

**DETERMINANTS OF THE ADOPTION OF INTERNET BANKING PROJECT IN  
KENYA COMMERCIAL BANKS: A CASE OF KCB BANK, NAIROBI COUNTY**

**BY  
KNIGHT OMARI**

**A Research Project Submitted in partial Fulfillment of the Requirements for the  
award of the Degree of Master of Arts in Project Planning and Management of the  
University of Nairobi**

**2020**

**DECLARATION**

This research project is my original work and it has not been submitted for an academic writing in any other university.

Signature.....

Date.....

Knight Winfridah Omari  
L50/82958/2015

This research project has been submitted for examination with my approval as university supervisor.

Signature.....

Date.....

Dr. ANGELINE MULWA  
Senior Lecturer  
School of Open and Distance Learning  
Department of Open Learning  
University of Nairobi

## **DEDICATION**

I dedicate this work to my dear family; my husband Ben Omari and Son's Henry Omari and Aiden Miranyi for their continued support and understanding during my long absence, both during coursework and research process.

## **ACKNOWLEDGEMENT**

This research-project is a final product of a research process that was supported and facilitated by various institutions and individuals. Firstly, I thank the University of Nairobi, particularly the Department of Open Learning for enrolling and giving me the opportunity to undertake the Degree of Master of Arts in Project Planning and Management. Secondly, I thank my Supervisor Dr. Angeline for her commitment and valuable guidance, which supported me from inception to finalization of the study.

Thirdly, I remain indebted to all the KCB management and staff for offering their time to participate in data collection activities including responding to self-administered questionnaires. Fourthly, I acknowledge the support of my academic colleagues by reviewing and critiquing my work, thereby, enabling me to improve the content and quality of the thesis. I also thank my research assistants for supporting data collection, as well as data processing and analysis and editing. Finally, my special thanks to my parents, Mr. Harrison Omari and Mrs Florence Omari, for the support and facilitation of this study. For those who facilitated the study in one way or the other, but have not been mentioned individually, kindly accept my gratitude.

## TABLE OF CONTENTS

<b>DECLARATION</b> .....	ii
<b>DEDICATION</b> .....	iii
<b>ACKNOWLEDGEMENT</b> .....	iv
<b>TABLE OF CONTENTS</b> .....	v
<b>LIST OF TABLES</b> .....	viii
<b>LIST OF FIGURES</b> .....	ix
<b>LIST OF ABBREVIATIONS AND ACRONYMS</b> .....	x
<b>ABSTRACT</b> .....	xi
<b>CHAPTER ONE: INTRODUCTION</b> .....	1
1.1 Background to the Study .....	1
1.1.1 Internet Banking .....	2
1.1.2 Internet Banking Implementation in Commercial Banks in Kenya .....	3
1.2 Research Problem.....	4
1.3 Objective of the Study.....	5
1.4 Research Questions .....	6
1.5 Significance of the Study .....	6
1.6 Assumption of the Study.....	7
1.7 Limitations of the Study.....	7
1.8 Delimitations of the Study.....	7
1.9 Definition of Significant Terms .....	7
1.10 Organization of the Study .....	8
<b>CHAPTER TWO: LITERATURE REVIEW</b> .....	9
2.1 Introduction .....	9
2.2 Adoption of Internet Banking .....	9
2.3 Economic Factors and Adoption of Internet Banking.....	10
2.4 Staff Attributes and Adoption of Internet Banking.....	12
2.5 Organization IT Infrastructure and Adoption of Internet Banking .....	13
2.6 Theoretical Foundations of the Study .....	13
2.6.1 Technology Acceptance Model .....	14
2.6.2 Transaction Cost Economics Theory.....	14

2.6.3 Unified Theory of Acceptance and Use of Technology (UTAUT).....	15
2.7 Conceptual Framework .....	15
2.8 Summary of Knowledge Gaps .....	18
<b>CHAPTER THREE: RESEARCH METHODOLOGY .....</b>	<b>19</b>
3.1 Introduction .....	19
3.2 Research Design .....	19
3.3 Target Population .....	19
3.4 Sample Size and Sampling Procedure.....	21
3.4.1 Sample Size .....	21
3.4.2 Sampling Procedure.....	22
3.5 Data Collection Instruments.....	22
3.5.1 Pilot Testing of the Instrument .....	22
3.5.2 Validity of the Instrument.....	23
3.5.3 Reliability of the Instruments .....	23
3.6 Data Collection Procedures .....	23
3.7 Data Analysis Techniques .....	24
3.8 Operationalization of Variables.....	24
3.9 Ethical Considerations.....	26
<b>CHAPTER FOUR: DATA ANALYSIS, PRESENTATION, INTERPRETATION</b>	
<b>AND DISCUSSION .....</b>	<b>27</b>
4.1 Introduction .....	27
4.2 Questionnaire Return Rate .....	27
4.3 Background Information of Respondents .....	27
4.3.1 Gender of the Survey Participants .....	27
4.3.2 The Age Group Categories of the Survey Participants.....	28
4.3.3 Education Background of the Respondents .....	28
4.4 Economic Factors and Adoption of Internet Banking Technology.....	29
4.5 Staff Attributes and the Adoption of Internet Banking at KCB Bank Group .....	30
4.6 Knowledge and Ability to Use Internet Banking Technology .....	31
4.7 IT Infrastructure and Adoption of Internet Banking at KCB Bank Group .....	32
4.8 Inferential Statistics of Adoption of Internet Banking .....	34

<b>CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS.....</b>	<b>36</b>
5.1 Introduction .....	36
5.2 Summary of Findings .....	36
5.3 Conclusion.....	38
5.3.1 Level of Technology and Adoption of Internet Banking .....	38
5.3.2 Economic Factors and Adoption of Internet Banking .....	38
5.3.3 Staff Traits and Adoption of Internet Banking .....	38
5.3.4 IT infrastructure and Adoption of Internet Banking.....	38
5.4 Recommendations for Further Studies .....	39
<b>REFERENCES.....</b>	<b>40</b>
<b>APPENDICES .....</b>	<b>44</b>
Appendix I: Introduction Letter .....	44
Appendix II: Research Questionnaire .....	45
Appendix III: NACOSTI Research Permit .....	49

## LIST OF TABLES

Table 2.1: Summary of Major Gaps .....	18
Table 3.1: Target Population.....	20
Table 3.2: Sample Size .....	21
Table 3.3: Operationalization Variables .....	25
Table 4.1: Response Rate.....	27
Table 4.2: Respondent’s Gender distribution .....	28
Table 4.3: Summary distribution of participant age .....	28
Table 4.4: Education background of the survey participants.....	29
Table 4.5: Economic Factors and Determine Adoption of Internet Banking Technology	29
Table 4.6: Staff Attributes that Determine the Adoption of Internet Banking at KCB Bank Group .....	30
Table 4.7: Staff Competency in Computer Use .....	31
Table 4.8: Knowledge and Ability to Use Internet Banking Technology .....	32
Table 4.9: Specialized Training on Banking Systems .....	32
Table 4.10: Current Internet Banking Systems at KCB Meet the Market Needs .....	33
Table 4.11: KCB Bank Group Effectively and Efficiently Invested in the Internet Banking .....	33
Table 4.12: Model Summary of Influence of Independent Variables on Dependent Variable .....	34
Table 4.13: Model Coefficients .....	35



## LIST OF FIGURES

Figure 1.1: Conceptual Model for Technology Acceptance .....	14
Figure 2.1: Conceptual Framework .....	17

## LIST OF ABBREVIATIONS AND ACRONYMS

ATM	Automated teller machines
CFC	Controlled foreign corporation
HCI	Human Computer Interface
I&M	Investments and Mortgage
ICT	Information communication Technology
IT	Information technology
KCB	Kenya commercial bank
MFI	Micro Finance Institutions
NACOSTI	National Council for Science and Technology and Innovation,
NBS	Nottingham Building Society
NIC	<i>National Industrial Credit</i>
PC	Personal Computer
TAM	Technology Acceptance Theory
US	United States

## ABSTRACT

The research-project intended to probe the determinants of the adoption of internet banking project in financial institutions: a case of KCB bank, Nairobi County. The Central Bank of Kenya (CBK) regulates the operations of the banking industry in the country, including 42 for-profit banks and 12 microfinance among others. In addition, the regulatory body supervises a mortgage financial institution and finance organizations such as forex bureaus and credit agencies. The advent of innovative solutions in the information technology has expressively changed the operations and delivery of services by banks in addition to saving costs and improving efficiency. The intentions of the investigations was to scrutinize the elements that sway the uptake of internet banking programme by the institutions of finance in Nairobi County, with specific focus on the Kenya Commercial Bank (KCB). The objectives of the study include to establish the level that technology influences adoption of internet banking system at KCB Bank, determine weight of economic factors in adapting internet banking system, establish the degree that staff and customer contribute in adoption of internet banking systems and identify the extent to which the organization IT infrastructure determines the adoption of internet banking at KCB Bank group. The findings of this research were to highlight the trending customer behavior in regard to the introduction of internet banking thus help develop appropriate support policies and systems. The Technology Acceptance Theory (TAM) advised the theoretical understandings of the research. A descriptive research model guided the solicitation of data from 102 permanent KCB staff, drawn from 36 branches across the region of Nairobi. A questionnaire was the main research instrument used. Piloting of the tools targeted 12 individuals working in the KCB and the results were used to verify the reliability and validity. The empirical data from the main survey was organised, cleaned and analysed using SPSS version 22 to generate descriptive and inferential statistics that were presented in tables, charts and narratives. The descriptive statistics and regression analysis were performed to determine the association between predictor and response variables. The investigations were performed in lieu of ethical considerations. The economic factors, IT infrastructure and staff attributes were significant predictors in the adoption of internet banking by KCB. The findings indicated that the banks are more likely to accept internet-banking programs provided they are efficient and sustainable.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background to the Study

The dynamic and evolutionary aspects of the world today require great organizations to constantly adapt and compete in the ever-changing business environment in order to remain relevant and efficient in delivery of customer service and products. The technological business models have dramatically changed the way institutions attract and retain customers and has eliminated the geographical bottlenecks that were a challenge in the previous generations. In cases where the structural and normative elements of a business have adopted technology, customers' satisfaction in terms of convenience and delivery speed have greatly increased. White and Harrison (2004) supports this position by saying that the utilization and adoption of modern technologies by organizations have dramatically increased their businesses competitiveness and as such are able to develop very attractive services and products that meet customer needs. In the same regard, banks have digitized their products in order to remain efficient and relevant to customer demands.

Information and communication technology (ICT) projects have become a crucial tool for the banks. The effects of globalization have increased competition across the spectra forcing the institutes to be proactive in innovation. The ICT has redesigned the operational and delivery systems of banks. In order to compete with global competition and match the global development, the banks have to focus on the excellence of customer service delivery. Banks also have to invest and focus on ICT services for diminishing the operation cost. As ICT project implementation has many advantages as better, convenience and comfortable service, remote reach, time saving, deliver variety of value added products and services. There is a significant effect of flexible and user friendly banking service on the ICT growth and development.

Information and communication technology has reinvigorated the model of internet banking and customers find the medium more attractive and efficient as compared to the conventional modes of banking. The implementation of ICT platforms in business portfolio and expansion strategies has made the world a global village. Thus implantation of ICT

projects and integration with banking services has gained extensive ground around the globe. ICT project implantation in banks and financial institutions offers the banking industry a new leading edge of opportunities and challenges. Successful project implementation of ICT bank based practices depends on a number of factors both external and internal such as staff characteristics, economic factors and bank infrastructure.

### **1.1.1 Internet Banking**

This is the utilization of internet in the delivery of services by banks. Customers use the innovations to open bank accounts and fulfill other vital needs through the technology (Owens & Robertson, 2000). Internet banking, also referred to as E-banking, has benefited both the banks and customers, as it is a “one step service and information unit”. The structures of the ICT has enable the E-banking to deliver consistent and efficient customer services due to its 24 hours availability coupled with very short customer service time and reduced error rates (Papazoglou & Georgakapoulos, 2003).

The revolution of information technology (IT) has changed every aspect of human being's life including banking. For over a decade” (Abbasi and Weigand, 2017) Information technologies have significantly affected every industry including the banking industry (Kim et al., 2016). Multiple elements in the main body must cooperate under the Internet financial environment in order to realize the transfer of funds from supply to demand. The development of internet technology has had an impact in all businesses including the banking sector, which has somehow forced the adoption of internet banking by banks (Chiemeke et al., 2006).

Other scholars have varying views in the background of internet banking, according to Santouridis and Kyritsi (2014), the birth of internet banking can be traced back in 1990, when the first online banking service was offered by the Californian Bank Wells Fargo. According to Cronin (1998), online banking services started in New York in 1981 when four major banks; Citibank, Chase Manhattan, Chemical and Manufacturers Hanover offered home banking services for their customers. In the UK the first online banking services was in 1983, at the Bank of Scotland for customers of the Nottingham Building Society (NBS) (Cronin, 1998; Imola & Claudia, 2014).

In the 1990s internet banking services included viewing the statement of accounts, bill payments and bank transfers (Asifulla, 2016). Before 1995, only one financial institution had internet banking and after May 1995, fifty financial institutions had web banking and 5 million households using banking online services. By 2002, there were 14,000 financial institutions worldwide with web sites with more than 100 million households using internet banking (Anesti, 2004). The internet banking was established during the e commerce period. With the upsurge of internet For instance in the US, in the third quarter of 1999, 20% of the banks were offering internet banking which was expected to grow to 45% in 2001 (Anesti, 2004).

According to Romi (2015), in 2013 a 423.5 million people accessed online banking sites within an internet audience; by region North America 45%, Europe 37.8%, Latin America 25.1%, Asia 22% and the Middle East and Africa 8.8%. Several pieces of legislation have also been introduced in this area of internet banking to support the sector. The basic concept is a product of the e-commerce systems being used in several businesses world over. Currently there are several e-banking systems and websites all over the world (Aljawarneh, 2017).

According to Santouridis and Kyritsi (2014), The Banks belong to an information-intensive industry that is can be extensively influenced by information technology. In response the banking, industry has been particularly affected by the internet explosion by providing an additional conduit for both promotion and delivery of services. Incidentally, the perspective of banking products and services is nothing new than traditional banking services delivered through an electronic communication backbone which is the Internet.

### **1.1.2 Internet Banking Implementation in Commercial Banks in Kenya**

ICT advancement in Kenya commercial banks has a noteworthy value on the finance industry. The programs are embedded in the institutions structural systems as well as culture. The ICT programs implanted by banks has recalibrated the models of designing and marketing of financial products. In addition, the internal control mechanisms have become more efficient, effective and better evaluators of risk and thus the banks have extended their reach geographically to customers and other diverse markets.

The culture of internet banking is becoming common across the banking spectra in Kenya. Kipkech (2009) opines that the technology has provided offered banks with more flexibility in product design and thus cheaper. In addition, the technology has provided customers with greater channel choices thus efficient and convenient (Kiyeng, 2003). According to Njuguna, Ritho, Olweny and Wanderi (2012), internet banking was first used in the year 2000 in Kenya with notable increase, as banks intensify marketing and the infrastructures. Kenya is in the forefront of harnessing ICT in that almost two thirds of the population has access to the internet (Choudrie et al., 2017).

Even though the strategic benefits of E-banking eclipse the utilization costs, a number of bottlenecks have hindered commercial banks from fully digitizing their banking systems. Wambui (2012) notes that the hidden challenges associated with internet banking have prevented financial institutions from furthering the uptake of the technology and thus unable to exploit the strategic opportunities that are present in the business environment. The structural and normative bottlenecks vary across the banks and so are the challenges in adoption of the technology (Anyim and Munyoki, 2010). The levels of support, competency and technological expertise among the management and banking personnel vary across the spectra and therefore the institutions are unable to address gaps in equal terms.

The position of commercial banks in the financial sector and economy remain vital. Majority of banks have succeeded in utilizing the E-banking services and thus customers are able to access services over the internet at remote locations. However, in other markets, the struggle for profitability and sustainable by internet-only banks have remained a real prospect.

## **1.2 Research Problem**

Adoption of internet and digital banking projects is becoming a very important factor in trying to explain growth and development exhibited by banks in the current technological era. The dearth in contextualizing the implication of innovation technologies has provoked the study. Secondly, the research and empirical evidence on the impact of technology

factors on financial performance of financial institutions is still wanting (Mabrouk & Mamoghli, 2010).

According to Gitugu (2012) despite the fact that internet banking project implementation makes the transaction faster and more convenient, several commercial banks in Kenya are yet to fully adopt this new banking product. The banks that have adopted the product have been faced with various obstacles leading to poor application of internet banking services. According to Paul (2009), the key challenges that the banking industry in Kenya face are, technological infrastructure, customer attributes and economic factors.

In spite of the above stated issues, there is a dire need for continued adoption and implementation of information technology projects due to the great capabilities and radical changes that banking businesses stand to gain. Noteworthy development has been witnessed in the banking arena, resulting in widespread use of the internet-based tools and electronic banking channels, in several parts of the world. The internet banking technology has led banks and financial institutions to improve effectiveness of distribution channels by reducing the transaction costs and significantly increasing the speed of service (Kim et al., 2016).

The banking consumers are mainly focused on a well-coordinated system of banking which supports their needs. Internet related innovations that automate teller amenities enables prompts delivery of services and reduce costs. Several factors are at play which determine the adoption of internet banking within the banks and the clientele which require to be investigated. Hence, the study investigated the determinants to the adoption of internet banking in financial institutions; a case of KCB Bank, Nairobi County.

### **1.3 Objective of the Study**

The thesis project intends to examine the determinants of the adoption if internet banking project in the financial institutions in KCB Bank, Nairobi County.

In addition, the investigations will focus on the following specific goals;

- i. To determine the extent to which economic factors influence adoption of internet banking project in KCB Bank in Nairobi County.



- ii. To determine the extent to which staff attributes determine the adoption of internet banking project at KCB Bank in Nairobi County.
- iii. To identify the extent to which the organization IT infrastructure determines the adoption of internet banking project at KCB Bank in Nairobi County.

#### **1.4 Research Questions**

- i. What is the effect of economic factors on the adoption of internet banking project at KCB Bank, Nairobi County?
- ii. How do staff attributes determine the adoption of internet banking project at KCB Bank, Nairobi County?
- iii. To what extent does the banks IT infrastructure determine the adoption of internet banking project at KCB Bank, Nairobi County?

#### **1.5 Significance of the Study**

This study provides a realistic position on the determinants of internet banking among the financial institutions thus providing the banking industry in the internet-banking acceptance, enable appropriate review of the banking strategies and review the determinants of the internet banking.

The findings of this research provided better insights into the customer behavior in regard to the internet banking thus help the bank develop appropriate policies to support the system. Information from the empirical studies shows that ease of use is being a leading factor for customers forming a positive attitude towards internet banking adoption, which ultimately leads to the intention to use internet banking (Dash, 2017).

The study, like any other research, will contribute to knowledge hence better understanding of the internet banking concept and practices. The study will help fill considerable gaps in existing knowledge about the Internet banking landscape.

The study will benefit bank consumer on financial products and services by relying on the suggested solutions by the study to improve their uptake in the internet banking precept.

### **1.6 Assumption of the Study**

The investigator reserved that the KCB bank staff were honest when responding to the questions, they had have knowledge on internet banking to provide the required information and the records and other required study documents were available and accessible.

### **1.7 Limitations of the Study**

The research-project used questionnaires for KCB bank staff. The limitations in the questionnaire was associated with question placement, designed and administration of the questionnaire. However, to overcome this challenge the researcher used multiple approaches to gather data including observation in order to triangulate the findings.

The other limitation of study was movement and interaction with KCB Bank staff due to covi-19 but to overcome this the researcher ask questions through calling the respondent and having online meetings (TEAMS).

### **1.8 Delimitations of the Study**

The group of respondents are within the limited space of the KCB bank premises; branches in Nairobi that have good experience working with varying systems, equipment and guidelines. This provides them with specific understanding of KCB bank systems and values.

### **1.9 Definition of Significant Terms**

The following section entails definition of terms as used in this study;

**Adoption of internet banking** is where they establish an online banking system and support its link to the client to enable access and transact with their accounts as desired.

**Economic factors** are the general wellbeing of the economy to support the banks client base and improved banking activities.

**Staff attributes** is the general computer related knowledge of clients and customers to enable operational capacities and motivation to use internet banking.

**IT infrastructure** is the ability of the bank to purchase, install and operation in IT based system which is generally expensive and requires high level technical capacities for operations and security.

**Technology** is the level of modernization within an organization that is likely to augment their desire to adopt to internet banking

**Internet banking** refers to where a bank customer uses internet enabled gadgets to access and transact with their bank accounts using personal computer (PC) or mobile phone and web-browser.

**M-banking** is a system of conducting banking services by use of mobile phone.

### **1.10 Organization of the Study**

The research project focused on examining of the determinants in adoption of internet banking in KCB Bank. The first chapter deals with both the study background and problem statement. Within the problem of the study, the knowledge gap is proffered. Chapter one further describes various elements including the intentions, goals and queries that the investigator wishes to address. The premises and relevance of the investigations, together with limitations, basic assumptions, and definition of noteworthy footings is also discussed in the episode.

Chapter two covers review of related literature which included areas such as the influence of internet banking technology, economic factors and benefits that drive adoption, transformation attributes among staff and customers, technology aptitude among the staff and customers, organization readiness in the adoption of internet banking. The chapter also focused on the theoretical and conceptual frameworks.

The third episode describes the philosophical framework that informs the choice of design, approaches, methods, processes and procedures applied to source, process and analyse data. Also, the type of population, sampling procedures and quality inspections such as validity and reliability are discussed.

Chapter four covers the research findings which includes analysis, presentation, through figures, tables and narrative findings of the study.

The fifth episode summarizes the results and conclusions. Also, the researcher's recommendations and possible proposals for future research are discussed.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

The section involves evaluation of extant knowledge on the concept of internet banking, influence of bank infrastructure, economic factors and benefits that drive adoption, transformation attributes among staff, summary of review of related literature conclusion and finally ends with Theoretical Framework and conceptual framework

#### **2.2 Adoption of Internet Banking**

The changing dynamics of markets have pressured the commercial banks to adopt the innovative technologies in order to remain competitive and relevant. The banking-based retail system remains popular for many banks and customers. The internet technology however, had redefined the design and delivery of banking services to customers (Wang et al., 2003). The internet banking architecture remains similar to that of a traditional one except customers use computers and not paper to access and operate their bank accounts. The sustainability of the financial institutions therefore is pegged on the adoption of the electronic systems of operation (Tan & Teo, 2000).

The consumer behaviour in general determines the institutes of internet banking (Hanafizadeh, Keating, & Khedmatgozar, 2014). Knowledgeable consumers prefer convenient and faster channels of communication and connections as it enables them to

save on time and costs. (Bellman et al., 1999; Dellaert and Kahn, 1999). Majority of bank customers perceive internet banking to be very accessible and convenient, provided one has internet connections and thus banks must utilize such opportunistic innovations in order to meet the growing demands and attract new customers. Nissenbaum (2004) opines that internet banking has been the greatest game changer in banking systems despite security and privacy issues that mirror the IT sector in general. Majority of consumers hold the view that the associated benefits of internet banking far surpass the risks (Miyazaki and Fernandez, 2001).

Banks gauge the efficacy of innovations before adopting them in the delivery of services. Thornton and White (2001) supports the view by explaining that organizations are friendlier to technologies that their staff and consumers can learn and understand very easily. The internet banking programs are friendly to use and therefore institutions have adopted it in order to fasten the processing periods. In addition, the staff need to be comfortable in using the innovations in their day-to-day settings in order to reduce human error aspects. As such, the establishments have trained their employees on usage and adoption of internet banking technologies in order to adapt the emerging consumer behavior.

The service consumers also value convenience in accepting a new technology. ACNielsen, 2005 confirms this notion by saying that consumers easily accept innovations that are perceived to be convenient and mobile. Organizations aim to provide timeless services since consumers are in constant demand for services even at the dead of a night (Pew, 2003). The capabilities of internet banking to offer convenient services all day saves customers from cuing in the banking halls. The convenience in using the technology therefore has influenced banks to adopt the innovation.

### **2.3 Economic Factors and Adoption of Internet Banking**

The economic benefits include lower operational costs of banks, potentially lower margins and expand reach through self-service by customers. For the customers internet banking

makes access to finance from banks attractive; ease of use, lower costs of financing, convenience, time saving and operational efficiency (Romi, 2015).

A number of factors such as convenience, speed and cost motivate consumers to accept internet related bank services (Al-Soufi et al., 2013). The management of the internet banking for the banks derives several benefits from it (Shah and Clarke, 2009). Their use remain fundamental in supporting and retaining customers which is prerequisite for any business. The business must find out what different customers want and if they are using available technology to provide the best for them.

According to Shah and Clarke (2009), modern business environment customers need a superior alternative options. They want the traditional banking services, augmented by the convenience of online capabilities and stronger focus on banks improving personal relationships with the customers. Thus the bank offering extra services means wider choices and convenience for customers which improves customer services. Internet banking avails services for 24 hours; widespread options of internet related gadgets including mobile phones mean the customers can conduct their financial transactions virtually anywhere and anytime. According to Chiemeké et al. (2006), the driving forces of internet banking among customers are better access to the services, better prices and higher privacy. Customers want services that work within their limits such as time and access as well.

According to Shah and Clarke, (2009) a view which is complemented by Kim et al. (2016), indicates that Internet banking attracts high value with high incomes and educational levels which will increase the banks overall revenue. Such customers consolidate high variety of transactions, which in normal banking services compels to make regular trips to the bank. Due to the internet, such trips are exorbitantly reduced thus beneficial to them. Studies by Kim et al. (2016) have confirmed that customer needs and attitude have influenced the adoption of innovative technologies by banks. Other factors such as age and education level also subjected the banks to adopt newer innovations since younger generations were educated and tech savvy.

## **2.4 Staff Attributes and Adoption of Internet Banking**

The computer literacy has considerably increased in many developing countries. According to Al-Soufi et al. (2013), in the recent past has seen huge expansion of consumers demanding internet related products in the banks. The increase in computer access across the country has exacerbated the trend. The Human Computer Interface (HCI) is an important component in the usability of the systems and acceptance. The HCI includes the use and context of computers, human characteristics, computer system and interface architecture and the development process (Shah & Clarke, 2009).

In many developing countries, limited usage of the internet banking is associated to customers' lack of awareness of availability and aptitude to its usage. This requires the banks to support awareness through promotional efforts (Shah & Clarke, 2009) to improve the capacities of the customers to use internet banking. The level of success in embracing e-banking services depends on staff competencies and change-culture in their banking environs (Lymeropoulos & Chaniotakis, 2004). The bank personnel are more confident with technologies that enhance their level of performance and not threaten their positions. If the later situations arise, the staff are certain to be negative with the technology (Nath et al., 2001). In cases where e-banking programs are a threat to the employees job security, then adopting them might prove difficult (Mols, 2001). Chan and Lu (2004) and Constantine & Chaniotakis (2004) supports the position by saying that employees of banks always oppose innovations because of the perceived adoption and disturbance costs. According to Davis et al. (1989), organizational attitude and culture are crucial determinants of success in the adoption of innovations. The management together with the staff can either adopt or reject a new technology based on their perception levels. The complexities attached to fear and desires are thus enables of change (Ajzen and Fishbein, 1980).

## **2.5 Organization IT Infrastructure and Adoption of Internet Banking**

As the era of globalization, competition, changing social needs, ICT advancement and innovation, customer needs has become the center stage of business value and the banking industry is being reshaped by emergence of a knowledge-based economy facilitating intense restructuring of the banking industry. This has seen the banking services undergoing intense transforms during the past few years (Imola & Claudia, 2014). Over the years consumer banking needs and demands have tremendously altered; today they require systems that support more personalized banking products and services at any time and any place (Imola and Claudia, 2014). The good thing about internet banking is that it is fast and is available to a bank client or customer in any part of the world, at any time needed.

In a study conducted by Furst, Lang and Nolle, (2000), banks that were profitable were more likely to adapt to Internet banking. Other factors such as location and membership have also contributed in the banks' adoption of internet-banking. Furst et al (2000) explains that the high running costs in urban areas has seen banks adopting more efficient and cheaper means of delivering services. Customers are ever-demanding quality services from banks. The institutions therefore must adapt to the changing customer needs at manageable costs in order to remain sustainable (Al-Soufi et al., 2013). In addition, the internet has offered clients with a comparative and bargaining tool where they can gauge and switch the banking products across the industry. The organizations therefore are obligated to strive for excellence and quality in the delivery of services.

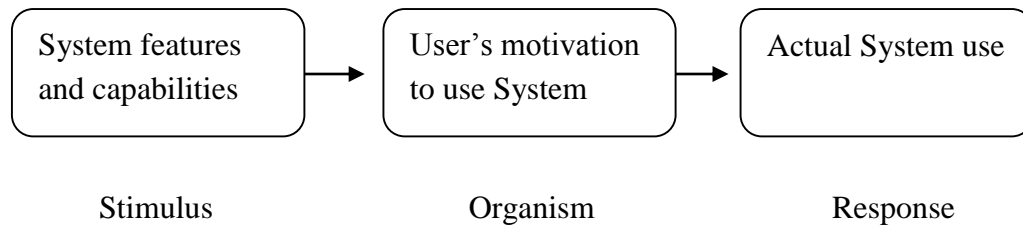
## **2.6 Theoretical Foundations of the Study**

The research project follows the foundations of the Technology acceptance theory, the transaction cost economics theory and Unified Theory of Acceptance and Use of Technology.



### 2.6.1 Technology Acceptance Model

The model was first presented by Fred Davis in 1985 where he argued that internet system operations depends on its capabilities as well as the belief in the technology by users (Chuttur, 2009). The following is the illustration of the conceptual model;



**Figure 1.1: Conceptual Model for Technology Acceptance**

Source: (Chuttur, 2009)

The theory is relevant to the study because it is based on three factors which include perceived ease of use, perceived usefulness and attitude towards using the system and in general it models how users come to accept and use technology. TAM brings into focus in the explanation of user behavior of information technology as a model. The thesis further highlights the enabling factors that explains the success or failure of an internet innovation. In addition, the product cycle highlights the impact of beliefs and values in the use of the product. External elements define the use and acceptability of a framework (Sung Youl Park, 2009).

### 2.6.2 Transaction Cost Economics Theory

This theory was originally coined by Niehans (1989). The theory postulates that, cost reduction being one of the basic goals of any institution act as a driver for adoption of strategies that reduce operational costs. This model is the only one, among many technology models, that has proved to explain and predict the use of a system, and has been able to capture most attention of the information system community.

The theory assumes that through use of technology an institution is able to enjoy the benefit of cost reduction because many waste processes get eliminated. Cost reduction allows banks to allocate excess funds to projects that may facilitate growth and development (Anthony & Harry, 2015). The model hence compares the unit cost of performing a

transaction. Therefore, the theory proposes alternatives to firms when it comes to deciding whether to invest in different innovative ideas or not despite the capital expenditure involved (Bakar & Ahmed, 2010). In the proposed study however, banks perceive the proponents of this theory and how they view remedies proposed by the theory. Institutions hence are at liberty to interpret the theory depending on the changes in their environment.

A critique to this theory is that linkages are not reliable aspects for gauging efficacy when faced with volatilities. For organizations to actualize sustainable competitive advantage and ensure uniqueness in the market, managing operational costs is critical. Organizations have preferable instances for dealing with ballooning overhead costs, which normally are against the market expectations (Batiz-Lazo & Woldesenbet, 2006).

### **2.6.3 Unified Theory of Acceptance and Use of Technology (UTAUT)**

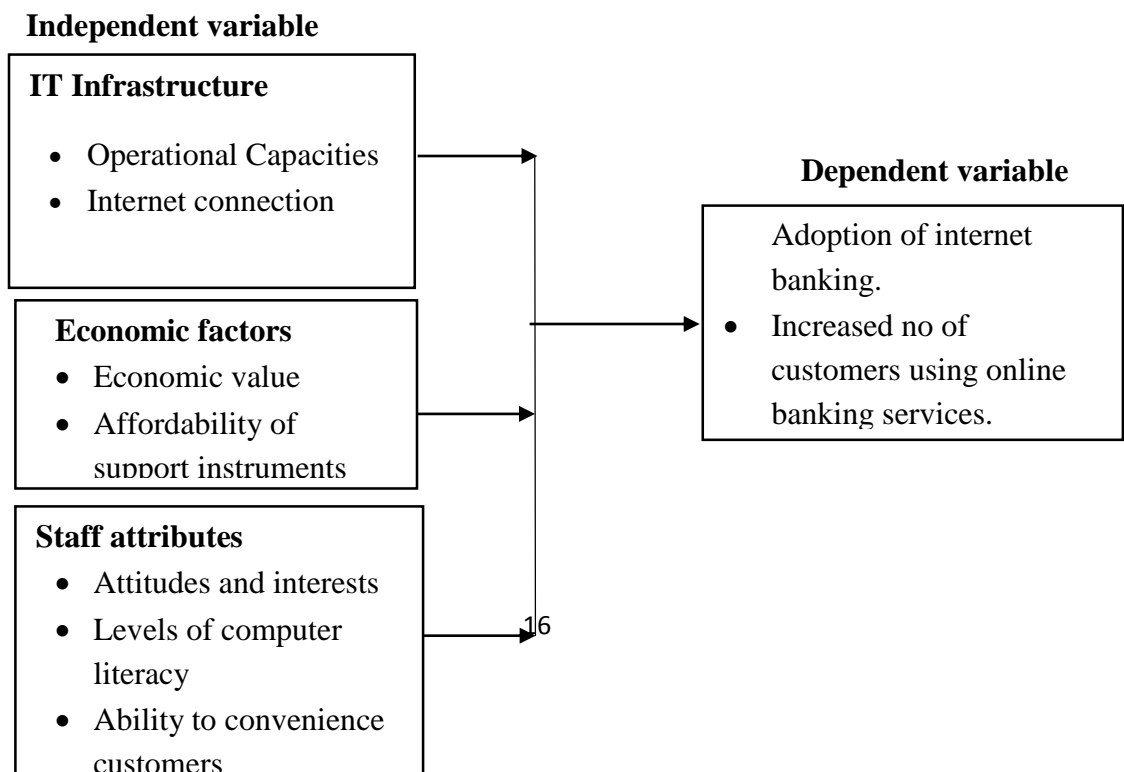
The above theory was developed by Morris, Venkatesh, Davis (2003) who basically did a study of the previous theories on acceptance of technology and formed a unified theory. This theory was formed to explain user's intention to use an information technology system and what behaviors are observed after. The theory was developed through a review and consolidation of the constructs of eight models that earlier research had employed to explain information systems usage behavior.

The theory assumes that there are four areas of predicting user's behavior which include social influence, perceived usefulness, performance expectancy and lastly effort expectancy. The model analysis a particular system which depending on the users age, previous experience, gender and voluntariness of use, they will have direct impact on user behavior and acceptance of technology. UTAUT implies that the expected usefulness of a system is anchored on performance expectancy and effort expectancy (Davis et al., 2003).

## **2.7 Conceptual Framework**

The independent variables were looked at in terms of the banks IT infrastructure that ensures the program is able and competent in operations. The second predictor looked at the economic drivers that affect banks and consumers. The focus was on affordability of the innovations both in running costs and related benefits. Thirdly, staff attributes such as competence, skills and attitude were viewed and the impact on customers. The response

indicators focused on adoption of the internet technologies and innovations by banks in operations and delivery of services. The impact of such initiative in attracting and retaining the beneficiaries were also delved into. The relationship was moderated factors of regulations, economy and the political aspects associated with acceptance of cutting edge innovations.



**Figure 2.1: Conceptual Framework**

## 2.8 Summary of Knowledge Gaps

**TABLE 2.1: SUMMARY OF MAJOR GAPS**

<b>Author</b>	<b>Research</b>	<b>Findings</b>	<b>Knowledge Gaps</b>
Masila, Francis K (2013)	Internet Banking in the face of Kenyan Banks	The internet banking innovation has tremendously changes the dynamics of business rivalry in the commercial banks in Kenya.	The investigator focused on the aspects of competition factors of banks. The project will factor the overall performance of banking institutions in Kenya.
Mulwa, Felistus, N (2017)	Effect of Internet Banking on Financial Performance of Commercial Banks in Kenya	The internet banking accelerated the ROA of Kenyan Banks since the customer deposits via the technology increased significantly.	The investigations goal was to measure the financial performance of banking institutions. The current investigator will measure the overall performance metrics of the organizations.
Mairura, Linet K (2014)	The effect of internet banking on cashflow of commercial banks in Kenya	The study revealed that there was strong positive relationship between cashflow of commercial banks and internet banking, size of the bank, bank deposits, wage and bank's profitability	The research assessed the impacts of technology on the organizations cash structures. My study will be on adaption of internet banking in Financial institutions, case of KCB Bank.
Kathuo, Rotich and Anyango (2015)	Effect of mobile banking on the financial performance of banking institutions in Kenya	The investigations realized that M-Banking services enhanced the rate of transactions.	The study was limited to mobile phone banking only My study is limited to internet banking only
Gichungu and Oloko (2015)	Relationship between Bank Innovations and Financial Performance of Commercial Banks in Kenya	The technological innovations such as online banking, mobile phone banking, agency banking and ATMs had improved the performance of finance offices of banks in Kenya	The study was generalized to several banking systems. My study is narrowed down to KCB Bank.
Mohamed (2019)	Mobile banking, a catalyst of financial performance for Kenyan banks	Banks are increasingly innovating digital lending platforms as an alternative to provide clients with quicker loans	The scope of the investigations was limited to mobile systems of banking My thesis project is based on adoption of internet banking in KCB Bank.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter highlights the method of research used in the study. Research methodology refers to the steps or sequence of events needed to plan what data is to be analyzed. It provides a framework of how the study is to be carried out. Research methodology includes the research designs, data collection procedures and data analysis to be applied in carrying out the research study. The above aspects were discussed in the sections below from section 3.2 to 3.5.

#### **3.2 Research Design**

This refer to methods that directed the investigator to assess the relationships between variables, inform subject groups and analyze the data (Dawson, 2009). As such, a descriptive survey model was used. The design was used to collected data from selected units in the study area by making descriptive contentions about a large population and by relying on pre-existing information. The research aimed at gathering information on determinants of internet banking and its adoption into KCB banking group which was mainly pre-existing information.

#### **3.3 Target Population**

This is the full aggregate of elements of observable characteristics that interests the investigations (Mugenda and Mugenda, 2003). The research-project targeted the permanent staff of the 36 KCB branches in Nairobi County, Each of the staff selected for this study was given a questionnaire to fill. Nairobi County as categorized by the Bank has the following branches.

**Table 3.1: Target Population**

<b>S/N</b>	<b>Branch location</b>	<b>Number of staff</b>
1	Moi Avenue	40
2	Kipande street	30
3	Kimathi	22
4	Tom Mboya	22
5	KICC	15
6	Upper hill	15
7	Hurlingham	18
8	Lavington	15
9	Karen	18
10	Kibera Branch	9
11	Gateway	28
12	Sykimau	10
13	Next gen	7
14	Industrial area	26
15	Mashariki	26
16	T-Mall	15
17	Jogoo Road	16
18	Kasarani	9
19	JKIA	9
20	Ngara	8
21	Westlands	26
21.	UN	7
22.	UN Gigiri	13
23.	Village market	15
24.	Two Rivers	7
25.	River Road	21
26.	Sand Moutgate	7
27.	Sarit centre	26
28.	Westgate	7
29.	Ukay	20
30.	Haille Selassie	8
31.	Garden square	7
32.	Biashara Street	8
33.	KCB Towers	7
34.	Upper hill	7
35.	Riverside	7
36.	Salama	8
	<b>Total</b>	<b>559</b>

### 3.4 Sample Size and Sampling Procedure

In cluster sampling is any sampling unit with which one or more listing units can be associated and where the unit can be geographical, temporal or spatial in nature (Levy and Lemeshow, 2013).

#### 3.4.1 Sample Size

The following statistical formula, Taro Yamane (1967) will be used to determine the sample size;

$$\text{Where } n = \frac{N}{1 + N(e)^2} \quad \text{thus } n = \frac{173}{1 + 173(1.96)^2} = 120$$

N = pop

n = desired sample size

e = margin of error at 5% at standard value of 0.05

The following is the list of sampled branches from which 120 respondents will be selected, as the sample size.

**TABLE 2.2: SAMPLE SIZE**

S/N	Branch Name	Number of Employees	Sample Size
1	Tom Mboya	22	15
2	Upper hill	15	10
3	Mashariki	26	18
4	Kasarani	9	6
5	Ngara	8	6
6	Lavington	15	10
7	Two Rivers	7	5
8	Ukay	20	14
9	Karen	18	12
10	Biashara Street	8	6
11	Sykomau	10	7
12	Village market	15	10
	<b>Total</b>	<b>173</b>	<b>120</b>



### **3.4.2 Sampling Procedure**

The sampling was conducted by using probability sampling procedures. In the probability sampling, cluster sampling procedure will be appropriate taking into account that each KCB branch is appropriately represented in the sampling. Each of the KCB branches in Nairobi was treated as clusters from which a simple random procedure will be used to identify respondents. The sample was selected using the excel random sample selection on the list of 15 branches. The human resources department provided the sample frame from the random sampled branches from which another random sample was run from which the sample was drawn.

### **3.5 Data Collection Instruments**

A questionnaire was the main feedback tool used to source the relevant first-hand information from the sampled respondents. The research instrument contained a sets of perception statements and open-ended questions arranged in two sections on which the selected bank personnel were requested to indicate their views on categorical scales. The first episode covered the demographic information while the succeeding section gathered information about the effect of independent variables which are economic factors, IT infrastructure and staff attributes and response metrics which captures the level of adoption of internet banking. According to (Dawson, 2009), research instruments are tools used to collect diverse but vital information about an object.

The questionnaire was presented to the selected KCB Staff. Document review was done to identify the challenges and issues relating to the internet banking. Some of these documents reviewed included the KCB strategic plan, human resources manual and rolls, banks newsletters and magazines as well as other relevant literature produced in the last one year.

#### **3.5.1 Pilot Testing of the Instrument**

The study tools were piloted to verify its relevance with regard to the research goals. The pilot study was conducted in sampled respondents of KCB staff. 12 Respondents who were selected randomly had similar characteristics as the target population. Respondents were asked to respond to the ambiguities and to comment on the design and terminology of the instruments to help clarify concerns regarding reliability and consistency.

### **3.5.2 Validity of the Instrument**

This refers to a test of measuring how well the research instrument measure what it is supposed to measure (Kombo and Tromp, 2009). Validity is the degree to which results obtained from analysis of the data actually represent the phenomenon under the study. The first step to ensure validity of instruments is to make sure study objectives are clearly identified and defined (Cozby, 2001). The study instruments was reviewed by research experts and supervisors of the university to ensure content validity. The questionnaire was pilot tested and issues arising were addressed accordingly. Piloting of the instruments was done in 2 KCB banks randomly sampled from the sampled banks in study of which these sample was not used. This ensured that the respondents understand the questionnaires objectively to avoid misinterpretation of questionnaires and hence false responses. Though validity, the study ensured an appropriate size of the subject population, sufficient time was allocated for data collection and instrument sensitivity issues are addressed accordingly.

### **3.5.3 Reliability of the Instruments**

This is characterized as the degree to which an investigative tool produces unswerving outcomes on several attempts (Mugenda and Mugenda, 2003). A test-retest technique was conducted on 12 respondents selected for the pilot test. The researcher administered a structured questionnaire recurrently on identical respondents over a time-gap of two weeks. The test scores of the two tests were entered into SPSS and Cronbach's Coefficient Alpha calculated to establish the correlation amongst them. The Cronbach's reliability coefficient of the research instrument was 0.825. This output shows that the instruments of investigation were above the average threshold for internal consistency.

### **3.6 Data Collection Procedures**

The researcher collected both qualitative and quantitative data from the fields. Qualitative research approach is used for exploring and understanding the meaning that respondents attach to their problems, while the quantitative data can be measured and analyzed by typically using statistical procedures (Creswell, 2014). The researcher got clearance and research permits from the department of Project Planning and Management at the university and the National Council for Science and Technology and Innovation (NACOSTI) prior to research before proceeding to the study site for data collection.

The selected and designed tools for data collection was launched to the various units sampled from across the KCB bank branches in Nairobi area. The tools were presented to the respondents and collected for entry.

### **3.7 Data Analysis Techniques**

The investigator inspected, cleaned and transformed the data collected. This established useful information and conclusions which were vital in answering the research question. Analysis was done on both qualitative and quantitative data. The computer software used included SPSS and excel for data entry and analysis. Specifically, the study applied the four qualitative analysis techniques recommended by (Mugenda and Mugenda, 2003); data organization, creating categories, analysis and interpretation of information and lastly compile report.

Processing of qualitative data involved an analysis of emerging issues and procedures where data was collected in the participants setting and analyzed inductively by building from particular general themes, the researcher making interpretations of the meaning of data (Creswell, 2014). Quantitative data was coded using the computer software, Statistical Package for Social Scientist (SPSS) and analyzed into percentages, frequencies and mean scores which was used to show relationships between variables.

### **3.8 Operationalization of Variables**

The following table provides summary of process of operationalization of the independent and dependent variables that were undertaken, research objectives, indicators, measures and measurements, data collection methods, measurement scale and tools for analysis.

**Table 3.3: Operationalization Variables**

	<b>Research Objectives</b>	<b>Types of variable</b>	<b>Indicators</b>	<b>Measurement scale</b>	<b>Method of analysis</b>	<b>Tools of analysis</b>
1	Adoption of Internet banking	Dependent Variable	<ul style="list-style-type: none"> <li>• Customers using internet banking services</li> <li>• Number of branches using internet banking</li> </ul>	Nominal	Inferential Statistics	Frequency distributions , Percentages Regression
2	To identify the extent to which the organization IT infrastructure determines the adoption of internet banking at KCB Bank group	Independent <ul style="list-style-type: none"> <li>• Organizational IT infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• Availability of maintenance services</li> <li>• Operational Capacities</li> <li>• Internet connection</li> </ul>	Ordinal	Descriptive statistics	Frequency distributions , Percentages Regression
3	To determine the extent to which staff attributes determine the adoption of internet banking systems at KCB Bank Group	Independent <ul style="list-style-type: none"> <li>• Traits in staff</li> </ul>	<ul style="list-style-type: none"> <li>• Attitudes and interests</li> <li>• Levels of computer literacy</li> <li>• Ability to convince customers</li> </ul>	Ordinal	Descriptive statistics Inferential statistics	Frequency distributions , Percentages Regression
4	To determine the extent to which economic factors influence adoption of internet banking system in KCB Bank in Nairobi County.	Independent <ul style="list-style-type: none"> <li>• economic Factor</li> </ul>	<ul style="list-style-type: none"> <li>• Economic value</li> <li>• Affordability of support instruments</li> </ul>	Nominal	Descriptive statistics	Frequency distributions , Percentages Regression

### **3.9 Ethical Considerations**

In this survey the ethical thresholds were met. Before data collection it was ensured that respondents give informal consent, confidentiality of information is substantially upheld, and they had a right to withdraw from the survey. The study consolidated mutual respect for the participants of this study. Respondents were informed that no harm would come to them because of responding to the questions. This study ensured that all manner of misconduct (falsification, fabrication and plagiarism) is duly avoided.

## CHAPTER FOUR

### DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

#### 4.1 Introduction

This chapter presents the information processed from the data collected during the study on the determinants of the adoption of internet banking in financial institutions: a case of KCB in Nairobi County. The study targeted a sample 120 staff from 12 branches Data from questionnaires are presented using tables.

#### 4.2 Questionnaire Return Rate

The analysis revealed that of the 120 questionnaires, 102 were successfully and used for the analysis. This suggests that a response rate of 85 percent was realized, which according to Mugenda and Mugenda (2003), is above the minimum threshold of 50%, for accurate prediction of population parameters from the samples, as well as for making valid conclusions.

**Table 4.1: Response Rate**

<b>Response Rate</b>	<b>Employees</b>	<b>Percentage (%)</b>
Returned	102	85
Not Returned	18	15
<b>Total Distributed</b>	<b>120</b>	<b>100</b>

#### 4.3 Background Information of Respondents

The distribution of the participants profiles in relation to age, gender and educational background offers the investigator an understanding of the characters in the survey. Table 4.2 to 4.4 shows the spread of participants demographics.

##### 4.3.1. Gender of the Survey Participants

The responses tabulated below responded to an inquiry into the types of gender that participants associated themselves with.

**Table 4.2: Respondent's Gender distribution**

<b>Gender</b>	<b>Frequency</b>	<b>Percent</b>
Male	64	62.7
Female	38	37.3
<b>Total</b>	<b>102</b>	<b>100</b>

The analysis showed that 64% of the respondents reported being male while 38% reported being female. This indicated that the equilibrium between women and men in the banking sector is yet to be real.

#### **4.3.2. The Age Group Categories of the Survey Participants**

The investigator asked the respondents to check from the list provided which category described their age and responses tabled below.

**Table 4.3: Summary distribution of participant age**

<b>Age of the respondents</b>	<b>Frequency</b>	<b>Percent</b>
18-25	28	27.5
26-35	41	40.2
36-45	33	32.3
<b>Total</b>	<b>102</b>	<b>100</b>

From the results, 27.5% reported that they are aged between 18 and 25 and 40.2% between the ages of 26 and 35. The analysis indicated that a large portion of the KCB staff are youthful and are able to relate with the growing consumer needs that is oriented in internet banking innovations.

#### **4.3.3. Education Background of the Respondents**

In regard to the degree of formal schooling reached, the study requested respondents to indicate from the choices provided the degree of education they attained, and responses itemized as;

**Table 4.4: Education background of the survey participants**

Level of education	Frequency	Percent
Diploma	12	11.7
Bachelor's Degree	68	66.7
Post graduate	22	21.6
<b>Total</b>	<b>102</b>	<b>100</b>

The analysis posits that 66.7 percent of respondents reported holding a Bachelor's degree, 11.7 percent stated diploma, 21.6 percent had a postgraduate degree certificates. The outcomes disclose that a well-informed and educated research subjects were sought and as such, were able to provide accurate and reliable information regarding the adoption of internet banking programs.

#### **4.4 Economic Factors and Adoption of Internet Banking Technology**

The researcher requested the study responders to check from the boxes provided what economic factors influenced the acceptance of internet banking and summary responses itemized.

**Table 4.5: Economic Factors and Determine Adoption of Internet Banking Technology**

Internet subscription	Yes	No
	%	%
Do you think internet banking technology has influenced the adoption if internet banking at KCB?	82	18
Does the current internet banking system effectively offer KCB the required competitive edge in the Kenyan market?	62	38



According to Table 4.5, the investigator focused to determine how economic factors determine the adoption of internet banking. The realized that 82% of the respondents agreed that the new internet technology adopted by Kenyan commercial bank greatly influenced adoption of internet banking while 18% were of the opposed to the statement. When it came to whether internet banking gave KCB a competitive edge over its competitors, most of the respondents constituting 62% were in agreement while 38% were not.

#### **4.5 Staff Attributes and the Adoption of Internet Banking at KCB Bank Group**

The study investigated the effect that staff attributes had on the adoption of internet banking at KCB banking group. The following section shows the results observed.

**Table 4.6: Staff Attributes that Determine the Adoption of Internet Banking at KCB Bank Group**

<b>Internet subscription</b>	<b>Frequency</b>	<b>Percent</b>
Seeking product and rate	12	12
Calculate loan payment	0	0
Download loan forms	0	0
Download personal loan forms	16	16
Check balances online	21	21
Applying for loan forms	6	6
Inter account transfers	7	7
Online bill payments	38	38

The analysis observed that seeking product and rates as service was not used regularly by customers as indicated by a percentage of 12 percent. Equally, no customers used internet banking to calculate loan payments information and download loan application forms as indicated by 0%. The results also observed that the need to downloading personal bank statements was rated below averagely by 16 percent of the respondents. In addition, applying for consumer loans 6% and inter account transfers 7% programs were not

significant concerns for consumers. What the respondents observed as the most utilized services of internet banking were checking balances online represented by 21% and the highest used service on-line bill payments represented by 38%.

Consequently, the researcher requested the study responders to check from the boxes provided their competency levels in using computers.

**Table 4.7: Staff Competency in Computer Use**

<b>Knowledge and ability to use computer</b>	<b>Frequency</b>	<b>Percent</b>
Very poor	0	0
Poor	0	0
Good	7	7
V. Good	13	12
Excellent	82	81
<b>Total</b>	<b>102</b>	<b>100</b>

The above Table 4.7 shows the result of whether the staff of Kenya commercial bank were computer literate. The results indicated that all of the respondents were computer literate as represented by 100%. This was an indication that the adoption of internet banking and its operation was easy given the fact that everyone is technologically informed when it comes to using of computers.

#### **4.6 Knowledge and Ability to Use Internet Banking Technology**

The investigator assessed the level of knowledge and ability each staff had when it comes to using computers. This was to gauge how feasible was adoption of internet banking by KCB. From the findings, most of the respondents were excellent users of computers as represented by 74%. None of the respondents was poor in terms of using computers which was a good sign that internet banking would be easily assimilated into the banks operations.

**Table 4.8: Knowledge and Ability to Use Internet Banking Technology**

<b>Knowledge and ability to use computer</b>	<b>Frequency</b>	<b>Percent</b>
Very poor	0	0
Average	7	7
Good	14	13
V. Good	21	21
Excellent	57	56
<b>Total</b>	<b>102</b>	<b>100</b>

The investigator wished to establish if the bank staff had undergone any form of training on internet banking systems. This question sought to establish whether the bank has been offering trainings or seminars on internet banking with an aim of sensitizing and educating its staff on the current trend in banking technology

**Table 4.9: Specialized Training on Banking Systems**

<b>Parameter</b>	<b>%</b>	<b>Frequency</b>
<b>Yes</b>	92%	94
<b>No</b>	8%	8
<b>Total</b>	<b>100</b>	<b>102</b>

The results indicated that 92% of the respondents had been sensitized through either training or seminars on internet banking.

#### **4.7 IT Infrastructure and Adoption of Internet Banking at KCB Bank Group**

The investigator aimed to investigate the extent of the current internet banking systems at KCB meet the market needs.

**Table 4.10: Current Internet Banking Systems at KCB Meet the Market Needs**

<b>Knowledge and ability to use computer</b>	<b>Frequency</b>	<b>Percent</b>
Very Poor	0	0
Poor	1	1
Average	10	10
Good	22	21
V. Good	26	26
Excellent	43	42
<b>Total</b>	<b>102</b>	<b>100</b>

The Table 4.10 showed the results of this this analysis. The researcher observed that the current internet banking system at KCB was excellent at meeting the market needs as indicated by 42%, this was an indication that the bank is heavily investing in technology in order to improve its operations and also have a competitive edge.

**Table 4.11: KCB Bank Group Effectively and Efficiently Invested in the Internet Banking**

<b>Knowledge and ability to use computer</b>	<b>Frequency</b>	<b>Percent</b>
Yes	73	72
No	26	25
Can't tell	3	3
<b>Total</b>	<b>102</b>	<b>100</b>

When it comes to whether the bank sets aside a large portion of its profits to finance and invest in current technology, the researcher observed that 72% of the respondents agreed that a great amount of money is usually kept aside for research and development on matters relating to new banking technologies. 25% of the respondent were opposed to the idea.

#### 4.8 Inferential Statistics of Adoption of Internet Banking

The investigations performed an OLS multivariate regression analysis with a view of measuring the magnitudes of predictor variables on the response and summary discussions presented below.

**Table 4.12: Model Summary of Influence of Independent Variables on Dependent Variable**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.824 <sup>a</sup>	0.679	0.662	0.18526

a. Predictors: (Constant), Internet subscription, mobile subscription, branchless banking

The R-Squared characterizes the proportion of variance in the dependent variable (adoption of internet banking projects) that is described by the independent variables. The R-squared (0.662) that the investigations produced shows that the three factors of interest (IT Infrastructure, economic aspects and Staff attitude) explained 66.2 percent of banks adoption of internet banking, revealing that other aspects are responsible for the unexplained 33.5% of the response variable.

In addition, the ANOVA analysis determine the relevance of the model in the interpretation of the data. The project has produced a p-value that is below 0.000 and thus accepted the model used in evaluating how the adoption of internet innovations is influenced by the independent variables. The F-calculation (18.545) was furthermore than the F-critic (2.46) meaning the model was adequate for studying the impact of internet banking on bank service delivery and operations.

**Table 4.13: Model Coefficients**

Model	Unstandardized		Standardized		
	Coefficients		Coefficients		
	B	Std. Error	Beta	T	Sig.
(Constant)	.180	.387	.233	.466	.643
Economic factors	.697	.166	.586	4.658	.037
Traits in staff	.626	.140	.504	4.226	.000
Organization IT infrastructure	.733	.179	.601	5.188	.001

a. Dependent Variable: Adoption of internet banking

From the outcome, the results in Table 4.11 revealed that level of technology, socio-economic value, staff and customer traits and organizational IT infrastructure significantly predicted adoption of internet banking by Kenya commercial bank at 5% level of significance. This was indicated by significant p-values ( $p < 0.000, 0.037, 0.000$  and  $0.001$  respectively).

The model from Table 4.6 was as follows:

$$Y = 0.180 + 0.697 X_1 + 0.626 X_2 + 0.733 X_3$$

Where  $Y$  = adoption of internet banking,  $X_1$  = economic factor value,  $X_2$  = staff and customer traits,  $X_3$  = organizational IT infrastructure

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter provides a summary of survey findings and draws conclusions in line with objectives of the study. Also presented herein are recommendations for appropriate interventions that should be considered by the relevant bodies within the financial environment. The chapter also highlights contributions of the study to knowledge, as informed by the findings under each objective, as well as recommendations for further research, as informed by gaps emerging in the findings, and/or delimitations of the study. Details are provided in the following sub-sections.

#### **5.2 Summary of Findings**

The thesis project intended to establish determinants of the adoption of internet banking in financial institutions: a case of KCB bank, Nairobi County. The investigator wished to assess the level of technology on the adoption of internet banking as well as staff competencies and customer profiles on the utilization of E-banking services. In addition, the investigations also evaluated the impact of IT infrastructure on the adoption of internet banking.

The analysis established that majority of staff were knowledgeable and had the competencies to use the various platforms offered under internet banking. Moreover, customers have embraced the internet banking products and services for their needs. The respondents also noted they could market the technology to customers in spite of the challenges. Most respondents agreed that the bank had a wide range of services that they offered via internet banking indicating.

Regarding the first study goal, the analysis revealed that internet banking is not that popular and widely used by most customers. The respondents strongly agreed that the growing trends in banking technology was the major reason as to why the bank adopted internet banking, they also agreed that the bank had the right technology in place to support internet

banking at their branches offer. The respondents also agreed that the bank offered quite a range of services in all their branches which was a clear indication that the bank is greatly embracing the trending banking technologies.

The second component of analysis confirmed that internet banking is the one of most preferred digital platforms by the commercial banks in Kenya. The new technologies greatly influence the organizations adoption of such services. The respondents agreed that the use of internet banking by the bank has had a great advantage for the bank in terms of competition with other banks. Since every bank is engaging in digital migration of its services, adoption of internet banking has giving KCB a fighting chance and a competitive edge in the banking industry. For example, this can be explained through lack of charges on deposits which has greatly influenced customers to make deposits through internet-banking and due to internet banking the bank is able to attract additional business form the customers on top of deposit maintenance.

Thirdly, the study sought to establish the influence of staff and customer traits in the adoption of internet banking. The findings of the study showed that respondents agreed that most customers preferred to use the following services via internet banking; that is paying pills, checking balances as well as downloading bank statements. What most customers didn't prefer transacting via internet was to calculate loan payments information and download loan application forms as well as applying for consumer loans and inter account transfers. The respondents agreed that most staff customers were computer literate and were able to use internet banking technology. The study lastly observed that most of the staff had been taken through some basic training on how to operate internet banking which was a success factor for the bank.

Lastly the researcher sought to establish whether IT infrastructure was a determinant in the adoption of internet banking at KCB banking group. The researcher observed that the current internet banking system at KCB was excellent at meeting the market needs as indicated, this was an indication that the bank is heavily investing in technology in order to improve its operations and also have a competitive edge. The study also observed that



of the respondents agreed that a great amount of money is usually kept aside for research and development on matters relating to new banking technologies.

## **5.3 Conclusion**

### **5.3.1 Level of Technology and Adoption of Internet Banking**

The regression model confirms that the internet banking service was a moderate predictor variable for banks adoption of the technology. In addition, bank staffs are highly competent and positive in the use and execution of the internet banking technology. Despite these results, the study concludes that the technology is not widely accepted due to safety and security issues, which respondents think, affect customers greatly.

### **5.3.2 Economic Factors and Adoption of Internet Banking**

The results conclude that economic factors have an above average effect on adoption of internet banking. In addition, the utilization of the technology by the financial institutions has had a great advantage for the bank in terms of competition with other banks. Since every bank is engaging in digital migration of its services, the KCB have embraced the innovation in order to enhance its competitive edge in the evolving banking industry.

### **5.3.3 Staff Traits and Adoption of Internet Banking**

From the regression analysis, there is over and above 50% significant influence of staff traits on the adoption of internet banking. The findings of the study showed that respondents agreed that most staff preferred use of services that have no security concerns to them as opposed to those that had security risks. The study concluded that that most staff were computer literate and were able to use internet banking technology. The study lastly observed that most of the staff had been taken through some basic training on how to operate internet banking which was a success factor for the bank.

### **5.3.4 IT infrastructure and Adoption of Internet Banking**

Lastly, the regression analysis showed that IT infrastructure also had an above average influence on the adoption of internet banking. The bank has invested greatly in IT and banking technology and its research and development in order to keep its operations up to date with the current trends in the industry and have a competing chance. The study

concludes that for the bank to continue its operations effectively and efficiently it needs to have the right infrastructure in place and up to date.

#### **5.4 Recommendations for Further Studies**

The study looked at the determinants of adoption of internet banking by KCB bank group in Kenya a case of Nairobi branches. The study recommends that similar studies should be undertaken in other banks to allow comparability of findings and coming up with a general conclusion. Secondly, the model summary only answered 66.2% meaning there are other factors amounting to 33.8% that have not been considered and therefore other factors should be considered to fill that gap.

## REFERENCES

- Abbasi, T., and Weigand, H. (2017). *The Impact of Digital Financial Services on Firm's Performance: A Literature Review*. Tilburg University, The Netherlands.
- Aljawarneh, S. (2017). *Online Banking Security Measures and Data Protection*. Hershey, PA: Information Science Reference.
- Al-Soufi, A., Al-Ammary, J., and Al-Qallaf, A. (2013). Exploring the Quality of Internet Banking Services in Kingdom of Bahrain. *International Journal of e-Education, e-Business, e-Management and e-Learning*, Vol. 3, No. 5.
- Anesti, D. (2004). *Internet Banking History and Strategies: A Case Study*. Monterey Bay: California State University.
- Asifulla, A. (2016). *Introduction to Electronic Banking*. Education Publishing.
- Blanton, S. L., and Kegley, C. W. (2016). *World Politics: Trend and Transformation, 2016 - 2017*. Boston: Cengage Learning.
- Central Bank of Kenya. (2019). *Directory of Licensed Commercial Banks, Mortgage Finance Institutions and Authorized Non-Operating Holding Companies*. Nairobi: Central Bank of Kenya.
- Chepkoech, B. (2017). *Challenges Facing Internet Banking: A Case of Family Bank Kenya*. Nairobi: USIU.
- Chiemeke, S. C., Ewwiekpaefe, A. E., and Chete, F. O. (2006). The Adoption of Internet Banking in Nigeria: An Empirical Investigation. *Journal of Internet Banking and Commerce*, Vol. 11, no.3.
- Choudrie, J., Islam, M. S., Wahid, F., Bass, J. M., and Priyatma, J. E. (2017). *Information and Communication Technologies for Development: 14th IFIP WG 9.4 International Conference on Social Implications of Computers in Developing*

- Countries, ICT4D 2017, Yogyakarta, Indonesia, May 22-24, 2017, Proceedings. Jakarta: Cham Springer International Publishing.
- Chuttur, M. (2009). *Overview of the Technology Acceptance Model: Origins, Developments and Future Directions*. Working Papers on Information Systems.
- Creswell, J. W. (2014). *Research design: Qualitative, Quantitative, and Mixed Methods Approaches*. Thousand Oaks, California: SAGE Publications.
- Cronin, M. J. (1998). *Banking and Finance on the Internet*. New York; Toronto: Wiley.
- Dash, M. (2017). An Empirical Study on Customers' Internet Banking Behavior. *Research Gate*, 4.
- Dawson, C. (2009). *Introduction to Research Methods: How To*. Oxford, United Kingdom: How to Books Ltd.
- Furst, K., Lang, W. W., and Nolle, D. E. (2000). *Internet Banking: Developments and Prospects*. Economic and Policy Analysis Working Paper.
- Gichungu, Z. N., and Oloko, M. A. (2015). Relationship between Bank Innovations and Financial Performance of. *International Journal of Education and Research*, Vol. 3 No. 5, 443-456.
- Goi, C. L. (2018). Factors Influence Development of E-Banking in Malaysia. *Journal of Internet Banking and Commerce*.
- Hanafizadeh, P., Keating, B. W., & Khedmatgozar, H. R. (2014). A systematic review of Internet banking adoption. *Telematics and informatics*, 31(3), 492-510.
- Hogarth, J. M., and Anguelov, C. E. (2006). Are Families Who Use E-Banking Better Financial Managers. Purdue University.
- Imola, D., and Claudia, I. (2014). E-Banking Services – Features, Challenges and Benefits. *Annals of the University of Petroșani. Economics*, 49-58.
- Juma Fred. (2016, 04). The State of Banking in Kenya: A Story of Numbers. Retrieved from Soko Directory: <http://sokodirectory.com>

- Kathuo, S., Rotich, G., and Anyango, W. (2015). Effect of Mobile Banking on the Financial Performance of Banking Institutions in Kenya. *The Strategic Journal of Business and Change Management*, Vol. 2 (98), 1440 – 1457.
- Kenya Bankers Association. (2014). *The Mobile Banking Survey*. Nairobi: Kenya Bankers Association.
- Kim, B.-M., Widdows, R., and Yilmazer, T. (2016). The Determinants of Consumers' Adoption of Internet Banking. Purdue University.
- Kombo, D., and Tromp, L. (2009). *Proposal and Thesis Writing: An Introduction*. Nairobi: Pauline Publications Africa.
- Levy, P. S., and Lemeshow, S. (2013). *Sampling of Populations: Methods and Applications*. Hoboken, N.J.: Wiley.
- Mairura, L. K. (2014). The Effect of Internet Banking on Cashflow of Commercial Banks in Kenya. Nairobi: UoN Digital Repository.
- Masila, F. K. (2013). The Impact of Internet Banking on Financial Performance of Commercial Banks in Kenya. UoN Digital Repository.
- Mathew, J., McClure, C., and Beatriz, J. (1999). Service Quality in the Banking Sector: The Impact of Technology on Service Delivery. *International Journal of Bank Marketing*, 17/4, 182-191.
- Mohamed, H. (2019). Effect of Mobile Banking On the Financial Performance of Commercial Banks in Kenya. Nairobi: USIU-A Repository.
- Mugenda, O., and Mugenda, A. (2003). *Research Methods Quantitative and qualitative Approaches*. Nairobi: Acts Press.
- Mulwa, F. N. (2017). Effect of Internet Banking on Financial Performance of Commercial Banks in Kenya. Nairobi: UoN Digital Repository.
- Njuguna, P. K., Ritho, C., Olweny, T., and Wanderi, M. P. (2012). Internet Banking Adoption in Kenya: The Case of Nairobi County. *International Journal of Business and Social Science*, Vol. 3 No. 18.

- Njuguna, P. K., Ritho, C., Olweny, T., and Wanderi, M. P. (2012). Internet Banking Adoption in Kenya: The Case of Nairobi County. *International Journal of Business and Social Science*, Vol. 3 No. 18.
- Okiro, K., and Ndungu, J. (2013). The impact of mobile and internet banking on performance of financial institutions in Kenya. *European Scientific Journal*, Vol.9, No.13.
- Romi, I. M. (2015). Mapping E-banking Models to New Technologies. *Journal of Internet Banking and Commerce*, Vol. 20, no. 2.
- Santouridis, I., and Kyritsi, M. (2014). Investigating the Determinants of Internet Banking Adoption in Greece. *Procedia Economics and Finance*, 9, 501 – 510.
- Shah, M., and Clarke, S. (2009). *E-banking Management: Issues, Solutions, and Strategies*. Hershey, PA: Information Science Reference.
- Shields, P., and Rangarjan, N. (2013). *A Playbook for Research Methods: Integrating Conceptual Frameworks and Project Management Skills*. Stillwater, OK: New Forums Press.
- Soko Directory. (2017). Retrieved from The History of the Banking Sector in Kenya: An Evolution in History: <http://sokodirectory.com>
- Sung Youl Park. (2009). An Analysis of the Technology Acceptance Model in Understanding University Students' Behavioral Intention to Use e-Learning. *Educational Technology and Society*, 150–162.
- Vesey, J. T. (2011). The New Competitors: They Think in Terms of 'Speed-To-Market'. *Academy of Management Perspectives* VOL. 5, NO. 2 .

## **APPENDICES**

### **Appendix I: Introduction Letter**

Knight Omari  
PO Box 30889-00100  
Nairobi.  
16/11/2020

Dear Participant,

I am a master of Art student in Project Planning and Management at the University of Nairobi.

This questionnaire is designed to study the adoption of internet banking systems in Kenya: A case study of Nairobi County. The information you give on the questionnaire, will assist me understand the aspects surrounding the determinants of adoption of internet banking services provided by financial institutions specifically the banks in Kenya since you are the one who can give the correct picture, I request you to respond to all the questions frankly and honestly.

Your response will be kept confidential.

Sincerely

OMARI K.W.

## Appendix II: Research Questionnaire

### QUESTIONNAIRE FOR KCB STAFF

My name is Knight Omari a student at Nairobi University; I am carrying out a study on the Determinants in the Adoption of Internet Banking Systems in Kenya: A Case of KCB group Bank in Nairobi County. The study is purely for academic purposes and information you will solely be used for academic purpose. Your identity and information will be treated with confidence and will not be used for any other purpose.

1.	KCB Branch	
----	------------	--

#### I. Demographic Information

2.	Gender	1) Male	
		2) Female	
3.	Please indicate your age bracket?	1) 15- 20 year	
		2) 21-30 years	
		3) 31-40 years	
		4) Above 40 years	
4.	Marital status?	1) Married	
		2) Single	
		3) Divorced	
		4) Separated	
		5) Widowed	
5.	What is your highest academic qualification?	1) No school	
		2) Primary	
		3) Secondary	
		4) Diploma	
		5) Degree	



		6) Post Graduate	
--	--	------------------	--

## II. Economic factors determine adoption of internet banking technology

6.	Do you think internet banking technology has influenced the adoption of internet banking at KCB?	1) Yes	
		2) No	
7.	What other factors have influenced internet banking in your branch?		
8.	Does the current internet banking system effectively offer KCB the required competitive edge in the Kenyan market?	1) Yes	
		2) No	
9.	What other competitive options should KCB adapt to improve its competitive edge		

## III. Staff attributes that determine the adoption of internet banking at KCB Bank Group

10.	What kind banking services are offered at the KCB Internet banking (Please check as applicable)	1) Seeking product and rate information	
		2) Calculate loan payment information	
		3) Download loan applications	
		4) Download personal bank transaction activity	
		5) Check balances on-line	
		6) Apply for consumer loans or credit cards online	
		7) Inter-account transfers	
		8) On-line bill payments	
		9) Other	
		10) Not Applicable	
11.	Are you computer literate?	1) Yes	
		2) No	

12.	What is your knowledge and ability to use the computer?	1) Excellent	
		2) Very	
		3) Good	
		4) Average	
		5) Poor	
		6) Very poor	
		1) Very	
		2) Good	
		3) Average	
		4) Poor	
		5) Very poor	
14.	Have you undergone any specialized training on internet banking systems?	1) Yes	
		2) No	
15.	If yes, which kind of training		
16.	What else do you to improve your ability to use internet banking		

**III.IT infrastructure that determine the adoption of internet banking at KCB Bank group**

17.	To what extent does the current internet banking systems at KCB meet the market needs?	1) Excellent	
		2) Very	
		3) Good	
		4) Average	
		5) Poor	
		6) Very poor	
18.	Do you think KCB bank group effectively and efficiently invested in the internet banking	1) Yes	
		2) No	

		3) Can't tell	
19.	What else needs to be done to improve further the internet banking needs at KCB?		

### Appendix III: NACOSTI Research Permit

  
REPUBLIC OF KENYA  
National Commission for Science, Technology and Innovation

  
NATIONAL COMMISSION FOR  
SCIENCE, TECHNOLOGY & INNOVATION

Ref No: 721179 Date of Issue: 23/November/2020

**RESEARCH LICENSE**



**This is to Certify that Ms., Knight Winfridah Omari of University of Nairobi, has been licensed to conduct research in Nairobi on the topic: DETERMINANTS OF THE ADOPTION OF INTERNET BANKING PROJECT IN KENYA COMMERCIAL BANKS: A CASE OF KCB BANK, NAIROBI COUNTY for the period ending : 23/November/2021.**

License No: NACOSTI/P/20/7836

721179  
Applicant Identification Number

  
Director General  
NATIONAL COMMISSION FOR  
SCIENCE, TECHNOLOGY &  
INNOVATION

Verification QR Code



**NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application**

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013

The Grant of Research Licenses is Guided by the Science, Technology and Innovation (Research Licensing) Regulations, 2014

CONDITIONS

1. The License is valid for the proposed research, location and specified period
2. The License any rights thereunder are non-transferable
3. The Licensee shall inform the relevant County Director of Education, County Commissioner and County Governor before commencement of the research
4. Excavation, filming and collection of specimens are subject to further necessary clearance from relevant Government Agencies
5. The License does not give authority to transfer research materials
6. NACOSTI may monitor and evaluate the licensed research project
7. The Licensee shall submit one hard copy and upload a soft copy of their final report (thesis) within one year of completion of the research
8. NACOSTI reserves the right to modify the conditions of the License including cancellation without prior notice

National Commission for Science, Technology and Innovation  
off Waiyaki Way, Upper Kabete,  
P. O. Box 30623, 00100 Nairobi, KENYA  
Land line: 020 4007000, 020 2241349, 020 3310571, 020 8001077  
Mobile: 0713 788 787 / 0735 404 245  
E-mail: dg@nacosti.go.ke / registry@nacosti.go.ke  
Website: www.nacosti.go.ke