

**EFFECTS OF INFORMATION COMMUNICATION TECHNOLOGY  
ADOPTION ON FINANCIAL PERFORMANCE OF FINANCIAL  
INSTITUTIONS IN KENYA**

**BY**

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## **DECLARATION**

This research project is my original work and has not been presented in any other University.

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## **DEDICATION**

This work is dedicated to the almighty God for the wisdom and gift of life that has made me realize and see the conclusion of this research and to those who helped me carry out this research.

## **ACKNOWLEDGEMENT**

I am sincerely grateful to God for the gift of serenity throughout my studies from the beginning of the course to its completion.

To my academic Supervisor, Dr. Josephat Lishenga for his great contribution and support offered that enabled this research project to take its present form, without his guidance and persistent help, this research would not have been successfully completed.

I must admit humbly that the success of this research has been largely due to collaborative efforts and devotion of many people to who I owe a lot of gratitude.

Thank you to you all.

## **ABSTRACT**

Highly dynamic operational environment among financial institutions has called on them to continuously think of ways of improving the efficiency and effectiveness in their operations for optimal financial performance results. Adoption of ICT has been used as one of the strategies to help financial institutions improve performance. This study sought to determine the effects of information communication technology adoption on financial performance of financial institutions in Kenya. This study adopted a descriptive research design and the population of study consisted of all the 258 financial institutions in Kenya as at 2015. Simple random sampling technique was applied to select a sample size of 78 financial institutions. The study applied primary data using questionnaires and secondary data collected from the respective institution' financial statements and summaries at the Central bank of Kenya. Editing, coding, classifying and tabulation are the processing steps that was used to process data for better and efficient analysis. The study also revealed that adoption of internet banking had improved cost efficiency in the institutions, improved customer relationship management in the bank, improved customer convenience and reduced the institutions operating expenses. Adoption of ATM technology had improved cost efficiency in the institutions, improved fraud risk management in the bank and improved new customer enrolment in the institutions. The study concludes that majority of the financial institutions in Kenya have invested their resources in new products and technology innovations such as mobile banking, electronic funds transfer, internet banking and automated teller machines. These aspects of ICT have helped the institutions in carrying out business activities more effectively and efficiently and through information technology has emerged as a strategic resource for achieving higher efficiency, control of operations and reduction of cost by replacing paper based and labour intensive methods with automated processes thus leading to higher productivity and profitability. The study recommends that financial institutions should integrate the use of internet for exploring and finding new customers, enhancing speedy of communication, developing new products, collecting and managing information, generating a wide range of product ideas from a wider range of sources, access documents and share technical information.

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## **LIST OF ABBREVIATIONS & ACRONYMS**

<b>TAM</b>	Technology Acceptance Model
<b>UTAUT</b>	Unified Theory of Acceptance and Use of Technology
<b>ICT</b>	Information and Communication Technology
<b>ATM</b>	Automated Teller Machines
<b>EPS</b>	Earnings per share
<b>CBK</b>	Central Bank of Kenya
<b>SPSS</b>	Statistical Package for Social Sciences

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the study

Developments in information communication technology has improved the operational efficiency of many organizations and revolutionized the way they conduct their businesses. Many organizations have adopted ICT in their operations with the aim of reducing operating costs and improving overall organization performance through excellent service deliver. This has provided organizations a decent chance to produce new business models and procedures in service delivery (Henderson, McGoldrick & McAdam, 2003).

The study was guided by four theories including: Technology Diffusion; Technology Acceptance Model (TAM); financial intermediation theory and the Unified Theory of Acceptance and use of Technology. Technology Diffusion theory sought to explain how technology diffuses in an organizational setting and its impact on operational efficiency and overall bank performance. The TAM sought to bring out the stages through which customers and employees accept new technologies that influence organizational performance. Financial intermediation theory explained the key role of commercial banks in an economy which is basically mediating between surplus and deficit households. The Unified Theory of Acceptance and Use of Technology (UTAUT) is a school of thought that explains how individuals go about accepting new technology.

The banking industry in Kenya has witnessed a challenging time as technology keeps advancing from time to time. Many banks have adopted different technologies including; Automated Teller Machines (ATM), plastic cards, mobile banking, internet banking among others to leverage on the advancements in ICT. However, this has

also brought about a number of challenges that served to reduce the gains made from ICT adoption. For instance, a number of commercial banks experienced a slow service delivery following ICT challenges during implementation which led to frequent down times. In other incidences, some other banks lost huge amounts of money through skimming of ATM cards which led to the industry switching to chip cards from magnetic ink. All these have had varying of the financial performance of the banking industry in general.

### **1.1.1 Information Communication Technology**

Information and Communication Technology (ICT) is the computerization of procedures, controls and data generation utilizing computers, television and other electronic devices to guarantee smooth and productive running of operations (Adeoti, 2005). Commercial banks have been using ICT since the invention of computers in the early 1980's. In the early stages, the benefits of ICT to financial institutions were limited as the technology was very expensive and not easily accessible. Advancements in ICT have seen a number of financial institutions adopt it in their operations.

The advancement in ICT has broadened the scope of business models creation and changed the understanding and application of distribution channels of monetary system leading to a decrease in the exchange costs and enhancement of accessibility to clients. This has seen greater adoption of ICT among financial institutions for the purposes of transaction processing. Some of the activities automated through ICT include customer enquiries, automated teller services, telephone banking, internet banking, mobile banking among others. Investments in ICT in the financial sector enable increased efficiency and accessibility to information this improves

coordination of activities within the organizational boundaries. ICT investment in the banking sector is measured according to the ICT product. ATM is one of the ICT product in the banking sector that is allows the customers to deposit cash and make withdrawals outside the banking hall (Wisniewski, 2008). ATM transactions are measured using the number of transactions per day divided by the total number of transactions per year.

### **1.1.2 Financial Performance**

Overall organization results measurement however economical a company has used the assets from its primary mode of business to get revenue. It represents the accomplishment of a given task that's measured using predetermined standards of accuracy, completeness, efficiency and effectiveness (Hicks & Niehans, 1998). It indicated associate organization's overall financial results over a given period of time that can be compared to similar companies across identical sectors in general.

Financial performance is measured using numerous financial measures like income raised from the operating activities, earnings raised prior to deduction of interest and making provisions for taxes, and net asset value Profit after Tax, Return on total Assets owned by an organization and Return on investment by shareholders among others. Return on shareholders' investment in an organization indicates the proficiency with which the management have used the resources entrusted in them by the shareholders in generating wealth. Return on total assets owned by expresses the net income attained by an organization as a proportion of the full asset to be used by that company. Return on Assets measures management's ability to get returns from the firm's resources (Liang & Lu, 2010). Through financial ratios, it is possible to standardize the performance of organizations across an industry (Ahmad et al., 2011).

### **1.1.3 Relationship between Information communication Technology and Financial performance**

Information and communication technology adoption improves the efficiency and effectiveness in the organization in serving clients. It reduces the costs of operations besides allowing access to customers outside the branch network of a financial institution. This improves efficiency and increases sales and hence financial performance (Gerrard & Cunningham, 2003).

Internet banking for example provides customers with access to their bank accounts through their online website to access and transact as though they were in a physical branch. The rate of adoption is high whenever customers know that their transactions are secure and that their security is not compromised. , Application of ICT has helped financial institutions in minimizing their operational costs thereby leading to improved overall financial results. This is especially realized because the ICT investment costs are capitalized and amortised over the useful life as per the institution's policies (Dabholkar & Bagozzi, 2002).

### **1.1.4 Financial Institutions in Kenya**

Kenya's economic system contains varied commercial banks, non-bank financial establishments, a spread of insurance companies and a securities market. The Kenyan financial system is regulated by the Central Bank of Kenya Act, Banking Act, the Companies Act among other guidelines issued by the Central Bank of Kenya (CBK) (CBK, 2015). As at end of December 2015, the financial sector comprised of 43 commercial banks, 49 insurance companies, 52 micro-finance establishments and 116 Forex Bureaus at the end of December 2015. The Insurance business contains 47

insurance firms accredited and in operation in Kenya as at December 2015 (IRA, 2015).

## **1.2 Research Problem**

Highly dynamic operational environment among financial institutions has called on them to continuously think of ways of improving the efficiency and effectiveness in their operations for optimal financial performance results. Adoption of ICT has been used as one of the strategies to help financial institutions improve performance. According to Amaoko (2012), developments in ICT have greatly changed the manner in which business activities are conducted in Ghana. It was established that adoption of ICT in their operations improved overall financial performance of financial institutions by 13%.

Financial institutions in Kenya have been on the forefront in adoption of ICT as they seek to improve customer convenience, satisfaction, and competitive edge and leverage their operations. For instance, Commercial banks have adopted mobile banking technology where customers can transact on their mobile phones. They have also created an internet banking platform for online banking, entered into strategic partnership with vendors for point of sales where customers can swipe their cards among other technologies. All these have affected financial performance differently owing to the investment cost incurred and the cost savings achieved.

On international scene, Al-Adamat (2015) sought to establish how ICT implementation of ICT affected marketing of hotels and restaurants in the Jordan. It was established that the hotels adopted ICT to different scales and they positively affected service delivery and overall performance. Binuyo and Aregbeshola (2014) examined the impact of ICT implementation and application on overall financial

results of commercial bank in South Africa and established that adoption of ICT led to increased overall financial outcomes thereby positively contributing to the shareholders' wealth. Agbesi (2013) sought to find out how adoption of ICT affected the financial results of Unique Trust Bank and established that ICT led to higher customer satisfaction, repeat business and overall customer loyalty. These in turn improved financial results posted by the Bank. Basweti, Masese & Onsiro (2013) acknowledged the need for financial institutions to improve their customers knowledge and awareness on developments in ICT so as to improve their uptake. Adoption of ICT in operations led to better financial results in the financial sector in general.

Locally, Onchwari (2012) analyzed the adoption of IT and competitiveness of commercial banks in Kenya the study established that commercial bank's overall performance was influenced by information technology adoption in specifically marketing, credit, finance, ICT departments, customer relations and human resource departments. This study was conducted from a strategic management perspective whose methodology is different from the current study hence limits its application in the current case. Mwangi (2012) studied the impact of ICT development on overall financial results posted by financial institutions in Kenya.

From the above analysis of past studies, it can be seen that they have been conducted in other countries which limits their application in Kenya. For those conducted in Kenya and established that investment on ICT systems and infrastructure was a key part in productivity and growth within the banking system. This study examined growth and productivity and not financial performance hence limiting its application



in the current scenario. In addition, the study was undertaken four years ago and with the time lapse, the level of technology adoption has drastically changed.

### **1.3 Research Objective**

To determine the effects of information communication technology adoption on financial performance of financial institutions in Kenya

### **1.4 Value of the study**

The findings of this study would be important to a number of stakeholders including: the Government of Kenya in policy formulation and enforcement; future scholars and academicians and managers in financial institutions.

For the Government of Kenya especially the Ministry of Finance and the Ministry of Information, Communication and Technology, the findings would be relevant in informing future policy formulation and implementation with regard to ICT implementation among financial institutions to ensure the operations are not interrupted.

The findings of this study would also be valuable to future researchers and scholars where the study would be used as a source of empirical literature in their future studies besides getting areas for further research in that the study would suggest areas for further studies in chapter five.

The findings would also be important to managers in financial institutions in that they would learn the important role played by ICT in their reported financial performance. This would inform their future decision making on issues concerning ICT in their banks.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter outlines literature reviewed in order to provide a basis for the study and the concepts. In addition, it highlights theories, determinants of financial results among financial institutions, previous empirical studies conducted and summary of the literature review clearly showing the research gaps.

#### **2.2 Theoretical Review**

This section gives a review of various schools of thought that underlie the study area (Hurley, 2007). The specific schools of thought considered here include: Technology Diffusion theory, the Technology Acceptance Model (TAM), Financial Intermediation Theory and the Unified Theory of Acceptance and Use of Technology

##### **2.2.1 Technology Diffusion Theory**

This school of thought was developed to help explain how human beings go about adopting and using new technology in their day to day lifestyles (Sherry & Gibson, 2002). It is based on several years of experiments which led to the conclusions regarding general trends observed in new technology adoption (Dooley, 2006). Roger's diffusion of innovations thinking has been applied mostly in explaining how technology passes on from one person to another and from one generation to another. (Parisot, 2006). The theory argues that technology is comprised of two aspects which play a key role in its adoption: Hardware and software (Rogers, 2003). Therefore when considering the adopt and usage of technology, two important things to be considered is hardware that enables its usage and the hardware holding the software.

Technology diffusion theory explains how information technology skills are acquired and utilized by employees for better performance. The level of employees' knowledge and ability to use the information systems. This theory applies to the first objective which is on the influence of information technology skills on performance. ICT skills are regarded as part of the software inputs. If the employees possess adequate prerequisite skills to work with the available information system, the output in the organization would improve. This therefore means that the overall performance of the organization would improve.

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

This theory was developed by Davis (2001) to bring to the fore how human beings behave when it comes to adopting new technology. The model explains the key factors that determine the successful adoption and usage of technology: Ease of use, perceived usefulness and perceived ease of Use, security among other factors (Venkatesh, Morris, Davis, and Davis, 2003). That two freelance factors namely perceived simple of use associate degree and perceived quality have an influence on a dependent construct known as intention to use and ultimately the usage behavior. According to Selim (2003), introduction of web based financial service transactions among financial institutions helps bring about convenience and flexibility in they way customers access their accounts. This theory is relevant for this study because it explains the important role of technology is current life and how human beings go about adopting and using it.

### **2.2.3 Financial Intermediation Theory**

This theory was developed with the aim of explaining the core function of financial institutions in an economy as encompassing acting as a bridge between the surplus

households and deficit households (Kirkwood, 2009). The primary role of monetary establishment is basically seen as that of creating specialized financial goods (Cetorelli, Mandel & Mollineaux, 2012). The financial products are created when the intermediary mediates the relationship between deficit households and surplus one so as to minimize the effects of information asymmetry.

The theory was developed to explain the function of financial institutions in an economy. For there to be production, there needs to exist an organization that is willing to balance the wishes of households with surplus income and those with deficit income in a cost efficient manner (Liman, 2012). This theory ties in with the fourth objective which is on the influence of top managements' support of ICT systems and organizational performance. Top management are key in any strategy implementation. Their acceptance and ownership of the entire ICT system would enhance its implementation and thus organization performance. This theory is relevant for this study because it helps explain the role played by financial institutions in an economy which forms the context of the study.

### **2.3 Determinants of Financial Institutions Performance**

There are several factors that affect the financial performance of financial institutions. Some of these are discussed below:

#### **2.3.1 Institution Specific (Internal) factors**

These constitute the organization specific factors that influence the profitability. Such factors can be controlled by financial institution themselves so as to improve on its the overall financial results posted at the end of a given financial period. These factors vary from one institution to another. They may include: the size of total capital outlay

by the shareholders, size of money saved in the financial institutions, the distribution of credit classes in their portfolio, the policies governing the lending rates in an economy, level of Operationalization of ICT in the organization among other factors (Dang, 2011).

### **2.3.2 Adoption of ICT**

Information and Communications Technology influences the content and quality of operations thus creating value that enhances financial performance for the banks and customer satisfaction. ICT makes available several opportunities especially for re-engineering of financial institutions. Berger (2003) argues that in order to be successful and post optimistic financial result consistently, financial institutions can not ignore the developments in ICT. This is because of the huge benefits brought about by the adoption of ICT to organizations.

The use of ICT in the financial sector enables increased efficiency and accessibility of information this improves coordination of activities within organizational boundaries. Introduction of electronic banking and other web-based distribution enabled channels has revolutionized the way financial institutions operate (Batiz-Lazo & Wardley, 2007). Adoption of ICT has been associated with subsequent reduction of operating costs and development of more innovative ways of meeting the needs of customers (San-Jose, Ituralde & Maseda, 2009).

### **2.4 Empirical Review**

A number of studies have been conducted on the effects of ICT on overall financial results posted by organizations including financial institutions.

### **2.4.1 International Studies**

Agbesi (2013) sought to find out the effects of ICT adoption on the overall financial results reported using the case of Unique Trust Bank of Ghana. Through descriptive design, the study developed a structured instrument which was used to collect data from the target respondents. The study adopted sampling survey as the population was huge. The findings indicate that adoption of ICT led to better financial results of the Bank. The statistics indicate that following adoption of ICT, the profitability level of the Bank improved by 7 percentage points. The bank was also able to become competitive which led to improved market share.

Binuyo & Aregbeshola (2014) studied the impact of ICT implementation overall financial results of financial institutions in South Africa. The study covered a period of twenty two years with secondary data. The findings indicated that application of ICT in operations improves financial results of the concerned. This also improved the uptake of financial services for the institution and customer convenience. In another study, Basweti, Masese & Onsiro (2013) examined the challenges faced by financial institutions within the Tanzanian economy. The study employed a descriptive research design on a population of 48 bank managers based in Dar es Salaam. The study established the existence of the need to improve the financial results of the bank. ICT gadgets to ensure that the banking industry reaps optimal benefit from ICT adoption.

Safari & Yu (2014) examined the impact of ICT efficiency from the Iranian Banking industry. The study applied stochastic frontier analysis method to financial institutions over a period of sixteen years starting 1995 to 2011. The findings indicated that financial institutions listed at the trading exchange achieved average technical

efficiencies of 0.73, way lower than privately owned financial institutions that attained technical efficiencies of 0.83.

Saeed & Bampton (2013) looked at how ICT implementation by financial institutions affected the overall financial results in Lybia. The study sought to seek and demonstrate the possibility of transformation of Libyan commercial banks. The results showed that there was low level of ICT adoption among the Libyan banks which constrained the overall financial performance.

#### **2.4.2 Local Studies**

Wesutsa (2012) examined the impact of ICT adoption on overall financial results of financial institutions in Kenya. The study adopted correlation as the research design where it was established that adoption of ICT had led to improved operational efficiency and greater profitability. The use of ICT has not only increased the market share of commercial banks and gained competitive advantage. ICT has deepened the cash safety nets of banks in the prevailing markets.

Mwangi (2012) analysed how ICT development affects overall performance results of financial institutions in Kenya. The study used total return on assets owned by the institutions to bring out the benefits of ICT on overall financial results. The respondents were employees of the financial institutions with adequate years of experience and knowledge on the subjects under study. The study established that adoption and implementation ICT as part of financial institutions system improved the revenue collection and minimized operating expenses thereby leading to higher return on shareholders investments.

Onchwari (2012) assessed the impact of ICT and competitiveness of financial institutions in Kenya. The study employed a descriptive research design where it

established that financial institutions overall performance was influenced by information technology especially in marketing, credit, finance, ICT departments, customer relations and human resource department. Adoption of ICT has enhanced competitiveness as well as enabling banks to practice retail banking, automated banking and other financial services and retain customers through strengthening customer relationships

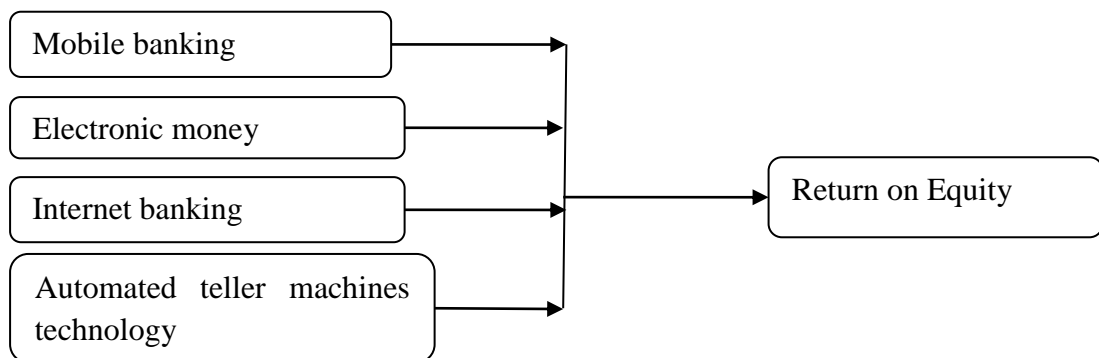
Gwako (2012) did a study on the selection of ICT on business execution utilizing an instance of little and medium endeavors in Nakuru focal business District, Kenya. The unit of investigation was the individual entrepreneurs and graphic study plan was received for the study. Likelihood examining was utilized to get respondents chosen utilizing deliberate testing technique. ICT education as a variable of appropriation had a fairly frail relationship with business execution of SMEs in Nakuru town with comparable results however in an inverse bearing saw regarding ICT framework. Utilization of ICT in business systems had an extremely frail relationship with the execution pointers while accessibility of assets for selection of ICT posted a solid level of relationship with similar indicators.

Atieno (2014) considered ICT and inventory network execution among logistics firms in Nairobi, Kenya. The study utilized an enlightening exploration outline. The populace involved roughly 1000 coordination's firms in Kenya. The study focused on 30 expansive firms working in Nairobi County on the grounds that calculated firms in Nairobi were probably going to have embraced the utilization of ICT in dealing with their inventory network forms rather than different Counties in Kenya. The 60 respondents of the study were chosen from the inventory network administration and ICT offices since they were the ones familiar with the effects of ICT on store network



execution of the logistic firms. The study found that the logistics firms received ICT in inventory network that influences production network execution essentially. Tthe inventory network execution of the logistics firms to incredible degrees among other ICT applications. The concentrate additionally inferred that the high level of many-sided quality prompts to a setting unforeseen arrangement of synergistic blends of IT and other authoritative assets, including work environment rehearses, change activities, hierarchical structure, and budgetary condition.

## 2.5 Conceptual Framework



**Figure 2.1: Conceptual Framework**

## 2.6 Summary of Literature Review

This chapter has examined the existing theoretical issues and empirical literature on ICT (Information, Communication and Technology) and its impact on the overall financial results of financial institutions' performance. The chapter examined four theories on which the study is anchored and the empirical studies. Agbesi (2013) studied how ICT application in operations affected the overall results of Unique Trust Bank of Ghana. Binuyo & Aregbeshola (2014) studied the impact of information and communication technology (ICT) on commercial bank overall financial results using South Africa financial institutions. Basweti, Masese & Onsiro (2013) examined the impact and challenges of ICT adoption in the Tanzanian banking sector.

Locally, Wesutsa (2012) examined the impact of ICT adoption on overall financial results of financial institutions in Kenya. Mwangi (2012) analysed how ICT development affects overall performance results of financial institutions in Kenya. Onchwari (2012) assessed the impact of ICT and competitiveness of financial institutions in Kenya. Gwako (2012) did a study on the selection of ICT on business execution utilizing an instance of little and medium endeavors in Nakuru focal business District, Kenya. Atieno (2014) considered ICT and inventory network execution among logistics firms in Nairobi, Kenya.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

The chapter also presented the population studied, the methods used to sample it, data collection instruments and procedures that were used in data analysis.

#### **3.2 Research Design**

Mathoko et al (2007) defines a research design as a master plan developed by a researcher to guide their data collection and analysis process with the aim of achieving study objectives. Descriptive research design was adopted to ensure the objective of the study is exhaustively met. This enabled the researcher to employ secondary quantitative data which was obtained from published books of accounts of.

#### **3.3 Population and Sample**

A population is a complete cluster of people, events or objects having common characteristics that adjust to a given specifications (Saunders, 2011). In keeping with Saunders (2011) population is that the full set of cases from that a sample is taken. The population consisted of 258 financial establishments in Kenya as at 2015. These are distributed as shown in the Table 3.1 below:

**Table 3.1: Target Population**

<b>Institution category</b>	<b>Population</b>	<b>Proportion</b>
Commercial Banks	43	17%
Insurance Companies	47	18%
micro-finance institutions	52	20%
Forex Bureaus	116	45%
<b>Total</b>	<b>258</b>	<b>100%</b>

#### **3.4 Sample Size**

The sample size is the part of the target population that was selected for the purpose of data collection. Mugenda and Mugenda (2003) argue that when the population is large and uneconomical to study all of it, a representative sample of between 10-30% is considered adequate. This study therefore selected a representative sample of 30%

for inclusion in the study. Simple random sampling technique was applied in each stratum to ensure every institution was given an equal chance of inclusion in the study. The sample size was 78 distributed as shown in the Table 3.2 below:

**Table 3.2: Sample Size Distribution**

<b>Institution category</b>	<b>Population</b>	<b>Sample proportion</b>	<b>Sample Size</b>
Commercial Banks	43	30%	13
Insurance Companies	47	30%	14
Micro-finance institutions	52	30%	16
Forex Bureaus	116	30%	35
<b>Total</b>	<b>258</b>		<b>78</b>

### **3.4 Data Collection Procedures and Instruments**

The study adopted primary data using questionnaires and secondary data was collected from the respective institution' financial statements and summaries at the Central bank of Kenya. The targeted respondents were senior, middle and low management staff in the respective financial institutions. The study considered data for five years starting 2011 to 2015. This period has been selected because of the huge technological changes that have been witnessed in the financial sector.

### **3.5 Data Analysis**

The whole process of data analysis begins immediately after data collection and involves interpretation of data and interpretation of data (Saunders, 2011). Chandran (2004) defines statistics as a discipline that gives the tools of study in research and one that refers to facts, info or knowledge to a system of knowledge assortment and analysis. Therefore, editing, coding, classifying and tabulation are the process steps that was accustomed method knowledge for higher and economical analysis.

### 3.5.1 Model Specification

Variables used for the analysis included financial performance measure (Return on Equity for the selected financial institutions) and the adoption of ICT by financial institutions. Performance was operationalized using a commonly used accounting-based measure of profitability Return to equity.

A general model for information allowed the study to estimate information with nice flexibility and formulate the variations within the behaviour of the cross-sectional components that are adopted.

Adoption of ICT was measured using adoption of mobile banking technologies, internet technologies, adoption of electronic money transfer, mobile banking transaction and electronic data interchange.

$$ROE = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

Where:

ROE (Return on Equity) is Return on equity for Financial institution  $i$  in time  $t$ ;

$X_1$  = Adoption of Mobile Banking

$X_2$  = Adoption of Electronic Money Transfer

$X_3$  = Adoption of Internet Banking

$X_4$  = Adoption of ATM Technology

$\epsilon$  = is the error term

### 3.5.2 Test of Significance

Analysis of Variance was used to establish the validity of the model.

## CHAPTER FOUR

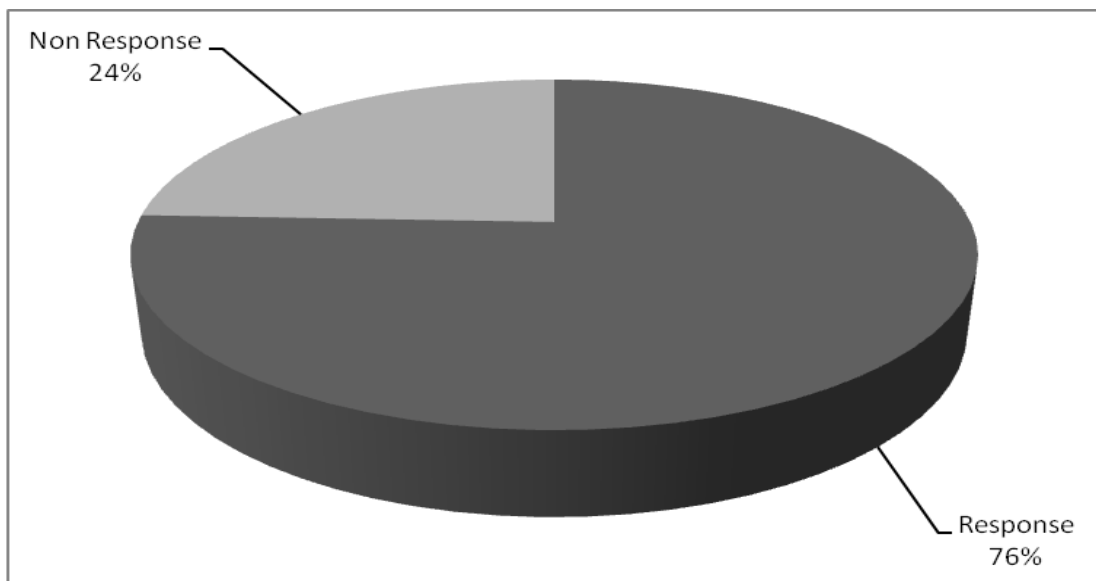
### DATA ANALYSIS, PRESENTATION AND INTERPRETATION

#### 4.1 Introduction

The study sought to determine the effects of information communication technology adoption on financial institutions in Kenya.

##### 4.1.1 Response Rate

The study targeted a sample of 78 financial institutions. Out of the 78 distributed questionnaires, 59 which make up 76%. Saunders (2011) stipulated that a response rate of 70% and above is excellent for analysis thus the response from the study was a good representative of the population and was excellent for analysis. The findings are represented in Figure 4.2



**Figure 4.1: Response Rate**

#### 4.2 General Information

The study sought to establish the general information of the financial institutions including number of years in operations in order to have an understanding of their suitability to undertake the study.

### 4.2.1 Period in Operations

Data findings on the period in operation are well illustrated in the Table 4.1.

**Table 4.1: Number of Years in Operations**

	<b>Frequency</b>	<b>Percent</b>
Below 3 years	10	16.9
4-6 years	17	28.8
7-10	13	22.0
more than 10 years	19	32.2
<b>Total</b>	<b>59</b>	<b>100.0</b>

From the finding in Table 4.1, 16.9% of the financial institutions had been in operation for a period of below 3 years, 28.8% for a period of between 4-6 years, 22% for a period of between 7-10 years and 32.2% for a period of more than 10 years. This shows that the financial institutions had been in operations long enough so the data provided was relevant and reliable for the study.

### 4.3 Adoption of Mobile Banking Technologies

Several elements of adoption of mobile banking technologies among customers were identified and the respondents were needed to point the extent to which each of these elements applies to their organization as shown on Table 4.2.

**Table 4.2: Adoption of Mobile Banking Technologies**

	<b>Mean</b>	<b>Std. Dev</b>
More than 80% of our customers have adopted mobile banking technology	3.84	1.030
Adoption of mobile banking has reduced customers queues in the halls	3.62	1.201
Adoption of mobile banking has improved in the non interest revenue to the institution	3.79	1.214
Adoption of mobile banking has reduced the level of operational costs	3.96	1.049
Adoption of mobile banking has increased the frequency of customer transactions	3.67	1.209

As shown in Table 4.2, more than 80% of our customers have adopted mobile banking technology had a mean of 3.84 with a standard deviation of 1.030, adoption of mobile banking has reduced customers queues in the halls had a mean of 3.62 with a standard deviation of 1.201, adoption of mobile banking has improved in the non interest revenue to the institution had a mean of 3.79 with a standard deviation of 1.214, adoption of mobile banking has reduced the level of operational costs had a mean of 3.96 with a standard deviation of 1.049 and adoption of mobile banking has increased the frequency of customer transactions had a mean of 3.67 with a standard deviation of 1.209.

#### **4.4 Adoption of Electronic Money Transfer**

Elements of adoption of electronic money transfer among customers are shown in the Table 4.3.

**Table 4.3: Adoption of Electronic Money Transfer**

	<b>Mean</b>	<b>Std. Dev</b>
Adoption of electronic money transfer has improved efficiency in bank operations	4.05	1.040
Adoption of electronic money transfer has reduced staff costs	3.96	.982
Adoption of money transfer has increased non interest revenue	3.71	1.114
Adoption of electronic money transfer has reduced fraud cases in the bank	4.03	1.016

From the finding, adoption of electronic money transfer has improved efficiency in bank operations had a mean of 4.05 with a standard deviation of 1.040, adoption of electronic money transfer has reduced staff costs had a mean of 3.96 with a standard deviation of 0.982, adoption of money transfer has increased non interest revenue had a mean of 3.71 with a standard deviation of 1.114 and adoption of electronic money transfer has reduced fraud cases in the bank had a mean of 4.03 with a standard deviation of 1.016.



#### 4.5 Adoption of Internet Banking Transaction

Several elements of adoption of internet banking transactions among customers were as shown in Table 4.4

**Table 4.4: Adoption of Internet Banking Transaction**

	Mean	Std. Dev
Adoption of internet banking has improved cost efficiency in the bank	4.18	1.090
Adoption of internet banking has improved customer relationship management in the bank	3.74	1.168
Adoption of internet banking has improved customer convenience	3.77	1.160
Adoption of internet banking has reduced bank operating expenses	4.03	1.049

As indicated in Table 4.4, adoption of internet banking has improved cost efficiency in the bank had a mean of 4.18 with a standard deviation of 1.090, adoption of internet banking has improved customer relationship management in the bank had a mean of 3.74 with a standard deviation of 1.168, adoption of internet banking has improved customer convenience had a mean of 3.77 with a standard deviation of 1.160 and adoption of internet banking has reduced bank operating expenses had a mean of 4.03 with a standard deviation of 1.049.

#### 4.6 Adoption of ATM Technology

Several components of the adoption of ATM technology among customers were known and therefore the respondents were needed to indicate agreement as shown in Table 4.5

**Table 4.5: Adoption of ATM Technology**

	Mean	Std. Dev
Adoption of ATM technology has improved cost efficiency in the bank	4.01	1.042
Adoption of ATM technology has improved fraud risk management in the bank	3.88	1.051
Adoption of ATM technology has improved new customer enrolment in the bank	4.08	1.055

As shown in Table 4.5, adoption of ATM technology has improved cost efficiency in the bank had a mean of 4.01 with a standard deviation of 1.042, adoption of ATM technology has improved fraud risk management in the bank had a mean of 3.88 with a standard deviation of 1.051 and adoption of ATM technology has improved new customer enrolment in the bank had a mean of 4.08 with a standard deviation of 1.055.

#### 4.7 Correlation Analysis

The researcher carried out correlation analysis to find out the effects of information communication technology adoption on overall financial results of financial institutions in Kenya. The findings are presented in Table 4.6.

**Table 4.6: Correlation Analysis**

		Return on Equity	Adoption of Mobile Banking	Adoption of Electronic Money	Adoption of Internet Banking	Adoption of ATM Technology
Return on Equity	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	59				
Adoption of Mobile Banking	Pearson Correlation	.545**	1			
	Sig. (2-tailed)	.000				
	N	59	59			
Adoption of Electronic Money	Pearson Correlation	.507**	.892**	1		
	Sig. (2-tailed)	.000	.000			
	N	59	59	59		
Adoption of Internet Banking	Pearson Correlation	.506**	.893**	.999**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	59	59	59	59	
Adoption of ATM Technology	Pearson Correlation	.502**	.755**	.850**	.849**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	59	59	59	59	59

The findings of correlation analysis indicate that strong positive correlation exists between adoption of mobile banking and overall financial results of financial institutions ( $r = 0.545$ ,  $p=0.000$ ,  $N=59$ ). Since the p value 0.000 is less than 0.05, this indicates that statistically significant association exists between the adoption of mobile banking and overall financial results of financial institutions in Kenya.

The study further revealed a strong positive correlation between adoption of electronic money and Overall financial results of financial institutions ( $r= 0.507$ ,  $p=0.000$ ,  $N= 59$ ). As the p value 0.000 is less than 0.05, this implies that statistically significant association exists between the adoption of electronic money and overall financial results of financial institutions.

The study also established that a strong positive correlation exists between the adoption of internet banking and overall financial results of financial institutions in Kenya ( $r=0.506$   $p=0.000$   $N=59$ ). Since the p value is less than 0.05, this indicates that statistically significant association exists between the adoption of internet banking and financial performance of financial institutions in Kenya.

The study found out that a strong positive association exists between the adoption of the automated teller machines and overall financial results of financial institutions in Kenya ( $r= 0.502$   $p=0.000$   $N= 59$ ). The p value 0.000 being less than 0.05 indicates that statistically significant association exists between the adoption of ATMs and financial performance of financial institutions in Kenya.

#### **4.8 Regression Analysis**

Multiple regression analysis was conducted to examine the effects of information communication technology adoption on overall financial results of financial institutions in Kenya. The findings are summarized in subsequent Tables.

**Table 4.7: Model Summary**

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
	.565	.319	.269		.13355

The findings of the model indicate an R of 0.565, R square of 0.319 and adjusted R square of 0.269. This implies that 31.9% of the variations in overall financial results of financial institutions in Kenya is explained by the independent variables of the study (adoption of mobile banking, adoption of electronic money transfer, adoption of internet banking, adoption of ATM technology).

**Table 4.8: ANOVA**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	.452	4	.113	6.332	.000 <sup>b</sup>
Residual	.963	54	.018		
<b>Total</b>	<b>1.415</b>	<b>58</b>			

The ANOVA findings from Table 4.8 indicate an F calculated of 6.332 with an F critical value (from F table) of 2.5429. Since F calculated is greater than F critical;  $6.332 > 2.5429$ , this is an indicator that the overall regression model was significant in predicting the effects of information communication technology adoption on financial performance of financial institutions in Kenya.

**Table 4.9: Regression Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta		
(Constant)	.078	.018		4.315	.000
Adoption of Mobile Banking	.068	.037	.465	1.865	.038
Adoption of Electronic Money	.066	.510	.425	.130	.027
Adoption of Internet Banking	.087	.510	.558	.171	.015
Adoption of Automated Teller Machine Technology	.047	.038	.265	1.242	.020

The resultant equation becomes:

$$\text{ROE} = 0.078 + 0.068X_1 + 0.066X_2 + 0.087X_3 + 0.047X_4 + \varepsilon$$

Where: ROE (Return on Equity) is Return on equity for Financial institution  $i$  in time  $t$ ;  $X_1$  = Adoption of Mobile Banking,  $X_2$  = Adoption of Electronic Money Transfer,  $X_3$  = Adoption of Internet Banking and  $X_4$  = Adoption of ATM Technology

The findings indicate that when all the variables are held constant, overall financial results of financial institutions would be at 0.078, a unit increase of mobile banking holding other variables constant would improve overall financial results of financial institutions by 0.068, a unit increase in the adoption of electronic money transfer holding other variables constant would improve overall financial results by 0.066, a unit increase in the adoption of internet with other factor held constant would improve overall financial results of financial institutions by 0.087 and a unit increase in the adoption of ATM technologies holding other factor constant would improve overall financial results of financial institutions by 0.047. The resultant  $p$  values for all the independent variables (0.038, 0.027, 0.015, and 0.020) are all less than 0.05. This indicates statistically significant associations between the independent and the dependent variable of the study.

#### **4.9 Discussion**

The study found out that a strong positive correlation exists between adoption of mobile banking and overall financial results of financial institutions ( $r = 545$ ,  $p=0.000$ ,  $N=59$ ). Since the  $p$  value 0.000 is less than 0.05, this indicates that statistically significant association exists between the adoption of mobile banking and financial performance of financial institutions in Kenya. This therefore implies that an increase in the adoption of mobile banking increases financial performance of financial institutions. The findings also revealed that the adoption of mobile banking

has reduced the level of operational costs as the mean was 3.96 with a standard deviation was 1.049. The finding concurs with San-Jose, Ituralde and Maseda (2009) who established that the benefits of investment in ICT applications lead to overall financial results improvement among financial institutions.

The study further revealed a strong positive correlation between adoption of electronic money and financial performance of financial institutions ( $r= 0.507$ ,  $p=0.000$ ,  $N= 59$ ). As the  $p$  value 0.000 is less than 0.05, this implies that statistically significant association exists between the adoption of electronic money and financial performance of financial institutions. It can therefore be inferred that an improvement in the adoption of electronic money enhances financial performance of financial institutions in Kenya. The findings further indicated that adoption of electronic money transfer has improved efficiency in bank operations with mean of 4.05 and standard deviation of 1.040. The finding concurs with Binuyo & Aregbeshola (2014) who examined ICT adoption and financial returns to shareholders in wealth. Moreover, the adoption of electronic money transfer has reduced fraud cases in the bank as the mean was 4.03 with a standard deviation was 1.016

The study also established that a strong positive correlation exists between the adoption of internet banking and financial performance of financial institutions in Kenya ( $r=0.506$   $p=0.000$   $N=59$ ). Since the  $p$  value is less than 0.05, this indicates that statistically significant association exists between the adoption of internet banking and financial performance of financial institutions in Kenya. The findings imply that increase in the adoption of internet banking increases financial performance of financial institutions in Kenya. The findings of the study further revealed that the adoption of internet banking has improved cost efficiency in the bank as supported by

mean of 4.18 with a standard deviation of 1.090. It was further established that the adoption of internet banking has reduced bank operating expenses had a mean of 4.03 with a standard deviation of 1.049.

The study found out that a strong positive association exists between the adoption of the automated teller machines and financial performance of financial institutions in Kenya ( $r= 0.502$   $p=0.000$   $N= 59$ ). The  $p$  value 0.000 being less than 0.05 indicates that statistically significant association exists between the adoption of ATMs and financial performance of financial institutions in Kenya. The findings suggest that an improvement in the adoption of ATM technologies increases financial performance of financial institutions in Kenya. The findings concur with Batiz-Lazo and Wood (2002) and Batiz-Lazo and Wardley (2007) who established that the use of ICT in the financial sector enables increased efficiency and accessibility of information this improves coordination of activities within organizational boundaries. The electronic distribution of retail banking services for instance the use of automated teller machines (ATM's), a technology pioneered by Barclays bank in 1967. The findings also concur with Onchwari (2012) who examined information technology and competitiveness of commercial banks in Kenya and established that the adoption Information Technology enhanced competitiveness as it enabled the bank to practices had retail-banking, automated banking and other financial services, and retain customers through strengthening customer relationships.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

The chapter provided the summary of the findings, it also gave the conclusion from the findings and the recommendation of the study based on the objectives of the study. The chapter gives an overview of the limitations faced while carrying out the study and gave suggestions for further studies.

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

The study found out that more than 80% of the customers had adopted mobile banking technology; adoption of mobile banking had reduced customers' queues in the halls, improved in the non interest revenue to the institutions, reduced the level of operational costs and increased the frequency of customer transactions. The study also found out that adoption of electronic money transfer had improved efficiency in the institutions operations, reduced staff costs, increased noninterest revenue and reduced fraud cases.

The study also revealed that adoption of internet banking had improved cost efficiency in the institutions, improved customer relationship management in the bank, improved customer convenience and reduced the institutions operating expenses. Adoption of ATM technology had improved cost efficiency in the institutions, improved fraud risk management in the bank and improved new customer enrolment in the institutions.

The findings of correlation analysis revealed that that strong positive correlation exists between adoption of mobile banking and financial performance of financial institutions ( $r = 545$ ,  $p=0.000$ ,  $N=59$ ). The study further revealed a strong positive



correlation between adoption of electronic money and financial performance of financial institutions ( $r= 0.507$ ,  $p=0.000$ ,  $N= 59$ ). The study also established that a strong positive correlation exists between the adoption of internet banking and financial performance of financial institutions in Kenya ( $r=0.506$   $p=0.000$   $N=59$ ). It was further established that a strong positive association exists between the adoption of the automated teller machines and financial performance of financial institutions in Kenya ( $r= 0.502$   $p=0.000$   $N= 59$ ).

### **5.3 Conclusion**

The study concludes that majority of the financial institutions in Kenya have invested their resources in new products and technology innovations such as mobile banking, electronic funds transfer, internet banking and automated teller machines. These aspects of ICT have helped the institutions in carrying out business activities more effectively and efficiently.

The study concludes that adoption of ICT enables operations of financial institutions to be more efficient through making financial services more available and reducing their costs. This was mostly achieved by technological innovations. Financial products that are delivered through ICT are user friendly and promote the institutions revenues, increased profits, increase liquidity and lower the risks related to the usage of financial services.

The study further concludes that there is strong significant correlation between the adoption of internet banking technology, adoption of electronic money transfer, adoption of internet banking technology adoption of ATM technology and the financial performance of financial institutions in Kenya.

#### **5.4 Recommendation**

The study recommended that financial institutions strive to integrate ICT in their operations for improved overall financial results. ICT adoptions improved the speed with which communication in the institution is executed hence high efficiency. The study also noted that application of ICT leads to improved development of new products. Therefore, the study recommends for continued investment in ICT to ensure that appropriate products are developed that meet the changing needs of customers. ICT also helps financial institutions in collecting and managing information for competitiveness through generation of a wide range of products ideas.

Developments in information communications and technology bring with them certain risks which require proper mitigation. Therefore considering information communications and technology driven products, the study recommends that the oversight responsibility and management should be placed on the management of the financial institutions and to put in place appropriate and adequate controls in order to provide customer confidence on matters concerning discretion and reliability of the services.

#### **5.5 Limitation of the Study**

The study encountered unwillingness by respondent's to reveal information, which they thought confidential. To counter this, the researcher assured them that the study was for academic purposes only and they were not required to disclose their names or names of their institutions and that information provided would be treated with a lot of confidentiality.

The study used drop pick later method of the questionnaires in data collection; this is suspected to be the reason for non-response in some questionnaires as compared to

the case where the researcher personally administers the questionnaire and takes the respondents through the process. Personal administration of questionnaires would ensure data collected is adequate.

### **5.6 Suggestions for Further Studies**

The study suggests that for effective conclusive study on the effects of ICT adoption on overall financial results, a replica study be carried out in another industry for example the manufacturing sectors for comparison of results.

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## APPENDICES

### APPENDIX 1: QUESTIONNAIRE

#### SECTION A: GENERAL INFORMATION

1. Name of the Institution (Optional) \_\_\_\_\_
2. Number of years in Operations
 

Below 3 years	[    ]	4-6 years	[    ]
7-10 years	[    ]	More than 10 years	[    ]

#### SECTION B: ADOPTION OF MOBILE BANKING TECHNOLOGIES

3. Below are several elements of adoption of mobile banking among customers. Kindly indicate the extent to which each of these elements apply to your organization. Use a scale of 1-5 where 1= Not at all, 2= little extent, 3= moderate extent, 4= great extent and 5= very great extent.

Statements	1	2	3	4	5
More than 80% of our customers have adopted mobile banking technology					
Adoption of mobile banking has reduced customer queues in the halls					
Adoption of mobile banking has improved the non interest revenue to the institution					
Adoption of mobile banking has reduced the level of operational costs					
Adoption of mobile banking has increased the frequency of customer transactions					

#### SECTION C: ADOPTION OF ELECTRONIC MONEY TRANSFER

4. Below are several elements of adoption of electronic money transfer among customers. Kindly indicate the extent to which each of these elements applies to your organization. Use a scale of 1-5 where 1= Not at all, 2= little extent, 3= moderate extent, 4= great extent and 5= very great extent.

Statements	1	2	3	4	5
Adoption electronic money transfer has improved efficiency in Bank operations					
Adoption of electronic money transfer has reduced staff costs					
Adoption of electronic money transfer has increased non-interest revenue					
Adoption of electronic money transfer has improved reduced fraud cases in the Bank					

**SECTION D: ADOPTION OF INTERNET BANKING TRANSACTION**

5. Below are several elements of adoption of internet banking transactions among customers. Kindly indicate the extent to which each of these elements apply to your organization. Use a scale of 1-5 where 1= Not at all, 2= little extent, 3= moderate extent, 4= great extent and 5= very great extent.

Statements	1	2	3	4	5
Adoption of internet banking has improved cost efficiency in the Bank					
Adoption of internet banking has improved customer relationship management in the Bank					
Adoption of internet banking has improved customer convenience					
Adoption of internet banking has reduced operating expenses					

**SECTION E: ADOPTION OF ATM TECHNOLOGY**

6. Below are several elements of adoption of ATM technology among customers. Kindly indicate the extent to which each of these elements apply to your organization. Use a scale of 1-5 where 1= Not at all, 2= little extent, 3= moderate extent, 4= great extent and 5= very great extent.

Statements	1	2	3	4	5
Adoption of ATM technology has improved cost efficiency in the Bank					
Adoption of ATM technology has improved fraud risk management in the Bank					
Adoption of ATM technology has improved new customer enrolment in the Bank					

**SECTION G: RETURN ON EQUITY**

Kindly indicate the return on Equity for your firm in the last five years

	2011	2012	2013	2014	2015
ROE					



## **APPENDIX II: LIST OF SAMPLED COMMERCIAL BANKS**

1. Barclays Bank
2. CFC Stanbic Bank
3. Commercial Bank of Africa
4. Cooperative Bank
5. Equity Bank
6. Family Bank
7. I & M Bank
8. Kenya Commercial Bank
9. K-Rep(sidian)
10. National Bank of Kenya
11. NIC Bank
12. Stanchart
13. Trans-National Bank

### **APPENDIX III: LIST OF SAMPLED INSURANCE COMPANIES**

1. AMACO
2. APA
3. Britam
4. CIC
5. Fidelity
6. First Assurance
7. Heritage
8. Jubilee
9. Kenya Re
10. Liberty
11. Madison
12. Old Mutual Life
13. Pan Africa ( Sanlam)
14. Pioneer

**APPENDIX IV: LIST OF SAMPLED MICROFINANCE INSTRUCTIONS**

1. Caritas
2. Century
3. Choice
4. Daraja
5. Faulu
6. KWFT
7. Rafiki
8. Remu
9. SMEP
10. Sumac
11. U&I
12. Uwezo

## **APPENDIX VI: LIST OF SAMPLED FOREX BUREAUS**

1. Union Forex Bureau Ltd
2. Alpha Forex Bureau
3. Arcade Forex Bureau
4. Avenue Forex Bureau
5. Bamburi Forex Bureau
6. Bay Forex Bureau
7. CBD Forex Bureau
8. Travel Point Forex Bureau Limited
9. Travellers Forex Bureau Ltd
10. Trade Bureau De Change Ltd
11. Taipan Forex Bureau Ltd
12. Sterling Forex Bureau Ltd
13. Solid Exchange Bureau Ltd
14. Sky Forex Bureau Limited
15. Simba Forex Bureau Limited
16. Satellite Forex Bureau Ltd
17. Pwani Forex Bureau Ltd
18. Penguin Forex Bureau Ltd
19. Pel Forex Bureau Ltd
20. Pearl Forex Bureau Ltd
21. Peaktop Exchange Bureau Ltd
22. Pacific Forex Bureau Limited
23. Offshore Forex Bureau Limited
24. Net Forex Bureau Ltd
25. Nawal Forex Bureau Ltd
26. Namanga Forex Bureau Ltd
27. Nairobi Forex Bureau Ltd
28. Nairobi Bureau De Change Ltd
29. Mustaqbal Forex Bureau Ltd
30. Moneypoint Forex Bureau Ltd
31. Mona Bureau De Change Ltd
32. Middletown Forex Bureau Ltd
33. Metropolitan Bureau De Change Ltd
34. Link Forex Bureau Ltd
35. Leo Forex Bureau Ltd

**APPENDIX VII: RETURNS ON EQUITY ROE DETERMINATION**

<b>COMMERCIAL BANKS</b>	<b>ROE 2011</b>	<b>2011 ROE</b>	<b>2012 ROE</b>	<b>2013 ROE</b>	<b>2014 ROE</b>	<b>2015 ROE</b>	<b>Aver. ROE</b>					
Kenya Commercial Bank	0.3118	01032	0.2976	98674	0.2844	32049	0.3098	73207	0.2898	52385	0.2987	3147
Equity Bank	0.3453	50815	0.3763	59205	0.3597	17482	0.4937	51995	0.4719	22428	0.4094	2038
Barclays Bank	0.4141	77531	0.4401	17635	1.5658	15081	0.3225	84031	0.3040	0846	0.6093	4055
CFC Stanbic Bank	0.3082	13793	0.2603	1711	0.3133	80754	0.2773	98289	0.2505	04407	0.2819	6287
I & M Bank	0.3216	89521	0.2846	12139	0.2952	49695	0.3552	30586	0.3195	0968	0.3152	5832
Stanchart	0.4010	90856	0.3764	01006	0.3695	80905	0.3535	22868	0.2193	38124	0.3439	8675
Cooperative Bank	0.2940	95461	0.3305	14033	0.3002	6366	0.2955	066	0.2853	92712	0.3011	5449
NIC Bank	0.3394	54545	0.2861	59973	0.2961	26141	0.2688	56663	0.2366	37182	0.2854	469
National Bank of Kenya	0.2337	27047	0.1097	60766	0.1501	51924	0.1925	0454	0.1542	97233	0.1680	883
Commercial Bank of Africa	0.3003	99597	0.3419	72457	0.3246	78158	0.2532	34026	0.0274	29543	0.2495	4276
K-Rep(sidian)	0.1922	9151	0.2003	92927	0.2981	79872	0.2997	53289	0.1355	22544	0.2252	2803
Family Bank	0.1572	11191	0.1734	5679	0.2945	71046	0.2464	92797	0.2417	20466	0.2226	9046

Trans-National	0.1692	0.1755	0.1203	0.0997	0.1239	0.1377
Bank	08262	72519	85233	38903	54747	7193

### INSURANCE CO'

	0.1248	0.4503	0.1601	0.2706	0.4342	0.2880
Madison	81022	02851	23946	61552	72325	4834

	0.0915	0.1423	0.1695	0.1429	0.1056	0.1304
Old Mutual Life	45404	75995	25285	02043	70802	0391

	-				-	
	0.2014	0.2284	0.2115	0.1498	0.0675	0.0641
Britam	71981	58305	47631	33542	80498	574

	0.1833	0.2537	0.2102	0.1928	0.1710	0.2022
CIC	22769	39929	47467	99837	09353	4387

	0.3194	0.3095	0.2362	0.2396	0.2033	0.2616
Jubilee	2826	86124	07621	55171	80447	5152

	0.1767	0.2108	0.1923	0.1960	0.2012	0.1954
Kenya Re	04086	60829	54628	70871	95521	5719

	0.2673	0.2577	0.2376	0.2186	0.0057	0.1974
Liberty	82935	76579	74299	98663	27798	5205

Pan Africa (	0.2811	0.3516	0.4542	0.3051	0.0142	0.2812
Sanlam)	33971	86959	369	11164	88356	9147

					-	
		0.1029	0.1599	0.1767	0.0690	0.0741
APA	0	84189	74583	39227	33067	3299

	0.3229	0.2489	0.3982	0.3391		0.2618
Heritage	05719	54544	89507	93115	0	6858

Fidelity	0.0979	0.1975	0.1616	0.1886	0	0.1291
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		56984	15429	25234	84809		5649
		0.1359	0.1399	0.1686	0.1457	0.1236	0.1427
AMACO		86733	41691	04651	69623	89727	9849
		0.1286	0.1244	0.0758	0.6056		0.1869
Pioneer		85479	57019	66087	44741	0	3067
		0.3343	0.4044	0.3181	0.0664		0.2246
First Assurance		42761	81273	13529	86809	0	8487
<b>MICROFINANC E INSTUTIONS</b>							
		-					
		0.0233	0.1579	0.4097	0.1140	0.0425	0.1402
Faulu		81295	80456	74436	74465	68039	0322
		0.1205	0.1068	0.1971	0.1513	0.1189	0.1389
KWFT		19481	17195	00449	2436	25831	3746
					-	-	
		0.1031	0.1338	0.0414	0.2108	0.0062	0.0122
SMEP		74603	70968	11043	10811	0155	8885
			-	-		-	-
			0.1176	0.0606	0.0050	0.1076	0.0821
Remu		-0.13	47059	06061	63291	92308	7643
		-					
		0.1111	0.0571	0.0321	0.0088	0.0441	0.0062
Rafiki		11111	42857	88841	84501	03547	4173
		-	-	-			-
		0.1702	0.0363	0.0447		0.0111	0.0455
Uwezo		12766	63636	76119	0.0125	11111	4828
				-	-	-	-
Century	0	0	0	0.4222	0.1688	1.0943	0.3370

				22222	31169	39623	786
				0.0444	0.0218	0.0841	0.0300
U&I	0	0	0	44444	9781	1215	9088
				-			-
				0.0874	0.0102	0.0628	0.0028
Sumac	0	0	0	31694	5641	01932	7467
						-	-
						0.4545	0.0909
Choice	0	0	0	0	0	45455	0909
						-	-
						0.5373	0.1074
Daraja	0	0	0	0	0	13433	6269
Caritas	0	0	0	0	0	0	0

### **FOREX BUREA**

Union	Forex						
Bureau Ltd	0	0	0	0	0	0	0
Alpha	0	0	0	0	0	0	0
Arcade	0	0	0	0	0	0	0
Avenue	0	0	0	0	0	0	0
Bamburi	0	0	0	0	0	0	0
Bay	0	0	0	0	0	0	0
CBD Forex Burea	0	0	0	0	0	0	0
Travel Point Forex	0	0	0	0	0	0	0



Bureau Limited

Travellers Forex

Bureau Ltd 0 0 0 0 0 0

Trade Bureau De

Change Ltd 0 0 0 0 0 0

Taipan Forex

Bureau Ltd 0 0 0 0 0 0

Sterling Forex

Bureau Ltd 0 0 0 0 0 0

Solid Exchange

Bureau Ltd 0 0 0 0 0 0

Sky Forex Bureau

Limited 0 0 0 0 0 0

Simba Forex

Bureau Limited 0 0 0 0 0 0

Satellite Forex

Bureau Ltd 0 0 0 0 0 0

Pwani Forex

Bureau Ltd 0 0 0 0 0 0

Penguin Forex

Bureau Ltd 0 0 0 0 0 0

Pel Forex Bureau

Ltd 0 0 0 0 0 0

Pearl Forex Bureau

Ltd 0 0 0 0 0 0

Peaktop Exchange

0 0 0 0 0 0

Bureau Ltd						
Pacific	Forex					
Bureau Limited		0	0	0	0	0
Offshore	Forex					
Bureau Limited		0	0	0	0	0
Net Forex	Bureau					
Ltd		0	0	0	0	0
Nawal	Forex					
Bureau Ltd		0	0	0	0	0
Namanga	Forex					
Bureau Ltd		0	0	0	0	0
Nairobi	Forex					
Bureau Ltd		0	0	0	0	0
Nairobi Bureau De						
Change Ltd		0	0	0	0	0
Mustaqbal	Forex					
Bureau Ltd		0	0	0	0	0
Moneypoint	Forex					
Bureau Ltd		0	0	0	0	0
Mona Bureau De						
Change Ltd		0	0	0	0	0
Middletown	Forex					
Bureau Ltd		0	0	0	0	0
Metropolitan						
Bureau De Change						
Ltd		0	0	0	0	0

Link Forex Bureau

Ltd	0	0	0	0	0	0
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Leo Forex Bureau

Ltd	0	0	0	0	0	0
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