

**INFORMATION TECHNOLOGY INNOVATIONS AND  
PERFORMANCE OF KENYA COMMERCIAL BANK GROUP**

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**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE  
REQUIREMENTS FOR THE AWARD OF A DEGREE IN MASTER OF BUSINESS  
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**2016**

## **DECLARATION**

This thesis is my original work and has not been submitted by anyone I know of for a degree in any University

Signed..... Date.....

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This thesis has been submitted for examination with my approval as University supervisor

## **DEDICATION**

This exploration venture is devoted to my beloved wife and the best mother, advocate and companion to me Mrs. Rose Riziki Oruko for her endless encouragement and support. Further dedication goes to my beautiful daughter Amara Almasi Oruko who keeps me smiling every day. Further dedication goes to my mother Mrs. Amelea Oloo for her love, support and encouragement since I started the MBA program. Further dedication is to my father Eng. Walter Oloo Oruko for his sacrifice of demonstrating to me the angles and estimation of persevering work when I knew nothing. Additionally to my kin Sylvia, Naomi, Christine, Daniel and the super medicinal specialist in the family Dr. Irene Oloo.

This project will be wellspring of inspiration for diligent work for my more youthful kin and even youngsters when they happen to age.

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## TABLE OF CONTENTS

<b>DECLARATION</b> .....	ii
<b>DEDICATION</b> .....	iii
<b>ACKNOWLEDGEMENTS</b> .....	iv
<b>TABLE OF CONTENTS</b> .....	v
<b>ABBREVIATIONS AND ACRONYMS</b> .....	vii
<b>ABSTRACT</b> .....	ix
<b>CHAPTER ONE: INTRODUCTION</b> .....	1
1.1 Background.....	1
1.1.1 Information Technology Innovation.....	1
1.1.2 Performance .....	2
1.1.3 Commercial Banks in Kenya .....	2
1.2 Statement of the Problem.....	3
1.3 Objectives .....	4
1.4 Value of the Study .....	4
<b>CHAPTER TWO: LITERATURE REVIEW</b> .....	6
2.1 Introduction.....	6
2.2 Theoretical Framework.....	6
2.2.1 Diffusion of Innovation (DOI) Theory .....	6
2.2.2 Technology Acceptance Model (TAM).....	7
2.2.3 Schumpeterian Theory of Creative Destruction.....	7
2.3 Information Technology Innovation .....	8
2.4 Financial performance measurement.....	9
2.5 Information technology innovations and financial performance .....	10
2.6 Empirical Studies.....	10
2.7 Conceptual framework.....	11
<b>CHAPTER THREE: RESEARCH METHODOLOGY</b> .....	13
3.1 Introduction.....	13
3.2 Research Design.....	13
3.3 Population .....	13
3.4 Sampling Design.....	13
3.5 Data Collection .....	14
3.7 Data Analysis.....	14
<b>CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND DISCUSSION</b> .....	17

4.1 Introduction.....	17
4.2 General.....	17
4.3 Reliability Testing.....	18
4.4 Extent of usage of Various I.T Innovations in KCB Bank .....	18
4.4 Effect of KCB Bank Group I.T Innovations on Total Income.....	19
4.5 Effect of KCB Bank Group I.T Innovations on Return on Assets.....	21
4.6 Effect of KCB Bank Group I.T Innovations on Bank Profitability .....	22
4.7 Effect of KCB Bank Group I.T Innovations on Customer Deposits.....	23
4.8 Relationship between I.T Innovations and Financial Performance. ....	25
4.8.1 Relationship between I.T Innovations and Total Income .....	25
4.8.2 Relationship between I.T Innovations and Return on Assets.....	26
4.8.3 Relationship between I.T Innovations and Customer Deposits .....	28
4.9 Exploring the Relationship between I.T Innovations and Financial Performance.....	29
4.9.1 Exploring the Relationship between I.T Innovations and Profitability.....	29
4.9.2 Exploring the Relationship between I.T Innovations and Return on Assets.....	31
4.9.3 Exploring the Relationship between I.T Innovations and Total Income.....	34
4.9.4 Exploring the Relationship between I.T Innovations and Customer Deposits .....	36
<b>CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>39</b>
5.1 Introduction.....	39
5.2 Summary of Findings.....	39
5.3 Conclusion .....	39
5.4 Recommendations.....	40
5.5 Limitations of the study .....	41
5.6 Research Areas.....	41
<b>REFERENCES.....</b>	<b>42</b>
<b>APPENDICES .....</b>	<b>44</b>

## **ABBREVIATIONS AND ACRONYMS**

<b>ATMs</b>	Automated Teller Machines
<b>BIS</b>	Bank of international settlement
<b>CBK</b>	Central Bank of Kenya
<b>DOI</b>	Diffusion of Innovation
<b>ECRM</b>	Enterprise Customer Relationship Manager
<b>EPS</b>	Earnings per Share
<b>EFT</b>	Electronic Funds Transfer
<b>EU</b>	European Union
<b>GDP</b>	Gross Domestic Product
<b>IB</b>	Internet Banking
<b>I.C.T</b>	Information Communication Technology
<b>I.T</b>	Information Technology
<b>KCB</b>	Kenya Commercial Bank
<b>KPIs</b>	Key Performance Indicators
<b>MIS</b>	Management Information System
<b>PEOU</b>	Perceived ease of use
<b>PU</b>	Perceived usefulness
<b>POS</b>	Point of Sale
<b>R &amp; D</b>	Research and Development
<b>ROA</b>	Return on Assets
<b>ROE</b>	Return on Equity
<b>RTGS</b>	Real time gross settlement
<b>SPSS</b>	Statistical Package of Social Sciences

**TAM** Technology Acceptance Model

**UK** United Kingdom



## **ABSTRACT**

The KCB Bank Group has gigantically invested in innovation and different types of advancements. The association between I.T developments, speculations and KCB Bank Group's performance should be broke down and researched to check up whether I.T innovation advancements have added to the performance of KCB Bank Group. This paper examined certain I.T innovation advancements of Internet Banking, automated teller machines, point of sale terminals, credit cards, debit cards, electronic funds transfer and mobile banking. These I.T innovation advancements were explored in association with KCB Bank Group markers of monetary performance, for example, profits, return on assets, total income and customer deposits. The specific objectives were: To establish Information technology innovations used by Kenya Commercial Bank Group and also to determine the relationship between Information technology innovation and financial performance of the Kenya Commercial Bank Group. The exploration paper utilized a descriptive survey design and an examination questionnaire that was utilized to gather essential information. The objective were 25 very much chosen KCB Bank branches and departments. The specimen respondents were KCB Bank Group senior managers. An example of 120 questionnaires were managed with 83.3% reaction rate accomplished. Examination was finished with the help of SPSS programming. The discoveries indicated I.T innovation advancements affected positively KCB Bank group's financial gains and tests for criticalness additionally demonstrated that the impact was factually noteworthy. In view of the discoveries of the study, it can be reasoned that I.T innovation developments impact financial performance of KCB Bank Group emphatically. Thus it is prescribed to all partners to keep grasping I.T developments with the KCB Bank Group.

## **CHAPTER ONE: INTRODUCTION**

### **1.1 Background**

Many banks have been keen in improving their financial performance. With the advent and development of information technology as a driver, banks have resulted to systems and processes driven by information technology. This in turn has led to various improvements which have given birth and rise to information technology innovation as a tool for improvement. From a glance, it is clear that majority of banks have tried to apply information technology innovation to improve financial performance. (Ren and Stevens, 2011). According to Nofie (2011), innovation in the financial sector pertains to new, better processes lowering cost of producing existing financial services. According to Agboola (2006), Information technology innovation is a key component to goad development in the financial emergency. I.T innovation advancement is and will be a distinct advantage in empowering developing economies to maintain their monetary development later on. We live in the era when the technologies are deeply embedded into almost all aspects of our day to day lives. Becoming almost unnoticed, information technology help people achieve much more but there are also many shortcomings and consequences. On the positive side, we can have bodily sensors tracking our physiological parameters, physical activity, sleep patterns which can assist in detecting problems or patterns. On the contrary, our attention or focus span is getting shorter as we are being constantly interrupted by emails, instant texts, and notifications delivered to our cell phones or watches, and similar disturbances. Therefore, the privacy aspects in storing and manipulation of data must not be neglected.

#### **1.1.1 Information Technology Innovation**

Information Technology Innovation includes utilizing innovation as a part of new or better approaches to make a more powerful or effective association and enhance arrangement between business objectives and innovation activities. Information Technology Innovation can

take numerous structures. For instance, it can be utilized to transform business forms into robotized information technology works and to create applications (Rafael and Francisco, 2007).Some examples of this innovation in banks include: ATM, IB, Credit card, Debit card, RTGS POS terminal, EFT, Mobile banking etc.

### **1.1.2 Performance**

There are many ways of measuring performance such as operational performance, financial performance amongst others but this paper will focus on financial performance. Monetary performance is the degree of how an affiliation or association utilizes resources from its crucial methodology for business to make or enhance income. This term similarly insinuates the measure of an affiliation's general cash related prosperity. There exist numerous routes in which financial performance can be measured, however this financial measures must be taken in accumulation. In a bank financial performance can be measured in terms of ROE, ROA, income cost, cash and portfolio investment to deposit, loans to deposit, net loans to total asset, nonperforming loans to total loan (NPLTL).

### **1.1.3 Commercial Banks in Kenya**

According to the CBK (2016), Kenya has 1 mortgage finance Company and 42 licensed commercial banks. Out of the 43 institutions, 38 are exclusive business banks and a home loan bank establishment while the Kenyan government claims stakes in the rest of the 3 business banks. As indicated by the KCB Human Resources division (2015), the Kenya Commercial Bank Group follows back to 1896.The parent organization, KCB Group, was shaped as a branch of the then National Bank of India in Mombasa. In 1958, National Bank of India converged with Grindlays Bank to frame the National and Grindlays Bank. After the Kenyan freedom, the Kenyan government obtained 60% of the shares in National and Grindlays Bank to convey keeping money benefits closer to Kenyans. In 1970, the Government took control of the Bank and renamed it the Kenya Commercial Bank.

KCB Group announced in April 2015 of its intention to incorporate a new wholly owned subsidiary called KCB Bank Kenya Limited, where it would transfer the Kenyan banking assets liabilities and business. This converted KCB Group to a non-trading holding company owning both non-banking and banking subsidiary companies. According to the Kenya Bankers Association (2015), KCB Bank Kenya is among the three biggest commercial banks in Kenya with assets slightly more than US\$2.65 billion (KES: 223 billion). The two other large Kenyan commercial banks include the Barclays Bank Kenya and the Standard Chartered Bank Kenya. KCB group has proceeded to gigantically put resources into I.T innovation based advancement and preparing of labor assets to deal with this new advances. The connection between the bank's financial performance and the growing investments in technology based bank innovation in Kenya Commercial Bank as a whole needs to be studied and establish whether information technology innovation play a part in contributing to the financial performance of the whole group. This research studied information technology innovation in the area of mobile banking, electronic funds transfer, internet banking, debit and credit cards, automated teller machines, and point of sale terminals. These I.T innovations were examined in association with their impact on Kenya commercial bank group financial performance related markers, for example: customer deposits, profits, total income and return on assets.

## **1.2 Statement of the Problem**

Organizations innovate to realize better performance. If they use technology they expect better financial performance results. But sometimes this results might not be always as expected. Mabrouk and Mamoghli, (2010). Despite many commercial banks investing a lot in information technology innovation to realize improvement there are mixed results from research. Rafael and Francisco (2007) did an exploration on regional banking developments advancements and development in the period 1986-2001 inside Spain. They found that item and administration conveyance development decidedly add to speculation and general reserve funds development

and to regional Gross Domestic Product (GDP). Hendrickson and Nichols (2011) had similar assumptions on his study on the execution of little banks in the USA and presumed that when Banks embrace development over their few branches they perform ideally better. As a result of the differing holes in writing, there is have to perform other same studies and more so in Kenya where data innovation development have been on the ascent.

Despite Kenya Commercial Bank, having been listed by the Banker magazine among the Top 1000 Banks in the planet in terms of return on assets, the contribution and impact of information technology innovation on its performance and more so financial performance is still misunderstood by many and even the employees are not an exception. This can be attributed the fact that one, the impact and role of information technology innovation to a bank's financial performance remains inadequately understood and two, information technology innovation impact on a bank's performance and more so financial performance is untested Mabrouk and Mamoghli (2010).Hence there was need to find out the impact and role of information technology innovation to KCB Group's financial performance? And to what extent does information technology innovation impact on a KCB Group's performance?

### **1.3 Objectives**

This study pursued the following specific objectives:

- a) To establish Information technology innovations used by Kenya Commercial Bank Group.
- b) To determine the relationship between Information technology innovation and financial performance of the Kenya Commercial Bank Group.

### **1.4 Value of the Study**

The study will be of substance to the accompanying partners;

This examination study will help the Kenyan government as it focus to influence on I.T to accomplish development of the Kenya financial related administrations. A standout amongst the most vital driver of progress in Kenya is I.T innovation and development.

The research study findings will help the Kenya Commercial Bank Group Management in appreciating and understanding the importance of information technology innovation on their performance in profitability growth.

The study discoveries will likewise help other commercial banks in acknowledging and comprehending the significance of I.T innovation advancements on their execution in gainfulness development.

To the researchers, the study will be an extra to the current collection of learning as it prescribes routes for development of financial performance by utilizing I.T innovation.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

Chapter two of this research paper reviewed the literature of information technology innovation. It typically looked at the key theories of information technology innovation, developed a conceptual framework and discussed the research gaps of the same.

### **2.2 Theoretical Framework**

The theoretical framework depicts and presents the hypothesis that clarifies why the exploration issue been contemplated exists. A theoretical structure comprises of definitions, ideas and existing hypothesis/speculations that are utilized for the specific study. Torraco (2004).

#### **2.2.1 Diffusion of Innovation (DOI) Theory**

As indicated by Rogers (1995), the DOI hypothesis is a celebrated model utilized as a part of I.T innovation research to portray client selection on new advancements. Rogers characterizes dissemination as the methods through which an advancement is imparted through a channel over a timeframe (Rogers, 1995).

In DOI, the dissemination rate is influenced by intricacy, similarity, recognizability, trial capacity and advancement's relative favorable position. Rogers (1995) characterizes Complexity, which is similar to TAM's utilization, alludes to how much a given advancement is seen as being generally hard to utilize. Then again, relative favorable position alludes to the prevalence of a development looked at over the ancestor. Similarity alludes to how a development is seen to be good together with the current convictions, values, encounters and needs of adopters. Trial capacity is how much a thought can be tried under insignificant premise. At long last, recognizability is how much the resultants of an advancement are noticeable (Rogers, 1995). The DOI is pertinent in light of the fact that it clarifies the

motivation behind why banks embrace specialized developments. One reason why banks receive I.T innovation advancements is relative favorable position.

This implies banks that receive I.T innovation developments have generally preferred financial related favorable position over the individuals who don't.

### **2.2.2 Technology Acceptance Model (TAM)**

Technology Acceptance Model (TAM) clarifies the way clients embrace/acknowledge and utilize an innovation. TAM was seen by Davis in 1989. The model says that once a client is given another innovation, certain components impact their choice to how and when they will utilize it. This incorporates its apparent convenience and seen helpfulness. Different variables like clients, contenders, monetary components and outside impacts from providers, are not considered by the TAM (van Akkeren and Harker, 2003). TAM embraces settled causal chain of genuine conduct convictions, goal and disposition. This was produced by social clinicians from the hypothesis of contemplated activity. In Davis' study, two vital parts are recognized; seen convenience and seen helpfulness (Davis, Foxall and Pallister, 2002).

These perceptions predict attitudes towards a given system adoption. The attitude develops the intentions that cause actual system usage and the user intentions to use. In other studies regarding technology, TAM is widely adopted and showed that it contributes to the development of a prediction of an individual's usage of technology (Fishbein & Ajzen, 2010).

### **2.2.3 Schumpeterian Theory of Creative Destruction.**

Schumpeter (1939) considered development of innovation to be unending storms of inventive obliteration that were key powers for development rates in an industrialist framework. Schumpeter's hypothesis advanced through his lifetime to the point that a few scholarly people had separated his initial deduction in light of the idea that development was much reliant on clients willing to go up against remarkable risks saw as "a demonstration of will". This drove



the complement with respect to oligopolies in technological advancement thus later insincerely observed to be essential responsibility of the work. (Freeman, 1994).

Schumpeter (1928) was not a mechanical determinist but rather had confidence in the authoritative and social strengths that assumed imperative parts in his recurrent procedure of modern change. Schumpeter contended that business visionaries, R&D specialists or autonomous designers in expansive firms, made the open door for new benefits with their advancements. On most of his conceptualization with respect to development, Schumpeter still was not capable clear up the wellspring of innovation. The Schumpeterian Theory is key since new innovation replaces old innovation which is better and increases the value of the client/adopter.

### **2.3 Information Technology Innovation**

Information Technology Innovation includes utilizing innovation as a part of new or better approaches to make a more compelling or productive organization and enhance arrangement between business objectives and innovation activities

Agreeing with Okunoye and Frolick (2007) I.T innovation is critical to the development and financial performance execution of firms. Inventive firms additionally grow quickly as far as employment and profitability. All things considered receptive is the dedication to and proceeded with utilization of the innovation. The DOI hypothesis clarifies when and how another practice or thought or recently presented data and correspondence medium is dismissed or embraced after some time in a given society (Okunoye and Frolick, 2007).According to Agboola (2006), the utilization of I.T innovation methods, ideas, approaches and execution systems to banking administrations has gotten to be basic and a worry to numerous banks and an essential for worldwide aggressiveness. I.T innovation specifically influences how senior administration decide, there arranging and the items offered in their ventures. Henceforth,

reassuring clients to utilize the Internet for banking transactions brings about significant working costs reserve funds (Sathye, 1999).

Absence of consumer satisfaction in banking leading to long lines and below standard service is a key explanation why fast move to electronic conveyance (Karjaluo, Mattila and Pentto, 2002). As indicated by Porteus (2006), Mobile banking is rising as a noteworthy electronic channel for the financial administrations and global banking industry. The exceptional way of mobile phones and services, and its capacity to extend client base, diminish general operational expenses and streamline operations are required to help prospects in the business. Expanding mobile communication selection among customers, and all the more regularly among the more youthful era (in the 18-34 years age bunch), and gigantic ascent sought after for mobile payments are relied upon to goad interest for mobile banking services.

#### **2.4 Financial performance measurement**

Monetary performance is the degree of how an affiliation or association utilizes resources from its crucial methodology for business to make or enhance income. This term in like manner insinuates the measure of an affiliation's general cash related prosperity in a given time allotment, and therefore can be used to take a gander at various firms over comparative industry or to consider sections or ventures in aggregation.

Measuring and investigating performance is currently across the board in both public and private sectors in numerous nations (Williams, 2003). The apparatus that is most basic for this procedure is key performance indicators (KPIs) Williams (2003). Some studies, for example, Vakkuri and Meklin (2006), Modell (2004), Moynihan (2005), have contended that the performance measurement frameworks are of typical esteem significance.

## 2.5 Information technology innovations and financial performance

Information technology is a valuable source of business innovation since it provides efficiency gains. As Koellinger (2005) puts it, Information technology makes it easier to improve business processes, reduce transaction costs, fragment processes along the value chain ,that is vertically and horizontally and also across different geographical locations, facilitate coordination with suppliers, and increase diversification.

I.T innovation empowers different associations to bring cash up in bigger sums inexpensively than they could somewhere else (Lerner, 2006). Thus cost and use minimization. In a more broad setting, the I.T innovation development, globalization and deregulation inside the banking industry can decrease financial gain floods of banks. Therefore in this manner the indispensable activities of numerous banks are probably going to tilt the saving money elements.

## 2.6 Empirical Studies

A number of studies have been reviewed as illustrated below:

**Table 2.1 Critique of Existing Literature**

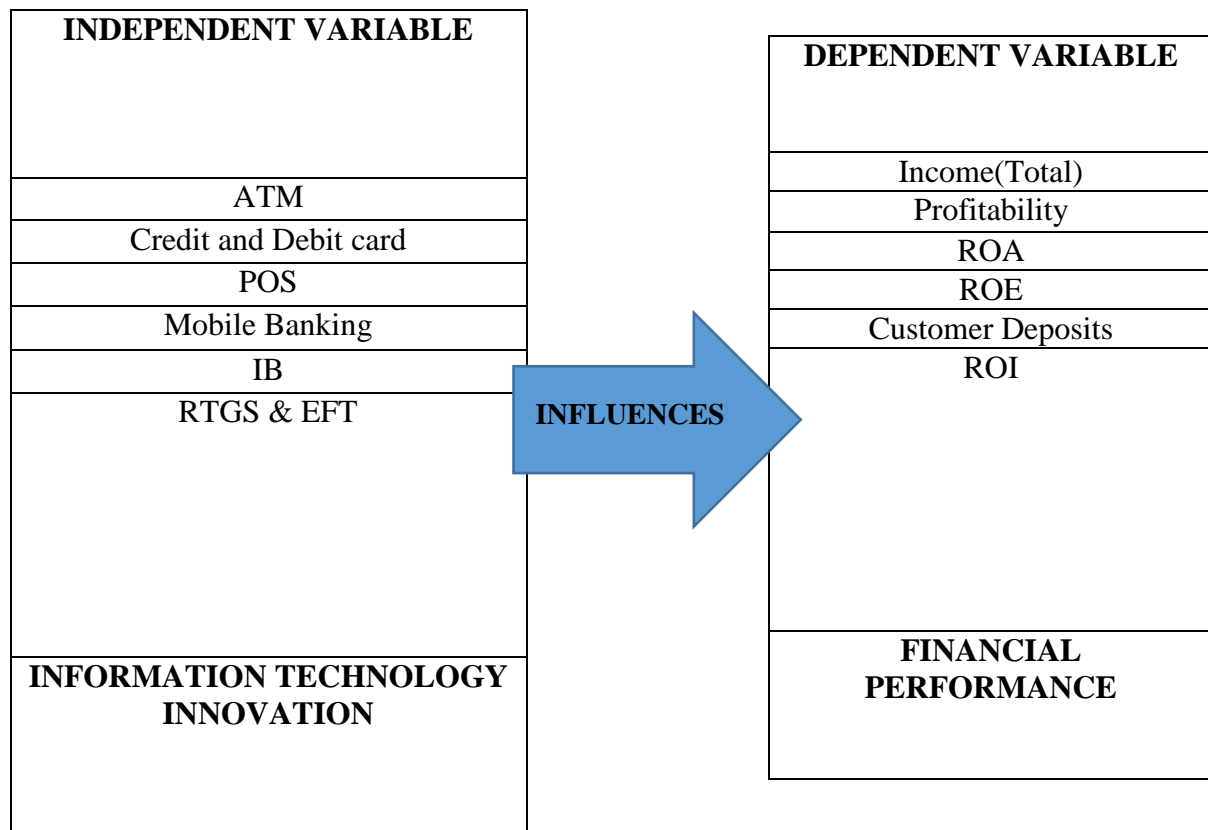
<b>Author</b>	<b>Research</b>	<b>Findings</b>	<b>Research Gaps</b>
Agboola (2006)	I.T and banking in Nigeria	Technology is the basis of competition in Nigeria banking industry	Focused on Nigeria only
Akram and Allam (2010)	Influence of technology on Jordanian banks	Zero results on using of MIS in Jordanian banks for ROE growth	Focused on a few innovation
Daneshvar and Ramesh (2012)	Relationship of IT investments and profitability on Indian banks	I.T investments resulted in growth of ROA and deposits	Did not focus on other I.T investments.
Malhotra and Singh (2009)	How performance and risk is affected by Internet Banking	IB is more efficient and profitable	Focused on internet banking alone

Kozak (2005).	The point of data innovation in the profit and cost in banking industry.	There is an association amongst ICT and profitability and cost.	Did not focus on other countries
Nadia, and Scholnick, (2003).	Connection between bank ATM surcharges and customers.	1) The correlation between IT utilizations and bank's money related execution or bit of the general business is dependent upon the level of system effect. 2)The innovation in I.T could decrease the wage surges of banks	Didn't look at other income streams of the bank.
Nader (2011)	Saudi Arabia banks profit efficiency between 1998- 2007.	1) Phone, ATMs, branches had a positive profit effect. 2) Unexpectedly concluded that the quantity of POSs, PC accessibility banking and mobile banking accessibility did not enhance benefit effectiveness.	Focused on one country
Prager (2001)	Relationship of ATM surcharges and Small bank organizations.	ATM surcharge levels is negatively related to deposits in small banks.	Focused on ATMS
Shu and Strassmann (2005)	Relationship between I.T and U.S bank profits (Based on 12 banks in USA)	I.T cannot improve banks' earnings.	-Focused on US alone -Did not mention conclusive on performance parameters

## 2.7 Conceptual framework

The statements of income of commercial bank demonstrate benefits prior and then afterward impose. Another great measure is value (ROE) to the proportion of pre-tax profits other than aggregate total assets with higher value proportion ought to likewise lead to upsurge of return on assets (Ceylan, Emre and Asl, 2008).

**Table 2.2: Conceptual Framework**



From related writing, it's unmistakable from; Daneshvar and Ramesh (2012), Kozak (2005), Nofie (2011), Agboola (2006) Dew (2007), Lerner (2006), Acharya and Kagan (2004), DeYoung (2005), and that I.T innovation development have financial gains on banks. Others like; Nadia, Anthony and Scholnick (2003), McAndrews (2002), Nader (2011), and Prager (2001) discovered negative impact of I.T innovations on keeping money area. Akram and Allam (2010), discovered zero effect on the use of MIS to banks in Jordan. These blended results demonstrate missing extensive examination on I.T innovations and performance. This study took a different approach from these and explored a few I.T innovation and their impact on Kenya Commercial Bank Group performance.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This section takes a gander at the standards which guided this exploration. Dawson (2009).It looks at the investigation and traces for the study, the data assembling for the study and the examination of accumulated data.

### **3.2 Research Design**

Descriptive survey design was utilized as a part of this paper. Lavrakas (2008) states this is a route for gathering .Orodho (2003) and Kothari (2004) depict it as one that looks to depict precisely the attributes of a particular individual, gathering or circumstance. As per Polit and Beck (2003) specialists take part in different exercises, for example, counting, watching, observing portray, and group with regards to descriptive research.

### **3.3 Population**

According to the Kenya Commercial Bank Group human resource division annual report of year 2014/2015, as at 31st March 2015 there were 7139 employees in Kenya Commercial Bank Group including its subsidiaries in Uganda,Tanzania,Burundi,Rwanda and South Sudan of which approximately 2337 were in the management level grades and 300 in senior level management.

The 244 KCB Bank Group branches inclusive of subsidiaries as at 31<sup>st</sup> March 2015 was the sampling frame. The Kenya Commercial Bank Group Human Resource Division report of 2011 shows the number employed in the Group as at 31st March 2015.

### **3.4 Sampling Design**

The study utilized a purposive sampling method to recognize the example units. The sample units were twenty five (25) Kenya Commercial Bank Group Branches and department of which twenty(20) are branches in Kenya (Moi Avenue, Kimathi, Tom Mboya, Kipande house, Kicc,

Sarit Centre, Moi's bridge, Bomet, Nandi Hills, Embu, Nyeri, Thika, Chuka, Mombasa High Court, Voi, Mvita, Treasury Square, Kakamega, Kitale, Sondu, One(1) branch from Uganda (Gulu), one(1) branch from Tanzania (Arusha), One(1) branch from Burundi (Gozi), One(1) branch from Rwanda (Huye), one(1) branch from south Sudan (Bentiu)

The 20 branches were selected from Kenya because Kenya holds 75% of the business with 183 branches out of a total of 244 branches for the Group. Furthermore, most systems run from Kenya serving mainly the vast Kenyan market, The Kenyan branches that were used for the study had readily and easily available information with higher level of information disclosure. This Branches were also be selected due to ease of access to information.

This investigation applied simple random sampling whereby 120 questionnaires were distributed to the above specified branches.

### **3.5 Data Collection**

The study utilized questionnaire surveys to acquire information for investigation which was further be approved from examination outcomes. Secondary data from the inspected branches were gathered on; estimation of aggregate wage, estimation of aggregate benefit before expense, estimation of aggregate resources, estimation of aggregate stores; number of web saving money clients and the volume of electronic assets exchanges. The secondary data was gathered from the Kenya Commercial Bank Group retail Division and yearly reports of the bank. The information was for the most part one as of now availed to people in general

### **3.7 Data Analysis**

Ordinarily, the information gathered in a study is fairly broad and research inquiries and theories can't be replied by a straightforward scrutiny of numeric data and along these lines information should be prepared and broke down in a precise and cognizant design. Quantitative information is intelligibly broke down through insights. Measurable methodology examinations cover a more noteworthy scope of systems, from straightforward and essential

techniques that we as a whole utilize consistently like figuring a normal to refined and complex strategies. In spite of the fact that specific strategies are computationally imposing, the rationale of factual tests is anything but difficult to handle, and PCs have helped analysts not to get stalled with point by point scientific operations (Polit and Beck, 2003).

In this study, listed below were equations that was be utilized to ascertain the noteworthiness of the hypothesis study:

Objective one: To establish Information technology innovations used by Kenya Commercial Bank Group. This was based on descriptive statistics

Objective two: To determine the relationship between Information technology innovation and financial performance of the Kenya Commercial Bank Group. The focus here was to determine how I.T innovations affect the various performance measures such as total income, ROA, profitability and customer deposits. To determine if information technology innovation affect total income of Kenya Commercial bank group.

$$Total\ Income = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon$$

The independent variables of; automated teller machines, debit and credit cards, mobile banking, internet banking, point of sale terminals and electronic funds transfer. They were represented by X1, X2, X3, X4, X5, and X6 respectively.  $\hat{\alpha}_0$  is the constant or intercept while  $\hat{\alpha}_1$ ,  $\hat{\alpha}_2$ ,  $\hat{\alpha}_3$ ,  $\hat{\alpha}_4$ ,  $\hat{\alpha}_5$  and  $\hat{\alpha}_6$  was the corresponding coefficients for the respective independent variables.  $\hat{\alpha}$  was the error term which represents residual or disturbance factors or values that are not captured within the regression model .To establish whether information technology innovation influence return on total assets of Kenya Commercial Bank Group. The following

was the multiple linear regression equation used to determine how information technology innovation influence ROA of KCB Bank group.

$$ROA = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon$$



To establish effect of information technology innovation on profitability of Kenya Commercial Bank Group. The following was the multiple linear regression equation used to determine how information technology innovation influence profitability of KCB Bank group. *Profit before Tax*

$$Tax = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon$$

Profit before tax was obtained from the profit and loss statements of the banks.

To establish information technology innovation impact on customer deposits of KCB Bank Group. The following is a multiple linear regression equation used: *Total Deposits*

$$= \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon$$

Total deposits were obtained from the balance sheet of the Group. Deposits are the customer funds held by Group at a particular time and are expressed in Kenya shillings.

Where:

{ $\beta_i$ ;  $i=1,2,3,4,5,6$ } = The coefficients representing the various independent variables.

{ $X_i$ ;  $i=1, 2, 3, 4, 5, 6$ } = Values of the various independent (covariates).  $\varepsilon$  is the error term which is viewed to be basically distributed with mean zero and constant variance.

**Table 3.1: Data Analysis summary**

OBJECTIVE	SECTION OF QUESTIONNAIRE	ANALYSIS
a) To establish Information technology innovations used by Kenya Commercial Bank Group.	Section B	Descriptive Statistics
b) To determine the relationship between Information technology innovation and financial performance of the Kenya Commercial Bank Group.	Section C to F	Regression Correlation Analysis

## **CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND DISCUSSION**

### **4.1 Introduction**

This section presents information examination and results within the framework of the research objectives. The data used for this research was collected from staff of the KCB Bank Group. To analyze and test the hypothesized relationships, regression analysis was applied.

This study explored I.T innovation and financial performance of KCB Bank Group. In particular, the study explored the impact that electronic funds transfer, credit and debit cards, internet banking, automated teller machines, point of sale terminals and mobile and their relation to monetary performance of KCB Bank group as demonstrated by total income, ROA, deposits and profits. This part contains points of interest of; the reaction rate, test attributes, presentation of information investigation, elucidation and examination of discoveries. Information presentation is sorted out in light of the particular targets of the study.

### **4.2 General**

Data collection was conducted during end of June to beginning of September 2016 by use of questionnaires while a personal-built information accumulation template was utilized for gathering optional information. One hundred and twenty (120) questionnaires were distributed and given to haphazardly chosen bank senior managers from 20 offices and branches. One hundred polls were returned culminating to a 83.3% reaction rate. The reaction rate is viewed as satisfactory based on proposals by Saunders, Lewis and Thornhill (2007) that recommend a 30-40% reaction. In view of these statements, this infers the reaction rate for this study was sufficient.

The study focused also to establish gender of the respondents. As per study discoveries, 30% of the respondents were male, while 70% were female. As per study discoveries, majority of the respondents (67%) were between the age of 41 and 50 years. 29% of the respondents were between the age of 31 and 40 years while 2% were between the ages of 21 to 30 years old. 2%

were over 50 years old. The respondents were asked to state the duration they have been in the banking industry. The majority (78%) had been in the banking industry for 5-10 Years. 20% of the respondents had worked in the banking industry for more than 10 years while 2% had been in banking for 1 to 5 years.

### 4.3 Reliability Testing

Unwavering quality insinuates the consistence or relentlessness of the data. A measuring instrument is strong if it gives relentless and reliable results (Kothari, 2004). To gage the trustworthiness of the data gathering instrument (internal consistency), Cronbach's alpha ( $\alpha$ ) was used. The keep running of the thumb for Cronbach's alpha is that the closer the alpha is to 1, the higher the resolute quality (Kothari, 2004).

Table 4.1 beneath shows the reliability insights for four factors. Every one of the factors were very solid with a Cronbach's alpha unwavering quality coefficient more noteworthy than 0.7. The four factors were Effect of I.T advancements on aggregate salary ( $\alpha=0.891$ ), Effect of Bank developments on ROA ( $\alpha=0.701$ ), Effect of I.T innovations on Bank profitability ( $\alpha=0.780$ ) and Effect of I.T innovations on Customer deposits ( $\alpha=0.737$ )

**Table 4.1: Reliability Analysis**

Scale	Items	Cronbach's Alpha ( $\alpha$ )
Effect of I.T innovations on Total Income	18	0.891
Effect of Bank Innovations on ROA	18	0.701
Effect of I.T innovations on Bank profitability	18	0.780
Effect of I.T innovations on Customer Deposits	18	0.737

### 4.4 Extent of usage of Various I.T Innovations in KCB Bank

Respondent were asked to rate the extent of usage of I.T innovations in KCB Bank group. Eight items were measured on a likert-type scale ranging from 1 being “never” to 5 being “All the time”.

The respondents were asked to rate the extent of usage of ATM, Internet Banking, Debit cards, credit cards, Real time gross settlement (RTGS), POS, mobile banking and (EFT) Information Technology innovations in KCB Bank Group to enhance Financial performance of the Bank. As shown in Table 4.2, majority of the respondents (94%) indicated that ATMs are all the time used to enhance financial performance of the bank. 6% of the respondents however indicated that ATMs are often used to enhance the financial performance of the bank.

**Table 4.2: Extent of usage of I.T innovations**

<b>I.T Innovations</b>	<b>Mean</b>	<b>Std. Deviation</b>
Extent of usage of Automated teller machine (ATM)	4.94	0.24
Extent of usage of Mobile Banking	4.00	0.00
Extent of usage of Debit Cards	4.00	0.00
Extent of usage of Electronic funds transfer (EFT)	3.96	0.24
Extent of usage of Internet Banking	3.62	0.89
Extent of usage of Credit Cards	2.98	0.20
Extent of usage of Point of Sale (POS) terminal	2.94	0.40
Extent of usage of Real time gross settlement (RTGS)	2.07	0.43

As shown in Table above, the extent of usage of ATMs was highly rated by the respondents (Mean=4.94, SD= 0.24). This demonstrates greater part of the respondents concurred that the most widely used I.T innovation is ATM.

On the other hand the extent of usage of RTGS was lowly rated by the respondents (Mean=2.07, SD= 0.43). This demonstrates greater part of the respondents concurred that the least widely used I.T innovation is RTGS.

Credit Cards (Mean=2.98, SD= 0.20), Debit Cards (Mean=4.00, SD= 0.00) Internet banking (Mean=3.62, SD= 0.89), POS (Mean=2.94, SD= 0.40), Mobile banking (Mean=4.00, SD= 0.00) and EFT (Mean=3.96, SD= 0.24).

This implies ATM is the most accepted and widely used I.T innovation in KCB Bank Group, followed by mobile banking, debit cards, EFT, IB, credit cards, POS an then RTGS

#### **4.4 Effect of KCB Bank Group I.T Innovations on Total Income**

Eighteen (18) items were used to measure effect of Information and Communications Technology innovations on total income. These items were then measured on a likert-type

scale ranging from 1 being “strongly disagree” to 5 being ”strongly agree”. The results are presented in Table 4.3 below.

**Table 4.3: Means and Standard Deviations for Effect of I.T innovations on Total income**

<b>Effect of I.T innovations on Total Income</b>	<b>Mean</b>	<b>Std. Deviation</b>
Effect of Mobile Banking on Total Income	4.77	0.24
Effect of EFT on Total Income	4.39	0.53
Effect of POS on Total Income	4.38	0.54
Effect of Internet Banking on Total Income	4.37	0.56
Effect of ATM on Total Income	4.14	0.43
Effect of Debit & Credit Cards on Total Income	3.78	1.11

As shown in Table above, Effect of Mobile Banking on Total Income was highly rated by the respondents (Mean=4.77, SD= 0.24). This demonstrates greater part of the respondents concurred that the Effect of Mobile Banking on Total Income was greater than the effect of ATM (Mean=4.14, SD= 0.43)

On the other hand the Effect of Debit & Credit Cards on Total Income was lowly rated by the respondents (Mean=3.78, SD= 1.11). This demonstrates greater part of the respondents concurred that Debit & Credit Cards has the least effect on groups Total Income.

Internet banking (Mean=4.37, SD= 0.56), POS (Mean=4.38, SD= 0.54), EFT (Mean=4.39, SD= 0.53) and ATM (Mean=4.14, SD= 0.43)

In an examination in a Nigerian study in regards to I.T innovations by Agboola(2006),it unveiled that I.T innovations is the driving force of competition in the banking industry. Agboola reiterated that banks which embraced I.T had a competitive advantage over others. This more or less matches the findings of the study relating to KCB Bank group.

Misti and Ouma (2010) did an investigation in Kenya regarding use of Cell phones for banking. They concluded that cell phone banking gave customers ease of accessing and managing their money in their bank accounts. Nevertheless they found out that mobile banking gave customers dealing in various transactions which might be difficult when they walk to a branch, hence giving the bank a competitive advantage when it comes to increasing their income against other

banks which did not offer the same innovation. Porteus (2006) conducted the same examination and concluded that banking by use of cell phones increased the financial gains by various banks which offered the service. This study agrees with previously mentioned studies, that banking by use of I.T innovations increases the income for banks in this case KCB Bank group.

Nader (2011) did an investigation in Saudi Arabia. He studied profit efficiency of Saudi Arabia banks and concluded that the number of ATMS and branches had a positive effect n profit efficiency of Saudi Arabian Banks.

#### **4.5 Effect of KCB Bank Group I.T Innovations on Return on Assets**

Eighteen (18) items were used to measure effect of Bank Information and Communications Technology innovations on return on assets. These items were then measured on a likert–type scale ranging from 1 being “strongly disagree” to 5 being ”strongly agree”. The results are presented in Table 4.4 below.

**Table 4.4: Means and Standard Deviations for Effect of I.T innovations on Return on assets**

<b>Effect of I.T innovations on Return on assets</b>	<b>Mean</b>	<b>Std. Deviation</b>
Effect of ATM on ROA	4.75	0.48
Effect of Mobile Banking on ROA	4.70	0.35
Effect of EFT on ROA	4.14	0.22
Effect of Internet Banking on ROA	4.13	0.22
Effect of Debit & Credit Cards on ROA	3.75	0.81
Effect of POS on ROA	3.71	0.22

As shown in Table 4.4 above, effect of ATM on return on assets was highly rated by the respondents (Mean=4.75, SD= 0.48).This indicates that majority of the respondents agreed that the Effect of ATM on return on assets was greater. On the other hand the Effect of POS on ROA was lowly rated by the respondents (Mean=3.71, SD= 0.22). This indicates that majority of the respondents agreed that POS has the least effect on groups ROA. Internet banking

(Mean=4.13, SD= 0.22), Debit and credit cards (Mean=3.75, SD= 0.81), EFT (Mean=4.14, SD= 0.22) and Mobile Banking (Mean=4.70, SD= 0.35).

Daneshvar and Ramesh (2012) did a study in India in regards to impact of I.T investments and advancements on profitability and productivity of Indian public sector banks. They found out that investments on I.T contributed to increased amount of ROA as profitability. Daneshvar and Ramesh agreed that when bank customers use the ATMs for any service such as withdrawal of money or checking of balance they are charged a fee and in turn their bank receives financial gain on their asset hence increase of ROA of the bank. This is the same case when it came to banking using the cell phones. The use of mobile banking by a client to receive a bank's service increases the bank's ROA. Kozak (2005) did a similar study on the role of I.T in the profit and cost efficiency improvements of the banking sector. The study found optimistic relationship among I.T and cost savings. Kozak mentioned that ATMs and IB increased the ROA of banks. They amplified that the banks which embrace I.T innovations are the once which are better suited for survival in the 21<sup>st</sup> century.

#### **4.6 Effect of KCB Bank Group I.T Innovations on Bank Profitability**

**Table 4.5: Means and Standard Deviations for Effects of Bank I.T Innovations on Profitability**

<b>Effect of Bank I.T Innovations on Profitability</b>	<b>Mean</b>	<b>Std. Deviation</b>
Effect of EFT on Bank Profitability	4.07	0.20
Effect of Internet Banking on Bank Profitability	4.05	0.20
Effect of Mobile Banking on Bank Profitability	3.98	0.52
Effect of ATM on Bank profitability	3.56	0.55
Effect of POS on Bank Profitability	3.30	0.54
Effect of Debit & Credit Cards on Bank Profitability	2.93	0.36

Eighteen (18) items were used to measure effect of Bank Information and Communications Technology innovations on profitability. These items were then measured on a likert-type scale ranging from 1 being “strongly disagree” to 5 being ”strongly agree”. The results are presented in Table 4.5 above. As shown in Table above, effect of EFT on Profitability was highly rated by the respondents (Mean=4.07, SD= 0.20).This indicates that majority of the respondents agreed that the Effect of EFT on profitability was greater. On the other hand the Effect of Debit & Credit Cards on profitability was lowly rated by the respondents (Mean=2.93, SD= 0.36). This indicates that majority of the respondents agreed that Debit & Credit Cards has the least effect on groups profitability. Internet banking (Mean=4.05, SD= 0.20), ATM (Mean=3.56, SD= 0.55), POS (Mean=3.30, SD= 0.54) and Mobile Banking (Mean=3.98, SD= 0.52). Malhotra and Singh (2009) did a study on the Impact of I.B on bank performance and risk. They found out that on average internet banks are larger, more profitable and more operationally efficient. Kozak (2005) did a similar study on the role of I.T in the profit and cost efficiency improvements of the banking sector. The study found optimistic relationship among I.T and cost savings. Kozak mentioned that ATMs and IB increased the ROA of banks. They amplified that the banks which embrace I.T innovations are the once which are better suited for survival in the 21<sup>st</sup> century.

#### **4.7 Effect of KCB Bank Group I.T Innovations on Customer Deposits**

Eighteen (18) items were used to measure effect of Bank Information and Communications Technology innovations on Customer deposits. These items were then measured on a likert-type scale ranging from 1 being “strongly disagree” to 5 being ”strongly agree”. The results are presented in Table 4.6 below.



**Table 4.6: Means and Standard Deviations for Effects of Bank I.T Innovations on Customer Deposits**

<b>Effect of Bank I.T Innovations on Customer Deposits</b>	<b>Mean</b>	<b>Std. Deviation</b>
Effect of Mobile Banking on Customer Deposits	4.47	0.46
Effect of Internet Banking on Customer Deposits	4.46	0.49
Effect of EFT on Customer Deposits	4.11	0.25
Effect of Debit & Credit Cards on Customer Deposits	3.65	0.57
Effect of POS on Customer Deposits	3.57	0.70
Effect of ATM on Customer Deposits	3.30	0.55

As shown in Table above, Effect of Mobile Banking on Customer Deposits was highly rated by the respondents (Mean=4.47, SD= 0.46). This indicates that majority of the respondents agreed that the Effect of Mobile Banking on Customer Deposits was greater. On the other hand the Effect of ATM on Customer Deposits was lowly rated by the respondents (Mean=3.30, SD= 0.55). This indicates that majority of the respondents agreed that ATM has the least effect on Customer Deposits. Internet banking (Mean=4.46, SD= 0.49), EFT (Mean=4.11, SD= 0.25), POS (Mean=3.57, SD= 0.70) and Debit & Credit Cards (Mean=3.65, SD= 0.57)

Mobile banking is constant on-line keeping money, accessible at whatever time, anyplace all through the nation, it is advantageous, moderate and secure and in this way it is a great deal more successful in creating reserve funds propensities and consequently prompt increment in bank stores. Cell phone likewise makes access to saving money and propelled installment exchanges at moderate cost. There has been revamped and updated mobile platform within the group. This was paved way to relauching of the mobile application with increased features. The features included two main modules of transact and account. Within the transact module is Mpesa, airtime, pay bill, mvisa, transfer, load card, lipa karo, withdraw and finally balance which allows a customer to check on their account balances. Account module will just allow a client to view all his or her accounts within the group and check on the Estatements for the

same. This has revolutionized the way KCB customers interact and do their banking. All this services like using any of this features translates to revenue for the bank in that anytime I request for a service as a customer the bank charges real-time. And how has this influenced customer deposits? What happens is that with the mobile banking for example, customers can transfer money from one platform to another and deposit the money in their KCB account which in turn increases the overall customer deposit equation for the bank. Which improves the bank's deposits. On the other hand, through the mobile platform, clients are able to open accounts virtually over their mobile phones. Once they open these accounts they are requested to deposit some money to activate the KCB accounts which in turn increase customer deposits for the bank. Nevertheless, these mobile platform is so rich also to the entrepreneurs. An entrepreneur can direct his customers to pay directly to their KCB account using the KCB pay bill number. This pay bill number is used to deposit money in any KCB account.

#### 4.8 Relationship between I.T Innovations and Financial Performance.

##### 4.8.1 Relationship between I.T Innovations and Total Income

**Table 4.18 Pearson Product-Moment Correlations between the effect of bank I.T Innovations on Total Income and Extent of usage of ATM, Extent of usage of Internet banking, Extent of usage of Credit Cards, Extent of usage of RTGS, Extent of usage of POS and Extent of usage EFT**

Variables	1	2	3	4	5	6	7
1. Effect of I.T Innovations on Total Income	1	.163	.158	-.092	.158	.278**	.351**
2. Extent of usage of ATM		1	.417**	.398**	-.057	.068	-.042
3. Extent of usage of IB			1	.299**	-.009	.193	-.071
4. Extent of usage of Credit Cards				1	-.217*	-.015	-.017
5. Extent of usage of RTGS					1	.554**	.027
6. Extent of usage of POS						1	-.025
7. Extent of usage EFT							1

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

\* . Correlation is significant at the 0.05 level (2-tailed).

The study sought to establish whether there were significant relationships between I.T Innovations and Total Income and Extent of usage of ATM, Extent of usage of Internet banking, Extent of usage of Credit Cards, Extent of usage of RTGS, Extent of usage of POS and Extent of usage EFT. Results of correlation analysis between the effect of bank I.T Innovations on Total Income and Extent of usage of ATM, Extent of usage of Internet banking, Extent of usage of Credit Cards, Extent of usage of RTGS, Extent of usage of POS and Extent of usage EFT are shown in table 4.18 above. There was a weak and positive correlation between effect of I.T innovations on total income and extent of usage of ATM which was not statistically significant, ( $r = .163$ ). In addition, there was a weak positive correlation between effect on I.T innovations on total income and extent of usage of Internet banking which was not statistically significant ( $r=.158$ ). The relationship between effect of I.T innovations on total income and extent of usage of credit cards was very weak, negative and statistically non-significant, ( $r = -.092$ ). This is an indication that usage of ATM, IB and RTGS contribute positively to the total income of the bank although their effect is not significant. The relationship between effect of I.T innovations on total income and extent of usage of POS ( $r= .278$ ,  $p\text{-value}<0.01$ ) was moderate and statistically significant. Similarly the relationship between effects of I.T innovations on total income and extent of usage of EFT ( $r=.351$ ,  $p\text{-value}<0.01$ ) was also moderate and statistically significant. This is an indication that usage of POS and EFT contributes significantly to the total income of the bank. Furthermore, the relationship between the extent of usage of ATM and Extent of usage of IB is positive and statistically significant ( $r= .417$ ,  $p\text{-value}<0.01$ ).

#### **4.8.2 Relationship between I.T Innovations and Return on Assets**

The study sought to establish whether there were significant relationships between the effect of bank I.T Innovations on ROA and Extent of usage of ATM, Extent of usage of Internet

banking, Extent of usage of Credit Cards, Extent of usage of RTGS, Extent of usage of POS and Extent of usage EFT.

**Table 4.7 Pearson Product-Moment Correlations between the effect of bank I.T Innovations on ROA and Extent of usage of ATM, Extent of usage of Internet banking, Extent of usage of Credit Cards, Extent of usage of RTGS, Extent of usage of POS and Extent of usage EFT**

Variables	1	2	3	4	5	6	7
1. Effect of I.T Innovations on ROA	1	.177	.026	-.077	-.007	.138	.055
2. Extent of usage of ATM		1	.417**	.398**	-.057	.068	-.042
3. Extent of usage of IB			1	.299**	-.009	.193	-.071
4. Extent of usage of Credit Cards				1	-.217*	-.015	-.017
5. Extent of usage of RTGS					1	.554**	.027
6. Extent of usage of POS						1	-.025
7. Extent of usage of EFT							1

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

\* . Correlation is significant at the 0.05 level (2-tailed).

Results of correlation analysis between the effect of bank I.T Innovations on Total Income and Extent of usage of ATM, Extent of usage of Internet banking, Extent of usage of Credit Cards, Extent of usage of RTGS, Extent of usage of POS and Extent of usage EFT are shown in table 4.10 above. There was a weak and positive correlation between effect of I.T innovations on total income and extent of usage of ATM which was not statistically significant, ( $r = .163$ ). In addition, there was a weak positive correlation between effect on I.T innovations on total income and extent of usage of Internet banking which was not statistically significant ( $r=.158$ ). The relationship between effect of I.T innovations on total income and extent of usage of credit cards was very weak, negative and statistically non-significant, ( $r = -.092$ ). This is an indication that usage of ATM, IB and RTGS contribute positively to the total income of the bank although their effect is not significant. The relationship between effect of I.T innovations on total income and extent of usage of POS ( $r= .278$ ,  $p\text{-value}<0.01$ ) was moderate and statistically significant.

Similarly the relationship between effects of I.T innovations on total income and extent of usage of EFT ( $r=.351$ ,  $p\text{-value}<0.01$ ) was also moderate and statistically significant. This is an indication that usage of POS and EFT contributes significantly to the total income of the bank. Furthermore, the relationship between the extent of usage of ATM and Extent of usage of IB is positive and statistically significant ( $r= .417$ ,  $p\text{-value}<0.01$ ).

### 4.8.3 Relationship between I.T Innovations and Customer Deposits

Results of correlation analysis between the effect of bank I.T Innovations on customer deposits and Extent of usage of ATM, Extent of usage of Internet banking, Extent of usage of Credit Cards, Extent of usage of RTGS, Extent of usage of POS and Extent of usage EFT are shown in table 4.12 below.

**Table 4.8 Pearson Product-Moment Correlations between the effect of bank I.T Innovations on Customer Deposits and Extent of usage of ATM, Extent of usage of Internet banking, Extent of usage of Credit Cards, Extent of usage of RTGS, Extent of usage of POS and Extent of usage EFT**

Variables	1	2	3	4	5	6	7
1. Effect of Bank I.T Innovations (EFT) on Customer Deposits	1	.053	-.013	.044	.119	.135	-.266**
2. Extent of usage of ATM		1	.417**	.398**	-.057	.068	-.042
3. Extent of usage of IB			1	.299**	-.009	.193	-.071
4. Extent of usage of Credit Cards				1	-.217*	-.015	-.017
5. Extent of usage RTGS					1	.554**	.027
6. Extent of usage of POS						1	-.025
7. Extent of usage of EFT							1

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

\* . Correlation is significant at the 0.05 level (2-tailed).

Results of correlation analysis between the effect of bank I.T Innovations on Customer deposits and Extent of usage of ATM, Extent of usage of Internet banking, Extent of usage of Credit Cards, Extent of usage of RTGS, Extent of usage of POS and Extent of usage EFT are shown in table 4.8 above. There was a weak and positive correlation between effect of I.T innovations

on customer deposits and extent of usage of ATM which was not statistically significant, ( $r = .053$ ). In addition, there was a weak negative correlation between effect on I.T innovations on customer deposits and extent of usage of Internet banking which was not statistically significant ( $r = -.013$ ). The relationship between effect of I.T innovations on customer deposits and extent of usage of credit cards was very weak, positive and statistically non-significant, ( $r = .044$ ). This is an indication that usage of ATM, Cards, RTGS and POS contribute positively to the customer deposits of the bank although their effect is not significant. The relationship between effect of I.T innovations on customer deposits and extent of usage of EFT ( $r = -.266$ ,  $p\text{-value} < 0.01$ ) was weak and statistically significant. This is an indication that usage of EFT contributes significantly to the customer deposits of the bank.

#### **4.9 Exploring the Relationship between I.T Innovations and Financial Performance.**

##### **4.9.1 Exploring the Relationship between I.T Innovations and Profitability.**

Multiple regression analysis was used to explore the relationship between profitability and I.T innovations. The study was based on the premise that there is a relationship between I.T Innovations and Bank Profitability (dependent variable) and Extent of usage of Electronic funds transfer (EFT), Extent of usage of Credit Cards, Extent of usage of Point of Sale (POS) terminal, Extent of usage of Internet Banking, Extent of usage of Automated teller machine (ATM), Extent of usage of Real time gross settlement (RTGS). Regression analysis was used to explore the relationship.

**Table 4.9: Regression Model Summary output (dependent variable: Bank Profitability)**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.296 <sup>a</sup>	.088	.029	.294

a. Predictors: (Constant), Extent of usage of Electronic funds transfer (EFT), Extent of usage of Credit Cards, Extent of usage of Point of Sale (POS) terminal, Extent of usage of Internet Banking, Extent of usage of Automated teller machine (ATM), Extent of usage of Real time gross settlement (RTGS)

The regression model produced  $R^2 = .088$ ,  $F(6, 93) = 1.488$ ,  $p=0.191$ . R-square ( $R^2$ ) is .088 which suggests that the independent variables account for 8.8% of the variance in bank profitability. The correlation coefficient (R) 0.296 is an indication that there is a positive and moderate though not significant relationship between effect on I.T innovations on bank profitability and extent of usage of various I.T innovations.

The ANOVA table (Table 4.10) below provides the results of a test of significance for R and  $R^2$  using the F-statistic. In this analysis, the p-value is greater than 0.05 ( $p>0.05$ ) and therefore we conclude that R and  $R^2$  between Effect of I.T Innovations on Bank profitability and extent of usage of various I.T innovations is not statistically significant.

**Table 4.10: Linear Regression ANOVA output (dependent variable: Effect of I.T Innovations on Bank profitability)**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	.771	6	.129	1.488	.191 <sup>b</sup>
Residual	8.031	93	.086		
Total	8.802	99			

a. Dependent Variable: Effect of I.T Innovations on Bank Profitability

b. Predictors: (Constant), Extent of usage of Electronic funds transfer (EFT), Extent of usage of Credit Cards, Extent of usage of Point of Sale (POS) terminal, Extent of usage of Internet Banking, Extent of usage of Automated teller machine (ATM), Extent of usage of Real time gross settlement (RTGS)

The table below (Table 4.11) provides information about model regression coefficients, useful for understanding the regression equation. Under the column marked unstandardized coefficients, the numerical value of the first row labelled (constant) is the value of the intercept ( $\alpha$ ) in the regression equation. Based on this results, Extent of usage of Credit cards had a positive and statistically significant relationship with Effect of I.T innovations on Bank profitability ( $\beta = .340$ ,  $t = 2.033$ ,  $p=.045$ ) as shown in table 4.23 below. The fact that the regression coefficient is positive means that increase in the usage of credit cards corresponds to increase in bank profitability.

**Table 4.11: Model Regression Coefficients**

Model	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
(Constant)	4.094	.876	4.672	.000
Extent of usage of ATM	-.093	.143	-.649	.518
Extent of usage of Internet Banking	-.050	.038	-1.326	.188
Extent of usage of Credit Cards	.340	.167	2.033	.045
Extent of usage of RTGS	.103	.085	1.208	.230
Extent of usage of POS	-.076	.092	-.822	.413
Extent of usage of EFT	-.204	.122	-1.669	.098

a. Dependent Variable: Effect of I.T Innovations on Bank Profitability

$$\text{Bank profitability} = 4.094 - 0.093\text{ATM} - 0.050\text{IB} + 0.340\text{Cards} + 0.103\text{RTGS} - 0.076\text{POS} - 0.204\text{EFT} + e$$

For every unit increase in the extent of usage of ATM, Bank profitability increase by 0.093

For every unit increase in the extent of usage of IB, Bank profitability increase by 0.050

For every unit increase in the extent of usage of Cards, Bank profitability increase by 0.34

For every unit increase in the extent of usage of RTGS, Bank profitability increase by 0.103

For every unit increase in the extent of usage of POS, Bank profitability increase by 0.076

For every unit increase in the extent of usage of EFT, Total Income increase by 0.204

#### 4.9.2 Exploring the Relationship between I.T Innovations and Return on Assets

**Table 4.12: Regression Model Summary output (dependent variable: Return on Assets)**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.307 <sup>a</sup>	.094	.036	.174



a. Predictors: (Constant), Extent of usage of Electronic funds transfer (EFT), Extent of usage of Credit Cards, Extent of usage of Point of Sale (POS) terminal, Extent of usage of Internet Banking, Extent of usage of Automated teller machine (ATM), Extent of usage of Real time gross settlement (RTGS)

The regression model produced  $R^2 = .307$ ,  $F(6, 93) = 1.609$ ,  $p=0.153$ . R-square ( $R^2$ ) is .307 which suggests that the independent variables account for 30.7% of the variance in bank return on assets. The correlation coefficient (R) 0.307 is an indication that there is a positive and moderate though not significant relationship between effect on I.T innovations on bank return on assets and extent of usage of various I.T innovations.

The ANOVA table (Table 4.13) below provides the results of a test of significance for R and  $R^2$  using the F-statistic. In this analysis, the p-value is greater than 0.05 ( $p>0.05$ ) and therefore we conclude that R and  $R^2$  between Effect of I.T Innovations on return on assets and extent of usage of various I.T innovations is not statistically significant.

**Table 4.13: Linear Regression ANOVA output (dependent variable: Effect of I.T Innovations on Return on Assets)**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	.292	6	.049	1.609	.153 <sup>b</sup>
Residual	2.815	93	.030		
Total	3.107	99			

a. Dependent Variable: Effect of I.T Innovations on Return on Assets

b. Predictors: (Constant), Extent of usage of Electronic funds transfer (EFT), Extent of usage of Credit Cards, Extent of usage of Point of Sale (POS) terminal, Extent of usage of Internet Banking, Extent of usage of Automated teller machine (ATM), Extent of usage of Real time gross settlement (RTGS)

The table below (Table 4.14) provides information about model regression coefficients, useful for understanding the regression equation. Under the column marked unstandardized coefficients, the numerical value of the first row labelled (constant) is the value of the intercept ( $\alpha$ ) in the regression equation. Based on this results, Extent of usage of ATMS had a positive and statistically significant relationship with Effect of I.T innovations on return on assets ( $\beta =$

.192, t = 2.261, p=.026) as shown in table 4.26 below. The fact that the regression coefficient is positive means that increase in the usage of ATMs corresponds to increase in bank return on assets.

**Table 4.14: Model Regression Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.449	.519		6.647	.000
	Extent of usage of Automated teller machine (ATM)	.192	.085	.259	2.261	.026
	Extent of usage of Internet Banking	-.013	.023	-.063	-.564	.574
	Extent of usage of Debit and Credit Cards	-.169	.099	-.191	-1.706	.091
	Extent of usage of Real time gross settlement (RTGS)	-.064	.050	-.157	-1.278	.204
	Extent of usage of Point of Sale (POS) terminal	.097	.055	.219	1.788	.077
	Extent of usage of Electronic funds transfer (EFT)	.050	.072	.068	.688	.493

a. Dependent Variable: Effect of I.T Innovations on Return on Assets

Recalling the prediction equation Bank Profitability =  $\alpha + \beta_1X_1 + \dots + e$ , the values for the regression weights are as follows:

$$ROA = 3.449 + 0.192ATM - 0.013IB - 0.169Cards - 0.064RTGS + 0.097POS + 0.050EFT + e$$

NB: X represents regression coefficients.

For every unit increase in the extent of usage of ATM, ROA increase by 0.192

For every unit increase in the extent of usage of IB, ROA increase by 0.0131

For every unit increase in the extent of usage of Cards, ROA increase by 0.169

For every unit increase in the extent of usage of RTGS, ROA increase by 0.064

For every unit increase in the extent of usage of POS, ROA increase by 0.097

For every unit increase in the extent of usage of EFT, Total Income increase by 0.050

### 4.9.3 Exploring the Relationship between I.T Innovations and Total Income

**Table 4.15: Regression Model Summary output (dependent variable: Total Income)Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.517 <sup>a</sup>	.267	.220	.353

- a. Predictors: (Constant), Extent of usage of Electronic funds transfer (EFT), Extent of usage of Credit Cards, Extent of usage of Point of Sale (POS) terminal, Extent of usage of Internet Banking, Extent of usage of Automated teller machine (ATM), Extent of usage of Real time gross settlement (RTGS)

The regression model produced  $R^2 = .0267$ ,  $F(6, 93) = 1.488$ ,  $p=0.00$ . R-square ( $R^2$ ) is .0267 which suggests that the independent variables account for 26.7% of the variance in bank total income. The correlation coefficient (R) 0.517 is an indication that there is a positive and moderate though not significant relationship between effect on I.T innovations on bank total income and extent of usage of various I.T innovations.

The ANOVA table (Table 4.16) below provides the results of a test of significance for R and  $R^2$  using the F-statistic. In this analysis, the p-value is greater than 0.05 ( $p>0.05$ ) and therefore we conclude that R and  $R^2$  between Effect of I.T Innovations on Bank

**Table 4.16: Linear Regression ANOVA output (dependent variable: Effect of I.T Innovations on Total Income)**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	4.234	6	.706	5.647	.000 <sup>b</sup>
Residual	11.621	93	.125		
Total	15.855	99			

- a. Dependent Variable: Effect of I.T Innovations on Total Income  
 b. Predictors: (Constant), Extent of usage of Electronic funds transfer (EFT), Extent of usage of Credit Cards, Extent of usage of Point of Sale (POS) terminal, Extent of usage of Internet Banking, Extent of usage of Automated teller machine (ATM), Extent of usage of Real time gross settlement (RTGS)

**Table 4.17: Model Regression Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.562	1.054		.533	.595
Extent of usage of Automated teller machine (ATM)	.320	.173	.191	1.853	.067
Extent of usage of Internet Banking	.051	.046	.113	1.112	.269
Extent of usage of Credit Cards	-.395	.201	-.198	-1.963	.053
Extent of usage of Real time gross settlement (RTGS)	-.029	.102	-.031	-.279	.781
Extent of usage of Point of Sale (POS) terminal	.269	.111	.267	2.425	.017
Extent of usage of Electronic funds transfer (EFT)	.613	.147	.372	4.172	.000

a. Dependent Variable: Effect of I.T Innovations on Total Income

The table above (Table 4.17) provides information about model regression coefficients, useful for understanding the regression equation. Under the column marked unstandardized coefficients, the numerical value of the first row labelled (constant) is the value of the intercept ( $\alpha$ ) in the regression equation. Based on this results, Extent of usage of POS had a positive and statistically significant relationship with Effect of I.T innovations on total income ( $\beta = .269$ ,  $t = 2.425$ ,  $p=.017$ ) as shown in table 4.29 below. The fact that the regression coefficient is positive means that increase in the usage of atms corresponds to increase in bank return on assets.

$$\text{Total Income} = 0.562 + 0.320\text{ATM} + 0.051\text{IB} - 0.395\text{Cards} - 0.29\text{RTGS} + 0.269\text{POS} + 0.613\text{EFT} + e$$

For every unit increase in the extent of usage of ATM, Total Income increase by 0.32

For every unit increase in the extent of usage of IB, Total Income increase by 0.051

For every unit increase in the extent of usage of Cards, Total Income increase by 0.395

For every unit increase in the extent of usage of RTGS, Total Income increase by 0.29

For every unit increase in the extent of usage of POS, Total Income increase by 0.269

For every unit increase in the extent of usage of EFT, Total Income increase by 0.613

#### 4.9.4 Exploring the Relationship between I.T Innovations and Customer Deposits

**Table 4.18: Regression Model Summary output (dependent variable: Customer Deposits)**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.299 <sup>a</sup>	.090	.031	.204

- a. Predictors: (Constant), Extent of usage of Electronic funds transfer (EFT), Extent of usage of Credit Cards, Extent of usage of Point of Sale (POS) terminal, Extent of usage of Internet Banking, Extent of usage of Automated teller machine (ATM), Extent of usage of Real time gross settlement (RTGS)

The regression model produced  $R^2 = .090$ ,  $F(6, 93) = 1.524$ ,  $p=0.153$ . R-square ( $R^2$ ) is .090 which suggests that the independent variables account for 90% of the variance in bank customer deposits. The correlation coefficient (R) 0.299 is an indication that there is a positive and weak though not significant relationship between effect on I.T innovations on bank customer deposits and extent of usage of various I.T innovations.

**Table 4.19: Linear Regression ANOVA output (dependent variable: Effect of I.T Innovations on Customer Deposits)**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.381	6	.063	1.524	.179 <sup>b</sup>
	Residual	3.874	93	.042		
	Total	4.254	99			

- a. Dependent Variable: Effect of I.T Innovations on Customer Deposits

- b. Predictors: (Constant), Extent of usage of Electronic funds transfer (EFT), Extent of usage of Credit Cards, Extent of usage of Point of Sale (POS) terminal, Extent of usage of Internet Banking, Extent of usage of Automated teller machine (ATM), Extent of usage of Real time gross settlement (RTGS)

The ANOVA table (Table 4.19) above provides the results of a test of significance for R and R<sup>2</sup> using the F-statistic. In this analysis, the p-value is greater than 0.05 (p>0.05) and therefore we conclude that R and R<sup>2</sup> between Effect of I.T Innovations on return on assets and extent of usage of various I.T innovations is not statistically significant

**Table 4.20: Model Regression Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3.584	.609		5.888	.000
Extent of usage of Automated teller machine (ATM)	-.036	.100	-.042	-.362	.718
Extent of usage of Internet Banking	-.048	.026	-.206	-1.826	.071
Extent of usage of Credit Cards	.223	.116	.215	1.919	.058
Extent of usage of Real time gross settlement (RTGS)	.085	.059	.176	1.432	.156
Extent of usage of Point of Sale (POS) terminal	.025	.064	.048	.395	.693
Extent of usage of Electronic funds transfer (EFT)	-.055	.085	-.065	-.654	.514

a. Dependent Variable: Effect of I.T Innovations on Customer Deposits

$$\text{Customer Deposits} = 3.584 - 0.036\text{ATM} - 0.048\text{IB} + 0.223\text{Cards} + 0.085\text{RTGS} + 0.025\text{POS} - 0.055\text{EFT} + e$$

For every unit increase in the extent of usage of ATM, customer deposits increase by 0.036

For every unit increase in the extent of usage of IB, customer deposits increase by 0.0481

For every unit increase in the extent of usage of Cards, customer deposits increase by 0.223

For every unit increase in the extent of usage of RTGS, customer deposits increase by 0.085

For every unit increase in the extent of usage of POS, customer deposits increase by 0.025

For every unit increase in the extent of usage of EFT, customer deposits increase by 0.055

## **CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Introduction**

This research examined information technology innovations and financial performance of KCB Group. The study focused on the following I.T innovations: Credit and Debit cards, POS terminals, electronic funds transfer, internet banking, ATMs and mobile banking.

### **5.2 Summary of Findings**

The discoveries of the study uncovered that the consolidated impact of I.T innovation developments affected KCB Bank group financial gains constructively. These discoveries were resounded by the reaction frequencies which were organized as mean scores and rates.

The main goal of the study was to build up I.T innovation developments utilized by Kenya Commercial Bank Group. The discoveries uncovered that KCB bank group utilizes the ATMS, I.B, Quickpay, Credit cards, Debit cards, RTGS,POS, Mobile Banking, EFT, Estatements, Ecrm.

The discoveries uncovered that I.T innovation advancements affect the income, return on assets, profitability and customer deposits of KCB Bank Group. This finding is bolstered by the assurance coefficients which demonstrates varieties in gathering's aggregate income, return on assets, profitability and customer deposits are clarified by I.T innovation advancements.

### **5.3 Conclusion**

From the discoveries of the study, it can be found that I.T innovation advancements impact money related execution of KCB Bank assemble emphatically. The reception of I.T developments by KCB Bank accumulated high capacity of improving budgetary execution and from this time forward better returns for the bank. I.T improvements has made the reception rate to be high among both the KCB banks and its customers. It could have been trying if the



allotment was just with either the social occasion or the customers. KCB Bank has continued performing extraordinarily despite the distinctive divisions of the economy demonstrate slacked execution. This can be cleared up by the usage of I.T improvements which has enabled KCB Bank group to start making pay a long way from ordinary sources like premium, trade and asset financing. KCB Bank has possessed the capacity to make more commission pay from exchanges done on I.T advancement channels like; cell phones, web, charge cards and purpose of offer terminals.

#### **5.4 Recommendations**

The Group should continue placing assets into I.T advancements transport channels since they can control their costs much better when diverged from enthusiasm for square and concrete or physical branches. The volume of trades that can be set up on channels like the web are high when appeared differently in relation to passing on such trades using manual methods. This minimizes the cost per unit of organization and thus better returns to the group.

Various stakeholders and more so I.T Professionals ought to contribute their, exertion, time and assets towards I.T developments. This will enhance the organizations income visa vie ascent that of experts if the developments get to be fruitful.

I.T Innovation has its arrangement of difficulties particularly identified with security danger which can prompt notoriety chance among banks and loss of certainty by the clients. The primary clients of bank advancements are investors. Without stores and contributors the supportability of banks would be at hazard. This subsequently requires a superior I.T developments administration structure in a way that supports contributors' certainty. Framework engineers in this way need to make upgraded and successful security frameworks which can identify, control, counteract and oversee misrepresentation occurrences on the different development channels. This proposal is gotten from the developing risk of framework interruption by programmers which can dissolve the wanted increases of bank advancements.

The government ought to give motivators to innovative work to research researchers who might keep on investing their time and abilities in finding more I.T advancements. The administration ought to give motivators to innovation from various economies.

### **5.5 Limitations of the study**

Because of time and asset imperatives the concentrate just assessed advancements in the banking industry and subsequently did exclude other monetary division players, for example, annuity subsidizes, the stock trade, small scale back foundations, protection. However this gives a chance to further research.

There was additionally an underlying moderate reaction from the respondents griping about the many questions asked in the survey. Hence numerous checks and following up with the respondent had to be done together with telephone calls.

The time offered for this research was somehow not sufficient. More details could have been gotten if there was more time. This would have even allowed for one on one interviews with the top level management to go to the details of the study

### **5.6 Research Areas**

Other I.T innovations within KCB Bank group were exclude for example, securitization, office saving money, and their impact on the budgetary execution. A deeper study should be possible to disentangle whether I.T innovation developments prompts enhanced KCB Bank Group's monetary performance.

A similar research can be done for other banks to fully ascertain the role of I.T innovations in banks. This is mainly because this studied only focused on KCB as a group and not other banks.

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## APPENDICES

### Appendix I: Questionnaire

The questions below are to collect data on *Information technology innovations and performance of KCB bank Group. Kindly assist in this process by feeling in the data.*

#### **SECTION 1: Personal Information**

##### **1: Bank Particulars**

Name of the Branch or Unit (Optional) .....

##### **2: Respondent Particulars**

Gender: Male  Female

##### **Age Bracket (tick as appropriate)**

No	Age Bracket	Tick as Appropriate
i.	10-20	
ii.	21-30	
iii.	31-40	
iv.	41-50	
v.	Over 50	

##### **Department (tick as appropriate)**

No	Department	Tick as Appropriate
i.	Executive	
ii.	Finance	
iii.	ICT	
iv.	Audit	
v.	Credit	
vi.	Logistics	
vii.	HR	
viii.	Others	

##### **How long have you worked in the Banking Sector (tick as appropriate)**

No	Period	Tick as Appropriate
i.	Less than 1 yr	
ii.	Btw 1-5 yrs	
iii.	Btw 5-10 yrs	
iv.	Over 10 yrs	

**SECTION B: EXTENT OF USAGE OF INFORMATION TECHNOLOGY INNOVATIONS AT KCB BANK GROUP.**

Please rate the extent of usage of the following Information Technology Innovations at KCB Bank Group to enhance financial performance. Please answer honestly. Remember this information will be used ONLY for Academic research

<b>Information technology innovations</b>		<b>Never (1)</b>	<b>Rarely (2)</b>	<b>Sometimes (3)</b>	<b>Often (4)</b>	<b>All the time (5)</b>
1.	Automated teller machine (ATM)					
2.	Internet banking					
3.	Credit card					
4.	Debit card					
5.	Real time gross settlement (RTGS)					
6.	Point of sale (POS) terminal					
7.	Mobile banking					
8.	Electronic funds transfer					
9.	List(Any other)					

**SECTION C: IMPACT OF INFORMATION TECHNOLOGY INNOVATIONS ON KCB BANK GROUP TOTAL INCOME**

Kindly put a mark such as (√) or (x) on the relevant question that reflects your view.

<b>No</b>	<b>Statement</b>	<b>Strongly disagree</b>	<b>Strongly disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>ATM-Automated Teller Machines</b>						
1	Automated Teller Machines has added a constructive outcome to KCB Bank group expense earnings					
2	Automated Teller Machines has impacted emphatically the expansion of expense based earnings					
3	Credit and debit cards has extended the earnings capability of KCB Bank group					

<b>Credit and Debit Cards</b>						
4	Credit and debit cards has added a constructive outcome to KCB Bank group expense earnings					
5	Credit and debit cards has impacted emphatically the expansion of expense based earnings					
6	Credit and debit cards has extended the earnings capability of KCB Bank group					
<b>POS-Point of Sale Terminals</b>						
7	POS has added a constructive outcome to KCB Bank group expense earnings					
<b>No</b>	<b>Statement</b>	<b>Strongly disagree</b>	<b>Strongly disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
8	POS has impacted emphatically the expansion of expense based earnings					
9	POS has extended the earnings capability of KCB Bank group					
<b>Mobile Banking</b>						
10	Mobile Banking has added a constructive outcome to KCB Bank group expense earnings					
11	Mobile Banking has impacted emphatically					

	the expansion of expense based earnings					
<b>12</b>	Mobile Banking has extended the earnings capability of KCB Bank group					
<b>I.B-Internet Banking</b>						
<b>13</b>	I.B has added a constructive outcome to KCB Bank group expense earnings					
<b>14</b>	I.B has impacted emphatically the expansion of expense based earnings					
<b>15</b>	I.B has extended the earnings capability of KCB Bank group					
<b>No</b>	<b>Statement</b>	<b>Strongly disagree</b>	<b>Strongly disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>EFT-Electronic Funds Transfer</b>						
<b>16</b>	EFT has added a constructive outcome to KCB Bank group expense earnings					
<b>17</b>	EFT has impacted emphatically the expansion of expense based earnings					
<b>18</b>	EFT has extended the earnings capability of KCB Bank group					



**SECTION D: IMPACT OF INFORMATION TECHNOLOGY INNOVATIONS ON KCB BANK GROUP RETURN ON ASSETS**

Kindly put a mark such as (√) or (x) on the relevant question that reflects your view.

No	Statement	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
		1	2	3	4	5
<b>ATM -Automated Teller Machines</b>						
1	Automated Teller Machines impact lessening of support expenses hence improved profit for KCB Bank group resources					
2	Automated Teller Machines ventures has a consequently great profit for resources					
3	Earnings from Automated Teller Machines has a positive effect on KCB Bank ROA levels					
<b>Debit &amp; Credit Cards</b>						
4	Credit & Debit cards impact lessening of support expenses hence improved profit for KCB Bank group resources					
5	Credit & Debit cards ventures has a consequently great profit for resources					

<b>6</b>	Earnings from Credit & Debit cards has a positive effect on KCB Bank ROA levels					
<b>No</b>	<b>Statement</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>POS-Point of Sale Terminals</b>						
<b>7</b>	POS impact lessening of support expenses hence improved profit for KCB Bank group resources					
<b>8</b>	POS ventures has a consequently great profit for resources					
<b>9</b>	Earnings from POS has a positive effect on KCB Bank ROA levels					
<b>Mobile Banking</b>						
<b>10</b>	Mobile Banking impact lessening of support expenses hence improved profit for KCB Bank group resources					
<b>11</b>	Mobile Banking ventures has a consequently great profit for resources					
<b>12</b>	Earnings from Mobile Banking has a positive effect on KCB Bank ROA levels					
<b>I.B-Internet Banking</b>						
<b>13</b>	I.B impact lessening of support expenses hence					

	improved profit for KCB Bank group resources					
<b>14</b>	I.B ventures has a consequently great profit for resources					
<b>No</b>	<b>Statement</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>15</b>	Earnings from I.B has a positive effect on KCB Bank ROA levels					
<b>EFT-Electronic Funds Transfer</b>						
<b>16</b>	EFT impact lessening of support expenses hence improved profit for KCB Bank group resources					
<b>17</b>	EFT ventures has a consequently great profit for resources					
<b>18</b>	Earnings from EFT has a positive effect on KCB Bank ROA levels					

**SECTION E: IMPACT OF INFORMATION TECHNOLOGY INNOVATIONS ON KCB BANK GROUP PROFITABILITY**

Kindly put a mark such as (√) or (x) on the relevant question that reflects your view.

<b>No</b>	<b>Statement</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Automated Teller Machines (ATMs)</b>						
<b>1</b>	Earnings from Automated Teller Machines has a much better edge leading to improved KCB Bank yearly benefit					
<b>No</b>	<b>Statement</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

<b>2</b>	Automated Teller Machines has low support costs translating to better returns to KCB Bank group					
<b>3</b>	Ventures based on Automated Teller Machines are driven by benefits to the KCB Bank group					
<b>Credit &amp; Debit Cards</b>						
<b>4</b>	Earnings from Credit & Debit Cards has a much better edge leading to improved KCB Bank yearly benefit					
<b>5</b>	Credit & Debit Cards has low support costs translating to better returns to KCB Bank group					
<b>6</b>	Ventures based on Credit & Debit Cards are driven by benefits to the KCB Bank group					
<b>POS-Point of Sale Terminals</b>						
<b>7</b>	Earnings from POS has a much better edge leading to improved KCB Bank yearly benefit					
<b>8</b>	POS has low support costs translating to better returns to KCB Bank group					
<b>9</b>	Ventures based on POS are driven by benefits to the KCB Bank group					
<b>No</b>	<b>Statement</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Mobile Banking</b>						
<b>10</b>	Earnings from Mobile banking has a much better					

	edge leading to improved KCB Bank yearly benefit					
<b>11</b>	Mobile Banking has low support costs translating to better returns to KCB Bank group					
<b>12</b>	Ventures based on Mobile Banking are driven by benefits to the KCB Bank group					
<b>I.B-Internet Banking</b>						
<b>13</b>	Earnings from I.B has a much better edge leading to improved KCB Bank yearly benefit					
<b>14</b>	I.B has low support costs translating to better returns to KCB Bank group					
<b>15</b>	Ventures based on I.B are driven by benefits to the KCB Bank group					
<b>EFT-Electronic Funds Transfer</b>						
<b>16</b>	Earnings from EFT has a much better edge leading to improved KCB Bank yearly benefit					
<b>No</b>	<b>Statement</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>17</b>	EFT has low support costs translating to better returns to KCB Bank group					
<b>18</b>	Ventures based on EFT are driven by benefits to the KCB Bank group					

**SECTION F: IMPACT OF INFORMATION TECHNOLOGY INNOVATIONS ON KCB BANK GROUP CUSTOMER DEPOSITS**

Kindly put a mark such as (√) or (x) on the relevant question that reflects your view.

<b>No</b>	<b>Statement</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neither agree</b>	<b>Agree</b>	<b>Strongly agree</b>
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				<b>nor disagree</b>		
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Automated Teller Machines (ATMs)</b>						
<b>1</b>	Automated Teller Machines administration has pulled in many customers for KCB Bank Group					
<b>2</b>	Automated Teller Machines has made it easier for clients to access and transfer funds from various KCB Bank					
<b>3</b>	Automated Teller Machines has pulled in more corporate clients and deposits for KCB Bank group					
<b>Debit &amp; Credit Cards</b>						
<b>4</b>	Credit and debit Cards administration has pulled in many customers for KCB Bank Group					
<b>No</b>	<b>Statement</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>5</b>	Credit and Debit card has made it easier for clients to access and transfer funds from various KCB Bank					
<b>6</b>	Credit and Debit Cards POS has pulled in more corporate clients and deposits for KCB Bank group					
<b>POS-Point Of Sale Terminals</b>						
<b>7</b>	POS administration has pulled in many customers for KCB Bank Group					

<b>8</b>	POS has made it easier for clients to access and transfer funds from various KCB Bank					
<b>9</b>	POS has pulled in more corporate clients and deposits for KCB Bank group					
<b>Mobile Banking</b>						
<b>10</b>	Mobile Banking administration has pulled in many customers for KCB Bank Group					
<b>11</b>	Mobile banking has made it easier for clients to access and transfer funds from various KCB Bank					
<b>12</b>	Mobile banking has pulled in more corporate clients and deposits for KCB Bank group					
<b>I.B-Internet Banking</b>						
<b>13</b>	I.B administration has pulled in many customers for KCB Bank Group					
<b>14</b>	I.B has made it easier for clients to access and transfer funds from various KCB Bank accounts					
<b>No</b>	<b>Statement</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>15</b>	I.B has pulled in more corporate clients and deposits for KCB Bank group					
<b>EFT-Electronic Funds Transfer</b>						
<b>16</b>	EFT administration has pulled many customers for KCB Bank Group					
<b>17</b>	EFT has made it easier for clients to access and transfer funds from various KCB Bank accounts					

<b>18</b>	EFT has pulled in more corporate clients and deposits for KCB Bank group					
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**Thanks for your response.**