance to a number of parties. First, the study will help fill significant gaps in knowledge about the internet banking landscape in Kenya. To the future researchers, the study will be of importance in that it will add up to the existing empirical literature on diffusion of financial innovations particularly internet banking.

1.5.2 The Government and Bank Regulators
The government and the banking industry regulator shall also benefit from the study. It will help the two institutions come up with good policies in as far as the internet banking element is concerned. The knowledge of the practical challenges hindering the success of internet banking shall help them tailor their policies and regulations.

1.5.3 Customers
The consumer of financial products and services shall also be the ultimate beneficiary of the study. The solutions suggested by the study shall see to it that the customer enjoys the merits that come with internet banking in an ideal internet banking situation.

1.5.4 The Banks
Bankers as well as society at large will be in a position to know where the banks lag in as far as the adoption of internet banking and provision of various products and services is concerned. This will help the banks come up with the best strategies that can help deal with the challenges of internet banking.
1.6 Scope of the Study
The study centers on the challenges facing internet banking in Kenya. It took place for a period of six months as from June 2016 to December 2016. The study was carried out at Family Bank Limited, by staffs in Nairobi region branches constituting of Tomboya, Industrial Area, Kenyatta Avenue, City Hall, Kenyata Intenational Airport, Laptrust Nairobi, Dagoreti Kariobangi, Gikombaa, Githurai, Westlands, Family Bank Towers And Ngara branches.

1.7 Definitions of Terms
1.7.1 Internet
The Internet is the global system of interconnected computer networks that use the Internet protocol suite to link billions of devices worldwide (Nath, Schrick, & Parzinger, 2001).

1.7.2 Internet Banking
This is conducting the banking operations in electronics and Internet (Nath, Schrick, & Parzinger, 2001).

1.7.3 System
This is a set of interrelated components, with a clear define boundaries, working together to achieve a common set of objectives (Nath, Schrick, & Parzinger, 2001).

1.8 Chapter Summary
This chapter looks at the background of the research, the problem statement, the objectives definition of terms, study questions, the objectives of the research and the significance of the study. This research is divided into two additional chapters. Chapter two discusses literature review of other studies and chapter three looks at the research methodology that was used in the study while chapter four looks at data collection, analysis and interpretation and chapter five looks at the summary of findings, the conclusions, recommendations and suggestions for further studies.
CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction
This chapter looks at the literature review of past studies. The review is based on the research objectives. It discusses in depth the infrastructural challenges, the legal and security challenges associated with Internet banking and customers’ exposure and literacy to computers and information technology challenge to internet banking which are the key research objectives.

2.2 Infrastructural Challenges Facing Internet Banking
2.2.1 Infrastructural Barriers

According to Chiemeke (2006), it is hypothesized that many of the factors affecting the successful adoption of new technologies such as e-banking are generic in nature and that the successful adoption of Internet technologies in part depends on how these are used in conjunction with the other technologies and management practices that form a ‘technology cluster’. However, the most critical barrier can be ascribed to the very limited information and communication infrastructure available in most countries, especially in Africa (Abor, 2004).

Gerrard & Cunningham, (2003) investigated and concluded that consumers shy away from using Internet banking due to poor infrastructure of the online banking system. Infrastructure barriers faced by the bank include cost expenses associated with purchasing equipment and networking, creation and maintenance of software and re-organization. Availability of qualified personnel and poor network infrastructure is also a challenge. Other threat facing internet banking is unreliable security, unreliable systems, intellectual property rights, legal framework, and uncertainty of the methods of payments. Internet banking prospects are affected by the technological capabilities of the company, the managerial skills effectiveness and the competitiveness.

Lack of reliable trust and redress systems and cross-country legal and regulatory differences also impede electronic banking adoption. Electronic banking adoption
however, work differently depending on the culture of the organization, the type of the organization and above all the training and people development needed in the organization (Chitura et al., 2008).

The high investment costs associated with acquisition and maintenance of ICTs, the lack of managerial and technical skills and reluctance on the part of companies to network with other enterprises, lack of executive support and concerns regarding the reliability of technology are barriers to the success of internet banking (Chircu & Kauffman, 2000).

The difficulty of providing an appropriate infrastructure for electronic banks, as well as the obstacles in updating the data to enable the customers to see the latest offers, are just two of the many challenges faced by internet banking Poor infrastructure is due to the limited skills with which to build e-banking services, the number of Internet users needed to build a critical mass of online consumers and the lack of familiarity with even traditional forms of electronic commerce, such as telephone sales and credit card use (Yuan et al 2010).

Sometimes, internet banking can be time consuming and tedious, as many websites take quite along time to get started. Besides this, your internet bank account may also take considerable time to get started. You may also encounter technical difficulties and connectivity problems while conducting internet banking transaction. Of course, there is a customer care department in almost every bank to look such matters, but often you may not be able to get the necessary assistance due to the congestion in the computer and telephone network (Suh & Han, 2002).

According to Ozuru et al. (2010), an adequate level of infrastructure and human capacity building are required before developing countries can adopt the global technology for their local requirements. For example, the review of the migration plan of Society for Worldwide Interbank Financial Telecommunications (SWIFT) to the internet shows that to date full migration has not occurred in many developing countries due to the lack of adequate infrastructure, working capital, and required technical expertise. Internet Banking- Benefits and Challenges in an Emerging Economy Broadly accepted electronic payment systems are another such example. Many corporate and consumers in some
developing countries either do not trust or do not have access to the necessary infrastructure to be able to process e-payments (Harris & Spence, 2002).

2.2.2 Technological Risks

Technology risks which are the risks that are associated with systems failures, processing errors, software defects, operating mistakes, hardware breakdowns, capacity inadequacies, network vulnerabilities, control weaknesses, security shortcomings, malicious attacks, hacking incidents, fraudulent actions, and inadequate recovery capabilities (Chitura et al., 2008). Information technology developments affect the risk profile of banks. Some banking risks are heightened whereas others are reduced. Operational, legal and strategic risks deserve particular attention. Internet increasingly puts investors at risk through exposure to cyber-crime, mis-selling and direct marketing of unregulated financial services and frauds. Operational risk can increase with technological developments to the extent that banks do not upgrade their systems of internal control to cope with the new operational environment (Giglio, 2002).

Customers expect internet banking services to be available 24 hours, every day of the year. In order to maintain high system availability, banks and their service providers should ensure that they have ample resources and capacity in terms of hardware, software and other operating capabilities. This should apply to both front-end and back-end systems. Further, to ensure fast recovery should a part or function malfunction or be damaged, banks should maintain standby hardware, software and network components (Maenpaa, 2006). Additionally, legal risk is linked to the uncertainty surrounding the applicable laws and regulations on a number of aspects relating to technology such as the legal status of remote banking, validity and proof of transactions and the respect of customers’ privacy (Giglio, 2002).

The ability to strengthen public support for e-finance: Historically, most e-finance initiatives in developing countries have been the result of cooperative efforts between the private and public sectors. For example, Singapore’s successful Trade Net system was a government-sponsored project. If the public sector does not have the necessary means to implement the projects it is essential that cooperative efforts between public and private
sectors, along with the multilateral agencies like the World Bank, be developed to facilitate public support for electronic finance related initiatives (Ozuru et al. 2010).

2.2.3 Cost Challenges

According to Chitura et al., (2008) the cost of adoption of e-banking has been high due to either requirements which are necessary and mandatory for the bank or risks associated with adoption of the e-banking as discussed below; The first requirement is regulatory licenses which are brought about by the fact that the Internet allows services to be provided from anywhere in the world, regulators require banks to provide their services from a remote location through the Internet to be licensed. Licensing is mostly suitable where administration is feeble and cooperation among a virtual bank and the home administrator is insufficient and this increases the operating costs. Licensing is the norm, for example, in Kenya where banks that have adopted these services are required to adhere to this strict rule. According to Aslam & Sarwar (2010) virtual bank accredited outside a country that desires to tender electronic banking services and receive deposits in other jurisdiction must first set up a licensed branch.

The legal requirements which arises from violations of, or non-conformance with laws, rules, regulations, or prescribed practices, or when the legal rights and obligations of parties to a transaction are not well established increases the cost of adopting and effectively adopting e-banking. Operational costs which refers to potential losses resulting from inadequate systems, management failure, faulty control, fraud and human error. Many of the recent large losses related to derivatives are the direct consequences of operational failure (Almogbil, 2005).

Operational risk includes” fraud,” for example when a trader or other employee intentionally falsifies and misrepresents the risk incurred in a transaction. Human factor risk is really a special form of operational risk. It relates to the losses that may result from human errors such as pushing the wrong button on a computer, inadvertently destroying files, or entering wrong value or the parameter input of a model. There is also a lack of knowledge on how these constructs interact in the development of trust for e-banking. It is important for bank managers to understand how trust for e-banking develops. Internet
banking may be costly but it is necessary for banks to stay profitable in the future (Aslam & Sarwar, 2010).

2.3 Legal and Security Issues Facing Internet Banking

2.3.1 Security Issues

According to Zieithmal et al, (2002) banks have to accurate record keeping, secure transitions and should also keep and maintain high level of privacy of information and provide services in due time in order for them to satisfy their online customers. According to Varaprasad, Sridharan, & Anandakuttan (2013), security and privacy issues have been widely argued to be the most significant barriers in the prospects of internet banking.

Security and privacy concerns raise trepidation among the customers regarding service functional utility, quality, bank selection and adoption of internet banking. Hernandez & Mazzon, (2007), have also revealed the similar reasons why customers shy away from using internet banking services. Internet is a public network of computers which facilitates information and flow of data with unrestricted access. Proper upgraded technology and system should be put in place by the banks for a secure environment for financial transactions (Maenpaa, 2006). The research by Calisir & Gumussoy (2008) found that men are more likely to use internet banking than women as women are found to be more concerned with privacy and security issues, however, this relationship was observed to be moderately significant.

Security risk arises on account of unauthorized access to a bank’s critical information such as risk management system, portfolio management system and accounting system. Hackers may breach the security causing financial loss to the bank. The hackers could have access and retrieve to the confidential customer information or implant virus to the system which may cause loss of data, tempering of customers’ information, theft, and disabling of a significant portion of bank’s internal computer system. Attackers may include unscrupulous vendors, hackers, disgruntled employees or even pure thrill seekers. It is therefore, necessary that banks critically assess all interrelated systems and have access control measures in place in each of them (Hernandez & Mazzon, 2007).
Information flowing or being transferred through the internet can be read and monitored by unauthorized persons unless they are protected. Data confidentiality and privacy is important even if the data is not being transferred through the internet. Glaessner, Kellermann, & McNevin (2002), found out that data residing in web servers or even banks’ internal systems are susceptible to corruption if not properly isolated through firewalls from Internet.

Banks may require outside service providers for the implementation, operation and maintenance of the internet banking systems if they lack expertise and this contribute to the operation and security risks. This is because the providers gain access to critical business information and bank’s system making them vulnerable. In such phenomena’s, the choice made by banks on the choice of vendor and contractual arrangement critical components of banks’ security. To reduce risks banks should educate their staff by offering trainings to them to avoid over dependencies on these vendors (Ziethmal et al, 2002).

Not updating bank’s system in keeping with the rapidly changing technology, increases operational risk because it leaves holes in the security system of the bank. Also, staff may fail to understand fully the nature of new technology employed. Further, if updating is left entirely at customers’ end, it may not be updated as required by the bank. Thus education of the staff as well as users plays an important role to avoid operational risk (Marlin, 2005).

Security has been widely recognized as one of the obstacle to the adoption of electronic banking and it is considered an important aspect in the debate over challenges facing internet banking (Furst, Lang & Nolle, 2002). The performance evaluation of e-banking website requires a model that enables us to address the various imperatives factors and criteria related to the quality and performance of e-banking websites. Due to the relative newness of this rapidly growing industry, banks as well as consumers had serious concerns about the security of Internet access to client accounts which was the biggest challenge (Lee, 2009).

The advances in Internet security and the advent of relevant protocols has put banks in perspective again as financial intermediaries and facilitators of complete commercial
transactions via electronic networks and especially via the Internet. Several studies including Shergill, (2005) suggest that security measures that are inconvenient for users may weaken electronic banking prospect. Dankwah, (2012) propose a distinction between theoretical and effective security. Theoretical security concerns the level of security that is technically possible; whereas effective security concerns the level of security achieved in practice, and is typically lower than theoretical security.

Calisir & Gumussoy, (2008) indicate that user adoption of E-banking is affected by perceived security. This supports a view of security as crucial to the overall usability of Electronic banking systems. Internet banking increases convenience, but as it also opens a bank to security issues. For example, an criminal might hack into the bank's server in order to acquire bank account data, or a software glitch might cause the bank to unwittingly distribute personal data to the wrong person. To make matters worse, technology is not static. Banks that use Internet banking have to constantly update their software and hardware to make sure that compatibility issues and increased knowledge of security systems do not increase their security risks. However there have been plenty of cases in which web surfers were accidentally exposed to the financial details of online bankers. Internet security had a setback when bank managers admitted a serious flaw in the system of the latest online banking operation. This flaw allowed customers to access account detail of other clients (Lee, 2009).

In common with many electronic surveys that point to information security being the number one concern for both business and consumers, this uptake is being challenged by concern of users and potential users towards the security and privacy of internet banking transaction as well as confidentiality regarding the processing of personal information. Consumers associate security risk with the loss of bank account or credit account numbers and passwords, which can result to loss of money. Clients are likely to buy only if they recognize that credit card and other susceptible information as secure. Earlier studies has revealed that apparent security risk is an vital predictor of internet banking acceptance (Lee 2009).

Security has to do with the possibility that consumers’ personal information will be disclosed either inside or outside the company. Consumer are troubled that the bank may distribute clients with other companies in the banking faction and thus use the
information to attempt to sell other products. Alleged worries of the disclosure of private information and thoughts of insecurity have a negative manipulation on internet banking services use (Howcroft et al., 2002). Nevertheless, with the progress in technology advancement, most banks have taken the sufficient measures to protect against any trouble associated to the protection of internet banking which can be costly over time. Customers can also follow some simple precautionary measures, like not disclosing the password and pin number to anyone, changing the password at regular intervals and installing antivirus software to ensure tight security measures (Shergill, 2005).

### 2.3.2 Legal Issues

Legal risk arises from non-compliance with, violation of, or non-conformance with laws, rules, regulations, or prescribed practices, or when the legal rights and obligations of parties to a transaction are not well established (Mattila, et al., 2003).

Uncertainty about the validity of some agreements formed through electronic media and law regarding customer disclosures and privacy protection leads to legal risks in internet banking. Customers who have inadequate information about their rights and obligations may not take precautions when using the online banking services. This leads to unwanted suits against the bank or other regulatory sanctions and disputed transactions (Akoh, 2001).

According to McKinney et al, (2002) due to the relatively new nature of Internet banking, rights and obligations in some cases are uncertain and applicability of laws and rules is uncertain or ambiguous, thus causing legal risk. To enhance customers’ services, banks may link their Internet site to other sites which may cause legal risks and may give an opportunity for hackers to linked sites to defraud a bank customer.

### 2.3.3 Ethical Issues

According to Shergill (2005), the number of people touched by and affected by this technology is enormous and is growing rapidly, especially with the increased availability of the Internet. This makes a target audience difficult to define and difficult to reach. The ethical issues themselves are also difficult to define, increasingly complex and diverse, and are growing as rapidly as the technology. Attitudes, perceptions and behavior among users of this technology leave much to be desired. Codes of ethics and professional
conduct vary from one professional organization to the next and are incomplete or obsolete. In addition, membership in these organizations makes up only a minuscule part of the relevant audience. Classes in computer ethics, when part of an information technology curriculum, don't appear to make much of an impact and reach only a small proportion of students who use information technology. (Aldas, Lassala, Ruiz ,& Sanz, 2009).

Financial and non financial banking transactions may be conducted online. However there are also several problems that come with online banking, including ethical issues. All international banking institutions now aware of problems caused by hackers, our connection between the bank and the computer or a mobile device is safe guarded by the Secure Sockets Layer. But we have to think about many more issues. If hacker has compromised our computer, simply they can take any information typed by using key logger technology (Shergill, 2005).

Still there are no any specific laws or ethics for online banking and because of that client happen to face some ethical issues, when they use their online banking facilities. So, clients have to think twice about their privacy issues. Hackers’ uses Trojans to remotely take any saved passwords customers might have used in the browser. As an example, hackers have stolen more than €36m from 30 banks in Europe by using a new two stage Trojan virus that spreads from a victim’s personal computer to their mobile phone (Chiemeke, 2006).

Hertzum, Jørgense, & Nørgaar, (2004) says, cyber sleuths and security authorities converge on how to best navigate these channels of uncertain dictates, common sense has proved to prevail. When in doubt, banks are advised to; contact the client for further explanation until every misconception is cleared, double check the authenticity to verify any deal that does not ring true. Customers should also ensure that their bank is on the same page with every transaction and seek legislative or litigation assistance that may warrant their reason for wanting to do this. There are also some situations like ethical dilemmas in online banking sector which are faced by clients. So ethical dilemmas guess that online banking users will stand for by common social standards, such as professional code of conducts, in order to get the decisions or selections ethically impossible (Almogbil,2005).
2.4 Customers’ Exposure and Literacy to Computers and Information Technology Facing Internet Banking

2.4.1 Customers’ Exposure and Literacy to Computers and Information Technology

Perhaps one of the greatest challenges to the adoption of Internet banking is the cultural reluctance to interface with business electronically reducing customers’ exposure to information technology. Such challenges remain major obstacles, limiting the potential benefits of Internet banking to both the banks and the consumers (Kuisma, Laukkanen & Hiltunen, 2007). Several researches have established that level of education has very large impact on the acceptance of internet banking, as the education level improve the possibility of adopting online services increases. Low level of education and literacy is therefore identified as a very significant barrier in diffusion of internet banking services (Yuan et al, 2010).

Lack of knowledge about the services offered on internet also hinders the account holders of a bank to adopt the online services. A study revealed that only 76% customers of a bank knew nothing or very little about services offered on internet by their bank. On the other side, almost 50% of bank managers were lacking clear understanding of their customers’ online information needs (Nitsure, 2003). Satisfaction or dissatisfaction among customers is determined by the customers’ interaction with information available on the bank’s web layout. Customers will not prefer to use internet banking services if their first online interaction is difficult (Van & Cavaye, 1999).

One of the most important contributing factors for adoption or acceptance of any innovative financial service or product is the creation of awareness among consumers for the service or product. In this context, Shergill, (2005) assert that consumers go through a process of knowledge, conviction decision, and confirmation before they are ready to adopt and use a product or service. Howard and Moore (1982) emphasize the importance of awareness for the adoption of any new innovation. They also indicated that there should be increasing promotional efforts on the part of banks to create a greater awareness of internet banking technology and its benefit. Most customers in India do not know how to become an Internet banking user, how to use the technology, and hence
feel insecure about Internet facility primarily, due to a lack of marketing effort on the part of banks. Sathye (1999) also studied the adoption of internet banking in Australia, and finds that security concerns and a lack of awareness stand out as the main reasons for the failure to adopt internet banking by sample respondents. Al-Sukkar and Hasan (2004) noted that a lack of awareness reduces the adoption rate of internet banking services in the Middle East. Creating greater awareness by showing customers the benefits of using new systems may encourage customers to adopt internet banking transactions.

Lichtenstein and Williamson (2006) show that many internet non-users mentioned not having known or thought about internet banking, nor have they seen the technology advertised in Australia. Some respondents remarked that they did not bank through the internet because they believed internet banking is too complicated or of little interest. This lack of awareness suggests the need for banks to create interest in internet banking, perhaps through an aggressive marketing campaign targeting non-adopters (Lichtenstein & Williamson, 2006).

2.4.2 Market Awareness About Internet Banking

Zhao et al. (2008) acknowledged that customers’ perception towards internet banking has been identified by many studies as one of the most influential barriers towards the adoption of internet banking. Customers perceive internet banking services more risky as compared to the conventional banking.

Researchers have identified several types of perceived risks including economic, functional, social and psychological risk influencing the pre-purchase decision making of a customer particularly in services. Nancy et al. (2001) identified a significant negative relationship between economic risk and adoption of internet banking. Wang et al. (2003) acknowledges that perceived economic risk is observed to be very customary and concern for financial loss during online transaction is found to be high.

According to Almogbil (2005) internet banking perceived function has a positive relationship with its adoption. In the developing nations the functional risk of internet banking was found to be higher due to its self-service and technical (Aslam & Sarwar, 2010). This is because of the illiteracy level which is high in the developing countries as compared to the developed countries, where perceived operating difficulty and chances of
incomplete transactions due to internet speed failure are recognized to be higher according to (Agarwal et al., 2009).

Most of the developing countries have soft and collectivist culture where concern for social values is high and among nations where internet density is low its image and perception is negative as compared to the nations with high internet density (Tayeb, 2005). According to Ram & Sheth, (1989) the negative attitude of society towards internet in developing countries increases social concerns and results as barrier in its adoption which ultimately may cause slow diffusion of internet banking services. Online banking is perceived to be hindering the social relationships which are developed during transactions based on interpersonal interaction at the physical service scape (Jansson & Letmark, 2005).

According to Arnould & Zinkhan, (2004) psychological inconvenience while switching from routine products to adopt innovation is found to be another significant barrier. Benamati & Serva, (2007) Accepts that in order to access internet banking services, the clientele aught to have information about the confidentiality, information encryption, hacking issues, passwords authenticity, and private information guard. The prospects of internet banking services and growth will increase if customers are made cognizant about the operation and functions of internet banking services.

Rotchanakitumnuai & Speece (2003) made a qualitative study in Thailand to look into the barriers to Internet banking adoption. They established that the consumers of Internet banking have more self-confidence in the trustworthiness of the system, while non-users are to a great extent more service mindful, and do not belief financial transactions made via Internet channels. Non-Internet banking users tend to have more negative management attitudes towards adoption and are more likely to claim lack of resources. Many empirical evidences recognizes that lack of knowledge about internet banking services and its benefits is a factor which accounts for low adoption rate and little success and growth of internet banking (Laforet & Li 2005).
2.4.3 Market Perception about Internet banking

Currently, customers are likely to make use of services and products they view to not only be cost efficient, but also have the most worth for their money. Overheads play a important function in the acceptance and implementation of Internet banking products and services. Clientele desire value for their wealth when it comes to Internet banking correlated products and services. The effect that Internet banking has on apparent ease and nurturing or building relations can be termed as major. The utility of technology can frequently be seen as unfriendly and not favorable to the institutionalization of long-term financial relations (Benamati & Serva, 2007). A research by Zinkhan, (2004) indicated that Internet banking is more suitable than conventional forms of banking. This finding also undoubtedly aligns with earlier analysis where respondents indicated that they have a preference of Internet banking over traditional forms of banking. Customers recognize that Internet banking is in many instances more suitable as banking can be performed 24 hours a day from whichever place.

Meeting and understanding the desires of financial institutions' Internet banking customers are important building blocks in establishing a long-term relationship, productive. Financial institutions need to appreciate that the advances in technologies in relation to the financial requirements and practice patterns of its clients. These results shows that every one affirmed that their Internet banking desires was met. These results emphasize the necessity for financial institutions to deliver better on the desires of the Internet banking client, particularly in the younger age (18-25) bracket. This might be a tricky duty as the Internet banking customers officially interact with the financial institutions by a visit a to branch far less than in the earlier times. This will absolutely influence the clientele view on internet banking positively (Yuan et al, 2010).

Awareness and education campaigns are key focal point areas which financial institutions ought to constantly invest in. Information ought to be effortlessly retrievable and communicated in a way that makes logic to a wider client base with varied languages and cultures. This will definitely influence the clientele viewpoint towards internet banking. A research by Zinkhan, (2004) found out that customers consider the services and products found inside the Internet banking realm removes the necessity for them to stopover a bank branch as 84% of the male respondents and 83% of the female respondents concurred.
with this information. Though the impartial responses were comparatively considerable, equally the male and female respondents stated that they deem that the level of service found inside branches is not better to that of Internet banking.

Service quality and reliability are important focal point areas which banks ought to invest in as these ‘softer’ issues are the building blocks to what shape the views of clients even in doing Internet banking interrelated tasks. The view of the clients can also be altered by friendly practice awareness program, cheaper charges, friendly practice, the best response and proper security to the services offered. A well-planned web site is as well supportive in facilitating friendly use as it reduces perceived risks concerns about internet banking practice (Benamati & Serva, 2007).

2.5 Chapter Summary

This chapter looks at studies that have been done before based on the research objectives. Its evident that limited research has been done on infrastructural challenges, the Legal and security challenges associated with Internet banking and customers’ exposure and literacy to computers and information technology challenge to Internet banking. Most of the studies focus on the challenges facing internet banking during adoption. It explains out that lack of reliable trust and redress systems and cross-country legal and regulatory differences also impede electronic banking adoption. Electronic banking adoption however, work differently depending on the culture of the organization, the type of the organization and above all the training and people development needed in the organization. It concluded that the high investment costs associated with acquisition and maintenance of Information Computer Technology, the lack of managerial and technical skills and reluctance on the part of companies to network with other enterprises, lack of executive support and concerns regarding the reliability of technology are barriers to the success of internet banking.

Most customers do not know how to become an Internet banking user, how to use the technology, and hence feel insecure about Internet facility primarily, due to a lack of marketing effort on the part of banks. This study looks at post adoption challenges facing internet baking in Kenya since no study has been done on the very same topic and if there is not published. Chapter three will look at the research methodology that will be used in the study to collect data.
CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction
This chapter looks at the methodology of the research study. This chapter focuses on the methodology that is used to carry out the study, which include; research design, target population, sampling design, data collection analysis and reporting, ethical issues in research and the limitations of the study.

3.2 Research Design
According to Mugenda, O. & Mugenda, A. (2003), descriptive research design is used when the problem has been well designed and where a researcher can engage in a study by going to the population of interest in order for the respondent to explain certain features about the problem under study. A research design is the structure, plan and approach of investigating, put into place so as to get answers to study questions. The study was conducted to determine the challenges facing internet banking in Kenya. The study used a descriptive research design. Cooper & Schindler (2006), asserts that a descriptive study is aimed at finding out where, what and how of an occurrence. Descriptive design therefore was appropriate for this study since it involved the procedures of collection and analysis of data from the members of a given sample which in this case was family bank staff in Nairobi.

3.3 Population and Sampling Design
3.3.1 Population
Population can be defined as the entire group of elements regarding which researchers look for inference about(Cooper & Schindler, 2006). Target population refers to the whole group of persons who comprise of common observable uniqueness (Mugenda, 2008). The more precise a population of concern is clear, the healthier the capability to explain and describe the behavior proposed to be deliberated. The target population which contributed to the collection of primary data is 500 Family Bank staff in Nairobi.
The target population was as follows:

### Table 3.1 Target population

<table>
<thead>
<tr>
<th>Category</th>
<th>Population (Frequency)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Branch Managers</td>
<td>35</td>
</tr>
<tr>
<td>Branch Supervisors</td>
<td>98</td>
</tr>
<tr>
<td>Customer service Officers</td>
<td>72</td>
</tr>
<tr>
<td>Tellers</td>
<td>165</td>
</tr>
<tr>
<td>Credit Officers</td>
<td>130</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>500</strong></td>
</tr>
</tbody>
</table>

*Source: Family Bank (2016)*

#### 3.3.2 Sampling Design

Mugenda, O. and Mugenda, A. (2003), explains that sampling is the process of choosing the study subjects or objects from a larger population. It is important because the method determines whether or not the study sample represents the entire population from which it was be drawn. According to Fink (2003), a sample is a proportion or subset of a large group called a population. A good sample is a small version of the population. A sample should be a representative of the whole population. From a population of 500 a sample of 10% was selected from the population.

#### 3.3.2.2 Sample Frame

With regard to Cooper & Schindler (2006), a sample frame is a group of all cases in the population from which a sample population is drawn. Denscombe (2010), a sampling frame should contain a complete and up to date list that comprise the population for the research A sample of respondents was drawn from a list of 500 staff of Family Bank in Nairobi.

#### 3.3.2.3 Sampling Technique

According to Denscombe (2007), Statified random sample is when every member of the population has an equal probability of being picked in relation to their proportion within the total population. The findings of the study are generalized to the study population. To obtain a sample the researcher used stratified random sampling method.
Stratified random sampling technique was applied since the population of concern is not homogeneous and can be subdivided into groups or strata of branch Manager, Branch Supervisors, customer service officer, tellers and credit officers to obtain the sample. A reduced number of individuals in a study lowers error, cost and workload hence making it easier to obtain high quality information (Cooper & Shindler, 2006).

3.3.2.4 Sample Size

The sample size is a portion of the total population (Cooper & Shindler, 2006). The sample size in a study is the total number of replicates or observations to take into consideration in a statistical sample. The sample size is vital in achieving the purpose of making an conclusion of a population from a known sample. According to Mugenda & Mugenda (2003) a sample ought to consist of between 10-30% of the population, and a superior population sample ought to be at least 10% and not more than 30% of the whole population. From the initial population of 500, a sample of 10% was selected from the population. According to Cooper & Schindler (2006), a sample is equivalent to the sample size, that would be reliable. The study got the information from a sample of 50 respondents.

Table 3.2 Sample Size

<table>
<thead>
<tr>
<th>Category</th>
<th>Population (Frequency)</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Branch Manager</td>
<td>35</td>
<td>4</td>
</tr>
<tr>
<td>Branch Supervisor</td>
<td>98</td>
<td>10</td>
</tr>
<tr>
<td>Customer service Officer</td>
<td>72</td>
<td>7</td>
</tr>
<tr>
<td>Teller</td>
<td>165</td>
<td>17</td>
</tr>
<tr>
<td>Credit Officer</td>
<td>130</td>
<td>13</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>500</strong></td>
<td><strong>50</strong></td>
</tr>
</tbody>
</table>

3.4 Data Collection Methods

This study collected Primary data for analysis. The selection of an instrument and tool depends mostly on the attributes of the research topic, subjects, problem question, design expected and objectives, expected data and results (Kothari, 2004). Cooper & Schindler (2006) explain that primary data is information gathered straight from the respondents and for this research questionnaires were used. The questionnaire designed for this study aimed at capturing demographic information and data based on the research objectives;
infrastructure challenges, legal and security challenges and customers’ exposure and literacy to computers and information technology challenges.

3.5 Research Procedure

Questionnaires were employed in the study to gather data. The questionnaire had equally open and closed ended questions. The close ended questions provide more planned responses to make possible concrete recommendations. The close ended questions were used to test the rating of various attributes and this helped in reducing the number of related responses in order to obtained more varied responses. The open ended questions provides extra information that might not have been captured in the close ended questions. The questionnaire was carefully designed and pre-tested with a few members of the population for further improvements. This was done in order to enhance its validity and accuracy of data collected for the study.

Prior to conducting the main study, a pilot study was conducted to test the reliability and validity of the research instrument. A Sample size of 5 respondents, (10% of the study sample) as recommended by Mugenda and Mugenda (2003) was selected and administered with the questionnaires. The response rate was 100%. The Cronbach’s Alpha Test was then conducted and all the three variables gave Cronbach’s Alpha values which were greater than 0.7. According to George and Mallery (2003), Cronbach correlation coefficients greater or equal to 0.7 are acceptable. Field (2005) observes that a Cronbach’s \( \alpha > 0.7 \) implies that the instrument provides a good measure. These results of the pilot test were not included in the final data analysis of the study.

Table 3.3: Reliability Test Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of Items</th>
<th>Cronbach’s Alpha Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructureal challenges</td>
<td>5</td>
<td>.796</td>
</tr>
<tr>
<td>Legal and security issues</td>
<td>5</td>
<td>.788</td>
</tr>
<tr>
<td>Customers’ Exposure and Literacy to Computers and Information Technology challenges</td>
<td>5</td>
<td>.785</td>
</tr>
</tbody>
</table>
3.6 Data Analysis Methods

Data analysis is the process of cleaning, transforming, analyzing, and modeling data gathered in a research. Data analysis model that was used in the research include both quantitative and qualitative techniques (Yates, Moore, & Daren, 2008). Data was coded according to different variables of the study for ease of data entry and interpretation. Descriptive Statistics and SPSS were used to help the researcher to illustrate the data and establish the amount used. The findings is presented using charts and tables. Quantitative data collected was analyzed by the use of descriptive statistics using Strategic package for social sciences (SPSS) and presented through percentages, means, standard deviations, frequencies and Karl Person’s coefficient of correlation. The findings were presented using frequency distribution tables and figures.

3.7 Chapter Summary

This chapter discusses research methodology that was used in the study. It highlights research design, size of the population, stratified random sampling technique, sample frame, and size. It also highlights data collection and analysis method that was used. The subsequent chapters presents the data collection analysis and interpretation result of the study. While chapter five presents the summary of findings recommendations and suggestions for further studies.
CHAPTER FOUR

4.0 RESULTS AND FINDINGS

4.1 Introduction

This chapter presents the analysis and interprets the findings obtained from the field based on the objective of the study. The objective of the study was to establish the challenges facing internet banking a case study of family bank limited in Nairobi. Descriptive statistics was used to discuss the findings of the study. To this end, the study administered questionnaires to 50 respondents out of which 46 filled and returned. The findings are presented in tables, pie chart, bar graph, figures, and interpretation thereafter.

4.2 Response Rate and Demographic Characteristics of the Respondents

4.2.1 Response Rate

The total questionnaires issued to respondents were 50, out of which only 46 were fully filled and returned while 3 declined to participate in the study while 1 was absent during the data collection. This implies that there was 92% response rate which is considered a good response rate. The study considered the frequency and percentages of variables under consideration.

4.2.2 Gender of the Respondents

The study sought to determine the gender of the respondent and therefore requested the respondent to indicate their gender. As shown in figure 4.1, it's evident that most respondents in the study were females who had a representation of 61% while the males were only 39% of the total participants. This is an indication that both genders were involved in this study and thus the finding of the study did not suffer from gender bias. This contradicts with the research by Calisir & Gumesoy (2008) who found that men are more likely to use internet banking than women as women are found to be more concerned with privacy and security issues, however, this relationship was observed to be moderately significant.
4.2.3 Age of the Respondents

The study sought to determine the age category of the respondents and requested them to indicate their age category. From table 4.1, majority of the study respondents were aged between 31 and 40 years with 37%, followed by respondents aged between 41-50 years and those who were below between 21-30 years with 28% and 20% respectively; respondents aged above 51 years were 15% of the total population in terms of age. This is an indication that respondents were well distributed in terms of their age and that young people are more enlightened with computer and internet technologies compared to their elder counterparts.

Table 4.1: Age of the Respondents

<table>
<thead>
<tr>
<th>Age</th>
<th>Freq.</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between 21-30 years</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>Between 31-40 years</td>
<td>17</td>
<td>37</td>
</tr>
<tr>
<td>Between 41-50 years</td>
<td>13</td>
<td>28</td>
</tr>
<tr>
<td>Above 51 years</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>100</td>
</tr>
</tbody>
</table>
4.2.4 Education of the Respondents
The studies sought to determine the educational levels of the respondent and requested them to indicate their education level and are summarized below. As shown in table 3, it is evident that 22% of the respondents in the bank were of diploma holders while undergraduate and graduate respondents had representations of 50% and 28% respectively. This is an indication that most of the respondents engaged in this study had attained degree level of profession thus had enough knowledge to understand and respond to the questions.

Table 4.2: Education of the Respondents

<table>
<thead>
<tr>
<th>Education levels</th>
<th>Freq.</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Certificate</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Diploma</td>
<td>10</td>
<td>22</td>
</tr>
<tr>
<td>Undergraduate</td>
<td>23</td>
<td>50</td>
</tr>
<tr>
<td>Graduate</td>
<td>13</td>
<td>28</td>
</tr>
<tr>
<td>Post graduate</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>100</td>
</tr>
</tbody>
</table>

4.2.5 Computer Courses Done by the Respondents
The study sought to determine whether the respondent have done computer courses and to what levels and requested them to indicate the whether they have done or not and are summarized below. As shown in figure 4.2 below, it’s evident that majority of the respondents in the bank had done computer courses with a representation of 87%. This implies that most of the respondents engaged in this study had vast knowledge on internet banking and the challenges facing internet banking, therefore they had enough knowledge to understand and respond to the questions.
As shown in table 4.3, it is evident that of those respondents who have done computer courses majority of them had attained certificate level evidenced by 40% of the respondents in the bank while 23%, 20% and 16% respectively were of diploma, professional and degree levels respectively. This is an indication that majority of the respondents engaged in this study had enough knowledge to understand and respond to the questions on challenges facing internet banking.

**Table 4.3: Level of Computer Courses**

<table>
<thead>
<tr>
<th>Computer courses</th>
<th>Freq.</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree</td>
<td>7</td>
<td>16</td>
</tr>
<tr>
<td>Diploma</td>
<td>9</td>
<td>23</td>
</tr>
<tr>
<td>Certificate</td>
<td>16</td>
<td>40</td>
</tr>
<tr>
<td>Professional</td>
<td>8</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>40</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

**4.2.6 Access to internet by the Respondents**

The study sought to determine whether the respondent have access to internet and requested them to indicate their responses and are summarized below. Among all the respondents used in this study, 91% access to internet while only 9% do not have access.
This implies that respondents engaged in this study had enough knowledge to understand and respond to the questions on challenges facing internet banking.

Table 4.4: Access to Internet by the Respondents

<table>
<thead>
<tr>
<th>Access to internet</th>
<th>Freq.</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>42</td>
<td>91</td>
</tr>
<tr>
<td>No</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>100</td>
</tr>
</tbody>
</table>

In this section, descriptive statistics was used to summarize data on infrastructural challenges, legal and security issues, customers’ exposure, literacy to computers and information technology. The participants were asked to respond to a set of questions based on their own experiences and knowledge on a five point likert scale, where 1=very good, 2= good 3= fair, 4= poor, 5= very poor.

4.3 Infrastructural barriers
This section provides an analysis of the infrastructural challenges at family bank Narobi, the participants were asked to respond to a set of questions on a five point likert scale. The first question was on how they rate the ease of access to the bank’s website. As shown in Table 5, the mean score for responses was 2.783 indicating that a majority of the participants rate it as good in their responses to the question. The standard deviation indicates that a majority of the responses did not vary from the mean by more than 0.8409. The second question sought to determine the extent to which they rate the ease of accessing internet banking Services. A mean of 2.43 suggests that a majority of the participants rate it as good. A standard deviation of 0.9086 indicates that the responses did not vary from the mean score. The third question asked participants how they would rate the reliability of the internet banking system. A mean score of 2.391 implies that majority of the respondents rate it as good. The responses did not vary from the mean score by more than 0.977. Further the fourth question sought to establish the extent to which they rank the efficiency of the online banking services. Majority of the participants
rate it good with a mean score of 2.348 and standard deviation of 0.8224 implies that they were in cohesive in their responses.

The fifth question sought to establish the extent to which they rate the cost effectiveness of the online banking services. Majority of the participants rate it good with a mean score of 2.326 and standard deviation of 0.8447 implies that they were similar and did not vary in their responses.

**Table 4.5: Infrastructural Challenges**

<table>
<thead>
<tr>
<th>Infrastructural Challenges</th>
<th>N</th>
<th>MEAN</th>
<th>STANDARD DEVIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 How do you rate the ease of access to the bank’s website?</td>
<td>46</td>
<td>2.783</td>
<td>.8410</td>
</tr>
<tr>
<td>2 How do you rate the ease of accessing internet banking Services?</td>
<td>46</td>
<td>2.413</td>
<td>.9086</td>
</tr>
<tr>
<td>3 How do you rate the user friendliness of the online banking services?</td>
<td>46</td>
<td>2.391</td>
<td>.9770</td>
</tr>
<tr>
<td>4 How do you rate the response time of internet banking system?</td>
<td>46</td>
<td>2.348</td>
<td>.8224</td>
</tr>
<tr>
<td>5 How would you rate the reliability of the internet banking system?</td>
<td>46</td>
<td>2.326</td>
<td>.8447</td>
</tr>
<tr>
<td>6 How would you rate the availability of internet in the country?</td>
<td>46</td>
<td>2.283</td>
<td>.8073</td>
</tr>
<tr>
<td>7 How would you rate the cost effectiveness of the online banking services?</td>
<td>46</td>
<td>2.130</td>
<td>.6186</td>
</tr>
<tr>
<td>9 How do you rank the efficiency of the online banking services?</td>
<td>46</td>
<td>2.000</td>
<td>.9189</td>
</tr>
<tr>
<td>10 How would you rate online banking as compared to the conventional banking?</td>
<td>46</td>
<td>1.826</td>
<td>.7395</td>
</tr>
</tbody>
</table>
The sixth question sought to determine the extent to which they rate the availability of internet in the country. A mean of 2.283 suggests that a majority of the participants rate it as good. A standard deviation of .8073 indicates that the responses did not vary from the mean score.

More so the seventh question sought to determine the extent to which they rate the user friendliness of the online banking services. A mean of 2.130 suggests that a majority of the participants rate it as good. A standard deviation of .6186 indicates that the responses did not vary from the mean score. The study also asked the participants in the eighth question the extent to which they rate online banking as compared to the conventional banking. The majority of the participants rate it as good with a mean score of 2.000 and standard deviation of .9189. Lastly the study in the ninth question sought to rate the ease of access to the bank's website. A mean score of 1.8261 and standard deviation of .91894 implies that the majority of the participants rate it as very good and their responses were in agreement.

4.3.1 Correlation between infrastructural challenges and internet banking

Table 4.6: Correlation between infrastructural challenges and internet banking

<table>
<thead>
<tr>
<th>Infrastructural challenges</th>
<th>Pearson Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet banking</td>
<td>.621**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>46</td>
</tr>
</tbody>
</table>

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

Correlation analysis was done to investigate the existence and nature of relationship between infrastructural challenges and internet banking. From the analysis, it was noted that there was a strong significant and positive correlation ($r = 0.621$). The significance level is 0.000 which is below 0.05 ($p < 0.05$) implying that the between infrastructural challenges and internet banking is significant. The finding is consistent with Abor (2004)
who explains out that the most critical barrier in Africa can be ascribed to the very limited information and communication infrastructure available in most countries. The findings also support Gerrard & Cunningham, (2003) who investigated and concluded that consumers shy away from using Internet banking due to poor infrastructure of the online banking system. Infrastructure barriers faced by the bank include cost expenses associated with purchasing equipment and networking, creation and maintenance of software and re-organization.

4.4: Legal And Security Issues

This section provides an analysis of the legal and security issues at family bank Nairobi, the participants were asked to respond to a set of questions on a five point likert scale where 1=very good, 2= good 3= fair, 4= poor, 5= very poor.

Table 4.7: Legal and Security Issues

<table>
<thead>
<tr>
<th>Legal and Security Issues</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 How secure do you find online banking transactions?</td>
<td>46</td>
<td>2.261</td>
<td>.9294</td>
</tr>
<tr>
<td>12 How would you rate the privacy of customers’ online banking transaction?</td>
<td>46</td>
<td>2.239</td>
<td>.6389</td>
</tr>
<tr>
<td>13 Rate the level of confidentiality and security of customers’ personal information?</td>
<td>46</td>
<td>2.152</td>
<td>.5150</td>
</tr>
<tr>
<td>14 How would you rate the security of money through internet banking?</td>
<td>46</td>
<td>2.000</td>
<td>.8165</td>
</tr>
<tr>
<td>15 How would you rate the adherence to Banking act in relation to internet banking?</td>
<td>46</td>
<td>1.957</td>
<td>.6309</td>
</tr>
<tr>
<td>16 How would you rate the adherence to ethical standards in relation to internet banking?</td>
<td>46</td>
<td>1.783</td>
<td>.7576</td>
</tr>
</tbody>
</table>
The tenth question was on how secure you find online banking transactions. As shown in Table 4.6, the mean score for responses was 2.261 indicating that a majority of the participants rate it as good in their responses to the question. The standard deviation indicates that a majority of the responses did not vary from the mean by more than .9294. The eleventh question sought to determine the extent to which they rate the privacy of customers’ online banking transaction. A mean of 2.239 suggests that a majority of the participants rate it as good. A standard deviation of .6389 indicates that the responses did not vary from the mean score. Furthermore the twelfth question asked participants how they would you rate the privacy of customers’ online banking transaction. A mean score of 2.152 implies that majority of the respondents rate it as good.

The responses did not vary from the mean score by more than .5150. The thirteenth question asked participants how they would rate the security of money through internet banking. A mean score of 2.00 implies that majority of the respondents rate it as good. The responses did not vary from the mean score by more than .8165. The fourteenth question sought to establish the extent to which they would rate the adherence to Banking act in relation to internet banking. Majority of the participants rate it as very good with a mean score of 1.957 and standard deviation of .6309 implies that they had similar responses. Lastly the fifteenth question sought to establish the extent to which they rate the adherence to ethical standards in relation to internet banking. Majority of the participants rate it good with a mean score of 1.783 and standard deviation of .7576 implies that they were in agreement and did not vary. 4.5.1 Correlation between Legal and Security Issues and internet banking
4.4.1 Correlation between Legal and Security Issues and internet banking

Table 4.8: Correlation between Legal and Security Issues and internet banking

<table>
<thead>
<tr>
<th>Internet banking</th>
<th>Legal and Security Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pearson Correlation: 0.604**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed): 0.001</td>
</tr>
<tr>
<td></td>
<td>N: 46</td>
</tr>
</tbody>
</table>

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

The study further conducted a Correlation analysis to investigate the existence and nature of relationship between Legal and Security Issues and internet banking. From the analysis, it was noted that there was a strong significant and positive correlation ($r = 0.604$). The significance level is 0.001 which is below 0.05 ($p < 0.05$) implying that the relationship between Legal and Security Issues and internet banking is significant. The finding is consistent with McKinney et al, (2002) who argue that due to the relatively new nature of Internet banking, rights and obligations in some cases are uncertain and applicability of laws and rules is uncertain or ambiguous, thus causing legal risk. This finding is further congruent to that of Calisir & Gumussoy, (2008) who indicate that user adoption of E-banking is affected by perceived security. This supports a view of security as crucial to the overall usability of Electronic banking systems. Internet banking increases convenience, but as it also opens a bank to security issues.

4.5 Customers’ Exposure and Literacy to Computers and Information Technology

This section provides an analysis of the customers’ exposure and literacy to computers and information technology at family bank Nairobi, the participants were asked to respond to a set of questions on a five point likert scale where 1=very good, 2= good 3= fair, 4= poor, 5= very poor.
Table 4.9: Customers’ Exposure and Literacy to Computers and Information Technology

<table>
<thead>
<tr>
<th>Activities</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>17  How conversant are customers with the computer technology?</td>
<td>46</td>
<td>2.783</td>
<td>.8410</td>
</tr>
<tr>
<td>18  How conversant are customers with the internet technology?</td>
<td>46</td>
<td>2.435</td>
<td>.8603</td>
</tr>
<tr>
<td>19  Before opening customers’ online banking account how helpful is the information provided by the bank?</td>
<td>46</td>
<td>2.326</td>
<td>.8958</td>
</tr>
<tr>
<td>20  How would you rate the accessibility of information about internet banking?</td>
<td>46</td>
<td>2.304</td>
<td>.8398</td>
</tr>
<tr>
<td>21  How do you rate the relevance of the information provided on the internet banking website to the customer needs?</td>
<td>46</td>
<td>2.174</td>
<td>.7088</td>
</tr>
<tr>
<td>22  How updated is the information provided on the website?</td>
<td>46</td>
<td>2.022</td>
<td>.8025</td>
</tr>
<tr>
<td>Total aggregate</td>
<td>46</td>
<td>2.3407</td>
<td>0.8247</td>
</tr>
</tbody>
</table>

Firstly the sixteenth question was on how they rate how conversant are customers with the computer technology. As shown in Table 5, the mean score for responses was 2.783 indicating that a majority of the participants rate it as good. The standard deviation indicates that a majority of the responses did not vary from the mean by more than .8410. The seventeenth question sought to determine the extent to which they rate how conversant are customers with the internet technology. A mean of 2.435 suggests that a majority of the participants rate it as good. A standard deviation of .8603 indicates that the responses did not vary from the mean score.
The eighteenth question asked participants how helpful is the information provided by the bank before opening customers’ online banking account. A mean score of 2.326 implies that majority of the respondents rate it as good. The responses did not vary from the mean score by more than .8958. Furthermore the nineteenth question sought to establish the extent to which they rate would the accessibility of information about internet banking. Majority of the participants rate it good with a mean score of 2.304 and standard deviation of .8398 implies that they were in agreement cohesive in their responses to the question.

The twentieth question sought to establish the extent to which they rate the relevance of the information provided on the internet banking website to the customer needs. Majority of the participants rate it good with a mean score of 2.1739 and standard deviation of .7088 implies that they were in agreement and did not vary as shown. The twenty-first question sought to determine the extent to which they rate how updated is the information provided on the website. A mean of 2.022 suggests that a majority of the participants rate it as good. A standard deviation of .8025 indicates that the responses did not vary from the mean score thus were cohesive. The study lastly asked respondents some of the other challenges they face internet banking services other than those asked in the questionnaire above from the study findings lack customer awareness, poor internet speed, lack of internet banking alerts, poor market penetration and reception of internet banking services, illiteracy among the customers, were the challenges they encounter wit

### 4.5.1 Correlation between Customers’ Exposure and Literacy to Computers and Information Technology and Performance of Commercial Banks.

Table 4.10: Correlation between Customers’ Exposure and Literacy to Computers and Information Technology and internet banking.

<table>
<thead>
<tr>
<th>Internet banking</th>
<th>Customers’ Exposure and Literacy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
</tbody>
</table>

*. Correlation is significant at the 0.01 level (2-tailed).
Additionally, the study sought to establish the relationship between Customers’ Exposure and Literacy to Computers and Information Technology and internet banking. The results indicate the existence of a strong significant and positive relationship ($r = 0.593$) between Customers’ Exposure and Literacy to Computers and Information Technology and internet banking. The significance level is 0.000 which is below 0.05 ($p < 0.05$) implying that the relationship between Customers’ Exposure and Literacy to Computers and Information Technology and internet banking is significant. The findings are congruent with Ram & Sheth, (1989) who found out that the negative attitude of society towards internet in developing countries increases social concerns and results as barrier in its adoption which ultimately may cause slow diffusion of internet banking services. Benamati & Serva, (2007) accepts that in order to access internet banking services, the clientele aught to have information about the confidentiality, information encryption, hacking issues, passwords authenticity, and private information guard. The prospects of internet banking services and growth will increase if customers are made cognizant about the operation and functions of internet banking services.

4.6 Chapter Summary

Correlation analysis to investigate the existence and nature of relationship between infrustructural challenges, Legal and Security Issues, Customers’ Exposure and Literacy to Computers and Information Technology with internet banking was conducted. From the analysis, it was noted that there was a strong significant and positive correlation ($r = 0.621, 0.604$ and $0.593$) in all respectively and the significance level in all is below 0.05 ($p < 0.05$) implying that the relationship between them and internet banking is significant. The findings reveal that a majority of the respondents agree that lack of customer awareness, poor internet speed, lack of internet banking alerts, poor market penetration and reception of internet banking services, illiteracy among the customers, were the challenge encountered with in the banking industry. Further findings of this study reveals that a majority of the respondents agree that Infrastructural barriers are not key challenges facing internet banking as shown by the aggregate mean of 2.2778 and standard deviation of .8308 implies that the respondents responses were cohesive. This is attributed to competition and transformation in technological advancements in the banking industry necessitating huge investment on internet banking infrastructure.
Furthermore the study reveals that majority of the respondents on legal and security issues rate them as exceptional good thus there’s compliance to the set rules, regulations and controls by the bank as shown by their rating with the aggregate mean of 2.065 and standard deviation of 0.7147 implies that the respondent’s responses were in agreement. In order to enhance employee customer loyalty, satisfaction and retention security and legal issues have to be well set and adhered to.

The most important contributing factors in the success of adoption or acceptance of any innovative financial service or product is the creation of awareness among consumers for the service or product. study revealed that majority of the respondents on customers’ exposure and literacy to computers and information technology rate them as good thus customers are well exposed and are literate on the use of computers and information technology as shown by their rating with the aggregate mean of 2.3407 and standard deviation of 0.8247 implies that the respondent’s responses were in agreement.
CHAPTER FIVE

5.0 SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction
The study assessed the challenges facing internet banking in Kenya. The research study sought to address three specific research questions; what are infrastructural barriers of internet banking in Kenya? What legal and security issues are associated with internet banking in Kenya? What is the level of consumer exposure and literacy to computer and information technology in Kenya? What is the level of market awareness and perception about internet banking in Kenya? This chapter presents a summary of the major findings, discussions, conclusions and recommendations with respect to the study objectives and further research study.

5.2 Summary
Internet banking has been a success in the baking industry none the less it has its fair share of challenges and many potential problems, it is therefore necessary for banks to develop a sound atmosphere for internet banking. The study assessed the challenges facing internet banking in Kenya. With the adoption of a questionnaire data collection tool, the data from 46 respondents were used in the analysis. Quantitative data collected was analyzed by the use of descriptive statistics using SPSS. Strategic package for social sciences (SPSS) and presented through percentages, means, standard deviations, frequencies and Karl Person’s coefficient of correlation

The results of the research had some significant implications in terms of their connection to the literature. The findings were consistent with the conceptual framework, although there were several emergent themes not included in the model. The relationship between them and internet banking is significant. Correlation analysis was done to investigate the existence and nature of relationship between infrastructural challenges and internet banking. From the analysis, it was noted that there was a strong significant and positive correlation

The findings of this study reveals that a majority of the respondents agree that infrastructural barriers are not key challenges facing internet banking as shown by the aggregate mean of 2.2778 and standard deviation of 0.8308 implies that the respondents' responses were cohesive. This is attributed to competition and transformation in
technological advancements in the banking industry necessitating huge investment on internet banking infrastructure. Banks have always been in the forefront of harnessing technology to improve their products, services and efficiency. This finding is in agreement with Ozuru et al. (2010) who explain that the importance of electronic payment system in any country can never be over emphasized, due to the dramatic transformation in technological advancements that is being experienced by the global financial industry.

Furthermore the study reveals that majority of the respondents on legal and security issues rate them as exceptional good thus there’s compliance to the set rules, regulations and controls by the bank as shown by their rating with the aggregate mean of 2.065 and standard deviation of 0.7147 implies that the respondent’s responses were in agreement. In order to enhance employee customer loyalty, satisfaction and retention security and legal issues have to be well set and adhered to.

This is because security and privacy concerns will raise fear among them regarding service functional utility, quality, bank selection and adoption of internet banking. The apparent fears of the revelation of private information and thoughts of insecurity encompass a negative effect on internet banking services use. However, with the advance in technology, many banks have to the adequate measure to avoid any problem related to the security of internet banking which can be expensive over time. Customers can also follow some simple precautionary measures, like not disclosing the password and pin number to anyone, changing the password at regular intervals and installing antivirus software to ensure tight security measures. A legal issue arises from non-compliance with, violation of, or non-conformance with laws, rules, regulations, or prescribed practices, or when the legal rights and obligations of parties to a transaction are not well established.

Lastly the study revealed that majority of the respondents on customers’ exposure and literacy to computers and information technology rate them as good thus customers are well exposed and are literate on the use of computers and information technology as shown by their rating with the aggregate mean of 2.3407 and standard deviation of 0.8247 implies that the respondent’s responses were in agreement. The most important contributing factors in the success of adoption or acceptance of any innovative financial service or product is the creation of awareness among consumers for the service or
product. Most studies have established that the level of education has incredibly considerable impact on the implementation of internet banking, as the education level increases the probability of adopting online services augment. Low level of education and literacy is therefore identified as a very significant barrier in diffusion of internet banking services.

According to Almogbil (2005) internet banking perceived function has a positive relationship with its adoption. In the developing nations the functional risk of internet banking was found to be higher due to its self-service and technical (Aslam & Sarwar, 2010). This is because of the illiteracy level which is high in the developing countries as compared to the developed countries, where perceived operating difficulty and chances of incomplete transactions due to internet speed failure are recognized to be higher according to (Agarwal et al., 2009).

The study asked respondents some of the other challenges they face internet banking services other than those asked in the questionnaire above from the study findings lack customer awareness, poor internet speed, lack of internet banking alerts, poor market penetration and reception of internet banking services, illiteracy among the customers, were the challenges they encounter with.

5.3 Discussion

5.3.1 Infrastructural Barriers

Banking institutions are key components of most economies as it they referred to as the engine of growth and also conduits towards promoting economic growth. E-banking revolution and inventions have changed the business of banking quickly. World over banks are reorienting their business strategies towards new opportunities offered by internet-banking. Through internet banking, banks have changed their strategic behaviors and they have been able scale borders such as sufficient infrastructure to support it. Internet has continued to provide a versatile platform for business entities to offer their services to customers in a convenient manner. Internet banking and e-commerce are closely related systems with huge interactions and their development needs social identity, a reliable law system, well-built network, and powerful government support.

The difficulty of providing an appropriate infrastructure for electronic banks, as well as the obstacles in updating the data to enable the customers to see the latest offers, are just
two of the many challenges faced by internet banking. Poor infrastructure is due to the limited skills with which to build e-banking services, the number of Internet users needed to build a critical mass of online consumers and the lack of familiarity with even traditional forms of electronic commerce, such as telephone sales and credit card use (Yuan et al 2010).

Infrastructure barriers faced by the banks include cost expenses associated with purchasing equipment and networking, creation and maintenance of software and re-organization. Availability of qualified personnel and poor network infrastructure is also a challenge. Other threat facing internet banking is unreliable security, unreliable systems, intellectual property rights, legal framework, and uncertainty of the methods of payments. Internet banking prospects are affected by the technological capabilities of the company, the managerial skills effectiveness and the competitiveness. The high investment costs associated with acquisition and maintenance of ICTs, the lack of managerial and technical skills and reluctance on the part of companies to network with other enterprises, lack of executive support and concerns regarding the reliability of technology are barriers to the success of internet banking.

Technology risks which are the risks that are associated with systems failures, processing errors, software defects, operating mistakes, hardware breakdowns, capacity inadequacies, network vulnerabilities, control weaknesses, security shortcomings, malicious attacks, hacking incidents, fraudulent actions, and inadequate recovery capabilities. Information technology developments affect the risk profile of banks. Some banking risks are heightened whereas others are reduced. Operational, legal and strategic risks deserve particular attention. Internet increasingly puts investors at risk through exposure to cyber-crime, mis-selling and direct marketing of unregulated financial services and frauds. Operational risk can increase with technological developments to the extent that banks do not upgrade their systems of internal control to cope with the new operational environment (Giglio, 2002).

Adequate level of infrastructure and human capacity building are required before developing countries can adopt the global technology for their local requirements. For example, the review of the migration plan of Society for Worldwide Interbank Financial Telecommunications (SWIFT) to the internet shows that to date full migration has not occurred in many developing countries due to the lack of adequate infrastructure, working
capital, and required technical expertise. Internet Banking- Benefits and Challenges in an Emerging Economy Broadly accepted electronic payment systems are another such example. Many corporate and consumers in some developing countries either must have access to the necessary infrastructure to be able to process e-payments.

Customers expect internet banking services to be available 24 hours, every day of the year. In order to maintain high system availability, banks and their service providers should ensure that they have ample resources and capacity in terms of hardware, software and other operating capabilities. This should apply to both front-end and back-end systems. Further, to ensure fast recovery should a part or function malfunction or be damaged, banks should maintain standby hardware, software and network components.

5.3.2 Legal and Security Issues

Internet banking banking increases convenience, but as it also opens a bank to security issues Earlier studies has revealed that apparent security risk is an vital predictor of internet banking acceptance (Lee 2009). Financial and non financial banking transactions may be conducted online. However there are also several problems that come with online banking, including ethical issues. All international banking institutions are aware of problems caused by hackers, our connection between the bank and the computer or a mobile device is safe guarded by the Secure Sockets Layer. But we have to think about many more security issues. where a hacker has compromised our computer, simply they can take any information typed by using key logger technology. Legal risk is linked to the uncertainty surrounding the applicable laws and regulations on a number of aspects relating to technology such as the legal status of remote banking, validity and proof of transactions and the respect of customers privacy. Security of banking transactions, validity of electronic contract and customers’ privacy, which have all along been the concerns of both bankers and supervisors who assumed different dimensions have given that Internet is a public domain, not subject to control by any single authority or group of users. It also poses a strategic risk of loss of business to those banks who do not respond in time, to this new technology, being the efficient and cost effective delivery. Security and privacy concerns raise concern among the customers and employees regarding service functional utility, quality, bank selection and adoption of internet banking. Security has to do with the possibility that consumers” personal
information will be disclosed either inside or outside the company. Consumer are
troubled that the bank may distribute clients with other companies in the banking faction
and thus use the information to attempt to sell other products. Alleged worries of the
disclosure of private information and thoughts of insecurity have a negative manipulation
on internet banking services use (Howcroft et al., 2002).

Nevertheless, with the progress in technology advancement, most banks have taken the
sufficient measures to protect against any trouble associated to the protection of internet
banking which can be costly over time. Customers can also follow some simple
precautionary measures, like not disclosing the password and pin number to anyone,
changing the password at regular intervals and installing antivirus software to ensure tight
security measures (Shergill, 2005).

Internet banking increases convenience, but as it also opens a bank to security issues. For
example, a criminal might hack into the bank's server in order to acquire bank account
data, or a software glitch might cause the bank to unwittingly distribute personal data to
the wrong person. To make matters worse, technology is not static. Banks that use
Internet banking have to constantly update their software and hardware to make sure that
compatibility issues and increased knowledge of security systems do not increase their
security risks.

Legal risk arises from non-compliance with, violation of, or non-conformance with laws,
rules, regulations, or prescribed practices, or when the legal rights and obligations of
parties to a transaction are not well established Mattila, et al., (2003). Uncertainty about
the validity of some agreements formed through electronic media and law regarding
customer disclosures and privacy protection leads to legal risks in internet banking.
Customers who have inadequate information about their rights and obligations may not
take precautions when using the online banking services. This leads to unwanted suits
against the bank or other regulatory sanctions and disputed transactions (Akoh, 2001).
converge on how to best navigate these channels of uncertain dictates, common sense has
proved to prevail. When in doubt, banks are advised to; contact the client for further
explanation until every misconception is cleared, double check the authenticity to verify
any deal that does not ring true. Customers should also ensure that their bank is on the
same page with every transaction and seek legislative or litigation assistance that may warrant their reason for wanting to do this. There are also some situations like ethical dilemmas in online banking sector which are faced by clients. So ethical dilemmas guess that online banking users will stand for by common social standards, such as professional code of conducts, in order to get the decisions or selections ethically impossible (Almogbil, 2005).

5.3.3 Customers’ Exposure and Literacy to Computers and Information Technology

A research by Zinkhan, (2004) indicated that Internet banking is more suitable than conventional forms of banking. This finding also undoubtedly aligns with earlier studies where respondents indicated that they have a preference of Internet banking over traditional forms of banking. Customers recognize that Internet banking is in many instances more suitable as banking can be performed 24 hours a day from whichever place.

Meeting and understanding the desires of financial institutions' Internet banking customers are important building blocks in establishing a long-term relationship, productive. Financial institutions need to appreciate that the advances in technologies in relation to the financial requirements and practice patterns of its clients. Today, customers are likely to make use of services and products they view to not only be cost efficient, but also have the most worth for their money. Overheads play an important function in the acceptance and implementation of Internet banking products and services. Clientele desire value for their wealth when it comes to Internet banking correlated products and services.

The effect that Internet banking has on apparent ease and nurturing or building relations can be termed as major. Numerous studies have established that the level of education has incredibly important impact on the embracing of internet banking, when the education level increase the possibility of adopting online services augment. Low level of education and literacy is therefore identified as a very significant barrier in diffusion of internet banking services (Yuan et al, 2010).

Awareness and education campaigns are key focal point areas which financial institutions ought to constantly invest in. Information ought to be effortlessly retrievable and communicated in a way that makes logic to a wider client base with varied languages and cultures. This will definitely influence the clientele viewpoint towards internet banking. A
research by Zinkhan, (2004) found out that customers consider the services and products found inside the Internet banking realm removes the necessity for them to stopover a bank branch as 84% of the male respondents and 83% of the female respondents concurred with this information. Though the impartial responses were comparatively considerable, equally the male and female respondents stated that they deem that the level of service found inside branches is not better to that of Internet banking.

Satisfaction or dissatisfaction among customers is determined by the customers’ interaction with information available on the bank’s web layout. Customers will not favor the use internet banking services if their initial online interface was problematic clienteles have a habit of to making use of services and products they see to not only be cost efficient, but that also have the maximum value for their money. Costs play a significant role in the adoption of Internet banking products and services. The influence that Internet banking has on the apparent suitability in fostering or building relations can be labeled as substantial. The use of technology can frequently be seen as objective and not conducive to the formation of long-term financial associations.

A well-planned web site is as well supportive in facilitating friendly use as it reduces perceived risks concerns about internet banking practice. Service quality and reliability are important focal point areas which banks ought to invest in as these ‘softer’ issues are the building blocks to what shape the views of clients even in doing Internet banking interrelated tasks. The view of the clients can also be altered by friendly practice awareness program, cheaper charges, friendly practice, the best response and proper security to the services offered.

5.4 Conclusion
5.4.1 Infrastructural Challenges
The first research objective was on Infrastructural barriers in the Kenyan banking industry. The findings of this study reveals that challenges faced by internet banking services include lack customer awareness, poor internet speed, lack of internet banking alerts, poor market penetration and reception of internet banking services, illiteracy among the customers, were the challenges they encounter. Infrastructural barriers are not key challenges facing internet banking as shown by the aggregate mean of 2.2778 and standard deviation of .8308. This is attributed to competition and transformation in
technological advancements in the banking industry necessitating huge investment on internet banking infrastructure.

5.4.2 Legal And Security Issues
The second research objective was on Legal and security issues in the Kenyan banking industry. Legal and security issues are exceptional good thus there’s compliance to the set rules, regulations and controls by the bank as shown by their rating with the aggregate mean of 2.065 and standard deviation of 0.7147 majority of the respondents. Internet banking increases convenience, but as it also opens a bank to security issues. For example, a criminal might hack into the bank's server in order to acquire bank account data, or a software glitch might cause the bank to unwittingly distribute personal data to the wrong person.

5.4.3 Customers’ Exposure and Literacy to Computers and Information Technology
The third research objective was on customers’ exposure and literacy to computers and information technology in the Kenyan banking industry respondents rate them as good thus customers are well exposed and are literate on the use of computers and information technology as shown by their rating with the aggregate mean of 2.3407 and standard deviation of 0.8247. The influence that Internet banking has on the apparent suitability in fostering or building relations can be labeled as substantial. The use of technology can frequently be seen as objective and not conducive to the formation of long-term financial associations. Customers will not favor the use internet banking services if their initial online interface was problematic clienteles have a habit of to making use of services and products they see to not only be cost efficient, but that also have the maximum value for their money.
5.5 Recommendations

5.5.1 Recommendation for Improvement
From the summary and conclusion, the study recommends the Banks should therefore Continually train their employees who will in turn pass the knowledge to their customers therefore the issue of illiteracy negative reception and lack customer awareness is dealt with. Training will help improve confidence as well as improve innovation. By training its employees they will realize the benefits of e-banking services both to them and to their customers hence improve on the adoption of e-banking services.

5.5.1.1 Infrustructural Challenges
Banks should seek to collaborate with internet service providers so as to gain high quality internet infrastructure to enable the banks offer better quality services and at the same time enhance internet accessibility thus deal with the challenge of poor internet speed and lack of internet banking alerts.

5.5.1.2 Legal and Security Issues
There is the government to enact a legislation further on internet banking to deal with uncertainty in the validity of some agreements formed through electronic media and law regarding customer disclosures and privacy protection leads to legal risks in internet banking thus protect the users and suppliers from legal tussles ensuring uniformity and growth in the banking sector, the banks should put in place mechanisms to prevent hacking of systems and thus prevent loss of customer money leading to improved customer confidence.

5.5.1.3 Customers’ Exposure and Literacy to Computers and Information Technology
Banks to put in place extensive customer awareness programs on internet banking to enhance market penetration and reception of internet banking services, and reduce illiteracy among the customers. They should collaborate with internet providers to ensure a faster internet speed provision and internet banking alerts to customers.

5.5.2 Suggestion for Further Research
From the general objective of the study and the research findings, the researcher suggests further studies be done on the very same topic but to cover a wider scope such as the all banks in kenya in order to confirm if the research findings of this study will be the same further study be conducted based on the customer’s perspective.
REFERENCES


Kose, A. (2009). “Determination of reasons affecting the use of internet banking through logistic regression analysis”, Marmara University, Turkey


APPENDICES

Appendix I: Questionnaire

The purpose of this questionnaire is to help in collecting data for study on the challenges facing internet banking. This questionnaire assists in data collection for academic purpose. The research intends to give an analysis of challenges facing internet banking.

Do not incorporate identification or names in the questionnaire.

Please answer every question as in outlined by using a tick (✓) in the option that applies.

SECTION A

A. BACKGROUND INFORMATION

(Please tick appropriately)

1. Gender
   
   Male ( )
   Female ( )

2. Age
   
   21-30 ( )
   31-40 ( )
   41-50 ( )
   51 and above ( )

3. Level of education
   
   Secondary ( ) Certificate ( ) Diploma ( ) Undergraduate ( ) Graduate ( ) Postgraduate ( )
   
   Other (s) specify……………………

4. Have you done any computer courses? YES ( ) NO ( )
   
   If Yes, to what level? .................................................................

5. Do you have access to internet? YES ( ) NO ( )
**B. INFRASTRUCTURAL CHALLENGES**

Please rank the following bank activities by ticking appropriately.

<table>
<thead>
<tr>
<th>Activities</th>
<th>Very good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 How do you rate the ease of access to the bank’s website?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 How do you rate the ease of accessing internet banking Services?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 How do you rate the user friendliness of the online banking services?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 How do you rate the response time of internet banking system?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 How would you rate the reliability of the internet banking system?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 How would you rate the availability of internet in the country?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 How would you rate the cost effectiveness of the online banking services?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13 How do you rank the effectiveness of the online banking services?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 How would you rate online banking as compared to the conventional banking?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
C. LEGAL AND SECURITY ISSUES

Please rank the following by ticking each activity appropriately.

<table>
<thead>
<tr>
<th>15</th>
<th>Activities</th>
<th>Very good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>How secure do you find online banking transactions?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>How would you rate the privacy of customers’ online banking transaction?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Rate the level of confidentiality and security of customers’ personal information?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>How would you rate the security of money through internet banking?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
D. CUSTOMERS’ EXPOSURE AND LITERACY TO COMPUTERS AND INFORMATION TECHNOLOGY

Please rank the following ticking appropriately.

<table>
<thead>
<tr>
<th>Activities</th>
<th>Very Good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>21 How conversant are customers with the computer technology?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22 How conversant are customers with the internet technology?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23 Before opening customers’ online banking account how helpful is the information provided by the bank?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24 How helpful do you find the information provided on the internet banking website to the customers?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 How do you rate the relevance of the information provided on the internet banking website to the customer needs?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26 How updated is the information provided on the website?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What are some of the other challenges you facing internet banking services?

___________________________________________________________________
___________________________________________________________________
Appendix II: Work Plan

<table>
<thead>
<tr>
<th>Research Activity</th>
<th>Week 1</th>
<th>Week 2-6</th>
<th>Week 7</th>
<th>Week 8</th>
<th>Week 9</th>
<th>Week 10</th>
<th>Week 11</th>
<th>Week 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Proposal collection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Development of research project</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-testing of research instruments</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approval of research proposal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data collection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data cleaning, analysis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presentation of findings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preparation of final project</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Report writing and Presentation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>