ELECTRONIC BANKING AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA

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MAY, 2019
DECLARATION

This proposal is my original work and has not been presented for examination in any other university.

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D53\CE\28067\2015

This proposal has been submitted for examination with my approval as the supervisor of Kenyatta University.

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DEDICATION

This research project is dedicated to my parents who supported me, brothers, sisters and friends who inspired me to finish this project.
ACKNOWLEDGEMENT

I would like to thank God for showering me with the spirit of wisdom to write this proposal. I also acknowledge the efforts of my supervisor Mr. Atheru and my lecturer in research methods Dr. Rosemary James because of the knowledge that they have imparted in me to make my proposal a success. I appreciate all my classmates because of the consultation I made now and then to make the writing successful. I appreciate the principal because of providing me with the opportunity to study. May God make others to be a blessing to you.
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OPERATIONAL DEFINITION OF TERMS

ELECTRONIC BANKING: Is when a bank customer conducts banking transactions electronically through the internet which involves the use of electronic equipments with internet connection such as: mobile phones, automated teller machine, debit or credit cards and without visiting the branch.

MOBILE BANKING: Involves the use of a mobile phone in conducting a banking transactions such as: account enquiry, funds transfer, bill payment and changing of password. Mobile banking is one of the most promising ways to reach the masses because it gets banking services even to those living in remote areas with immediate availability of funds at any time.

DEBIT CARD: Is a plastic card that is linked to local bank accounts that enables the holder to access his or her account electronically without visiting the bank premises and offers immediate confirmation of payments.

CREDIT CARD: Is a plastic card used to link a customer to a credit line that enables him or to pay for goods and services electronically.

FINANCIAL PERFORMANCE: Financial performance is a measure of how a bank uses its assets in order to generate revenue. This is a monetary measure of the overall financial health of a bank over a given period of time which will be measured by the bank’s return on assets, return on equity and the market share.
AUTOMATED TELLER MACHINE BANKING: This is when bank customers by the use of a plastic ATM card gain access to their bank account without the aid of a bank representative to carry out several transactions such as: cash withdrawals, check balances, obtain bank statements, pay bills, and obtain bank statement.
## ABBREVIATIONS AND ACRONYMS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ATM</td>
<td>Automated Teller Machine</td>
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<tr>
<td>CAMELS</td>
<td>Capital Asset Management Earnings Liquidity Sensitivity</td>
</tr>
<tr>
<td>CBA</td>
<td>Commercial Bank of Africa</td>
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<td>CBK</td>
<td>Central Bank of Kenya</td>
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<td>CIBM</td>
<td>Consumer Internet Banking Model</td>
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<td>DTM</td>
<td>Deposit Taking Micro Finance Institutions</td>
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<tr>
<td>ICT</td>
<td>Information &amp; Communication Technology</td>
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<tr>
<td>IDT</td>
<td>Information Diffusion Theory</td>
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<tr>
<td>IT</td>
<td>Information Technology</td>
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<tr>
<td>MFC</td>
<td>Mortgage Finance Company</td>
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<tr>
<td>PEOU</td>
<td>Perceived Ease of Use</td>
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<td>PU</td>
<td>Perceived Usefulness</td>
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<tr>
<td>ROA</td>
<td>Return on Assets</td>
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<td>ROE</td>
<td>Return on Equity</td>
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<td>TAM</td>
<td>Technology Acceptance Model</td>
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<td>TPB</td>
<td>Theory of Planned Behavior</td>
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ABSTRACT

Information technology has changed the traditional ways of doing business to a digital and electronic way that has led to globalization. The banking industry has been forced by the wave of electronic payment system in the business environment to change from its traditional ways such as: long queues as customers waited to be served, delay in the clearing house as representatives of different banks waited to settle their dues and manual work that resulted to errors. The main purpose of the study was to determine the effect of electronic banking on the financial performance of commercial banks in Kenya. The specific objectives were to determine the extend of internet, mobile, automated teller machine and debit/credit card banking adoption and its effect on financial performance. The study covered a period of five years that is from the year 2011 to the year 2015 and adopted descriptive research design. The data collected was analyzed by the use of both descriptive and inferential statistics procedures. Primary and secondary data was collected from the 34 commercial banks that responded leading to a respond rate of 79.04% out of the 43 commercial banks. The trade analysis showed that internet banking was recognized and accepted by the Kenyan commercial banks and the Kenyans as a way of transacting. Electronic banking was found to be positive and significantly related to the financial performance of the commercial banks in Kenya. This was attributed by an R Square of 0.688 for Return On Assets, 0.63 for Net Profit and 0.277 for Return On Equity indicating that the independent variables in the study were able to give information of up to 68.8%, 63% and 27.7% respectively while the remaining 31.2%, 27% and 72.3% could not be explained in the study but could be explained using other variables outside the study. All the independent variables were (internet banking, Mobile banking, Automated Teller Machine banking and Debit/Credit banking) found to be positively and significantly related to the Return On Assets while only mobile banking and internet banking were found to be positively and significantly related to Net Profit since their p Values were less 0.05. Automated Teller Machine banking showed a positive relation that was insignificant with the Return On Equity. The study recommends that, electronic banking should be employed by commercial banks through proper management policies since it has shown improved efficiency and financial performance. For further studies, areas of crime technology, quality of banking services, electronic fund transfer and performing loans should be looked at.
CHAPTER ONE:

INTRODUCTION

1.1 Background of the study

According to the study by Sarreal (2016) on history of internet banking, its evolution began in New York in the year 1981 when banks made home banking available to their customers. E-banking gained popularity in e-commerce by the year 2000 becoming the main goal of any bank that wished to remain competitive in the world. Most banks in the world by the year 2010 had changed from the traditional ways of doing business to digital ways.

Investigation done by Ekekwe (2016) showed that, for the Africa’s banking industry to survive, technology has turned out to be the greatest weapon without which they would not be competitive. It was also found in the study that, for the banks in Africa to maintain their competitive edge, they have to personalize their services in order to retain and attract customers. M-pesa has been proved to be offering services that dislocate the banking architecture of Kenya without even sparing the global banking giants. The future of the banking industry will be for the banks that will be offering high quality services at a low cost”s”

In their research Ayuma and Munywoki (2012) discovered that, in Kenya information technology has led to increased competition among businesses due to the change in traditional ways of doing business to the digital and electronic way that has led to globalization.

Electronic commerce is minimizing time, distance, expenses and space in doing business. The banking industry has been forced to personalize and customize their products and services in order to meet their customer’s needs and gain a higher share of the market.
In their research Aduda and Kingoo (2012) found that, adoption to electronic banking in Kenya has allowed the banks to create both time and place utility for their customers. Customers can now check their account balances and transfer money without any need to visit the bank premises making electronic banking to become popular. Banks now consider electronic banking as a major contribution to their success and invest more on the automated teller machine that operates twenty four hours, credit cards/debit cards and mobile banking that are more cost saving because they are capital intensive in their operation (Maiyo, 2013).

The introduction of electronic banking is driving the economy into a cashless society where consumers will hardly use hard cash in making payments for purchases but instead make electronic credit transfers to the seller’s accounts. To retain and attract customers, banks are encouraging the use of electronic banking which was catalyzed by the launching of Safaricom M-Pesa service in March 2007 and the availability of smart phones with internet option that are affordable (Gikonyo, 2014).

According to CBK supervision annual report (2015), operating expenses increased from Ksh277,522 m in 2014 to Ksh322,792m in 2015 and return on equity decreased from 10 percent in 2014 to 5 percent in 2015 which was after adoption of e-banking meaning that, most of the bank resources were spent on training the bank employees and advertising within this period leading to high operational costs. There were also increased cases of ICT related fraud which needed to be matched with effective controls.

Investigation by Ogare (2013) showed that, despite information technology has been identified to improve banks financial performance, high costs are incurred in its implementation and there is the obstacle of financial insecurity in e-banking due to fraud that is downsizing the number of
users which may reduce the bank profit. Several challenges have been associated with e-banking such as: increased costs, insecurity and inadequate skills that may have a negative effect on bank profitability.

### 1.1.1 Electronic Banking

In the findings by Njuguna (2012), electronic banking is the use of the internet to deliver banking services which includes transfer of funds from one account to another, request for cheque books, account opening, electronic bill payment and enquiry of the bank balance without visiting the bank premises. The internet channel is used to reduce operational costs. Its wide geographic coverage and personalization helps to attract and retain customers. In their research Pourkiaei and Ardestani (2014), described electronic banking as when banks do only deliver their services and products through the internet and ATMs without operating in a branch. This helps to reach customers anytime, anyplace, irrespective of the geographic barriers. Electronic banking has been described in different ways by different authors.

According to Isack (2014), electronic banking is when bank clients access bank information and investigation by Ogare (2013) showed that, despite information technology has been identified to improve banks financial performance, high costs are incurred in its implementation and there is the obstacle of financial insecurity in e-banking due to fraud that is downsizing the number of users which may reduce the bank profit. Several challenges have been associated with e-banking such as: increased costs, insecurity and inadequate skills that may have a negative effect on bank profitability.

Bank customers can carry out bank transactions without visiting the bank premises. This may be through telephone, mobile phone, digital television and the computer. According to Ogare
(2013), electronic banking is an innovation in the banking industry that involves the use of the internet and telecommunication networks bank services and products. Some of the identified major components of electronic banking include internet banking and electronic funds transfer.

1.1.2 Financial performance

In the study done by Gichungu (2015), it was found that financial performance shows the level to which a firm generates its revenue by the use of its assets over a given period of time. The different measures used to measure financial performance should be taken in aggregation. In their study Ngango et al (2015) claimed profitability to be one of the major measures of financial performance. Return on assets (ROA) reflects the level of profitability. Among the other ratios used is return on equity (ROE) which compares the amount of profit earned to the amount invested by shareholders, and the number of ATMs (Asa ,2015).

According to Mwangi (2014), Indicators of profitability were used to assess a bank’s financial performance to find out whether electronic banking leads to increased efficiency, effectiveness in terms of cost minimization and time saving. Profitability ratios were used to show management efficiency such as return on assets. This ratio is a measure of net income in relation to total assets that shows how well a firm uses its assets.

1.1.3 Electronic banking and the financial performance

Investigation done by Maiyo (2013) showed that, the use of electronic banking resulted to reduced costs due to reduced number of bank staff and increased profitability. Banks now operate on self-service basis as opposed to the traditional channels defined on the basis of human assistance, teller or corporate management (Pourkiael and Ardestani, 2014). Electronic payments have resulted to less cheque processing costs, online presentation of bank statements
reduced paper and mail distribution costs and less data entry as customers complete most of their transactions online (Njuguna, 2012).

According to Isack (2014), digital channels are encouraging customers to practice home banking without any need to visit the bank branch. These channels include automated teller machine, mobile banking, credit cards, smart cards and internet banking. Digital banking allows 24 hours service to the bank customers, saves time because the service is offered anytime and anywhere, convenient and environmental friendly because customers do not need to visit the bank physically. Improved customer satisfaction has led to a wider market reach and new market opportunities resulting to increased bank revenue (Njogu), 2014.

1.1.4 Kenya commercial banks
The Central Bank of Kenya was recognized as the regulatory authority as at 31st December 2015 with forty four financial institutions. One was a mortgage finance company (MFC) and forty three commercial banks. Thirty of the forty three commercial banks were locally owned, the government owns majority of the shares in three of the banks, twenty seven of the local commercial banks are privately owned while the other thirteen banks are foreign owned. According to the CBK annual report (2012), local banks accounted for 66.6% of the Kenya banking sector and 33.4% for the foreign owned banks.

The Central Bank Act, the Banking Act and the Companies Act are some of the guidelines issued by the Central of Kenya that govern the banking industry in Kenya. Banks act as an intermediary between borrowers and savers as they make funds available for investors to borrow. Proper functioning of the financial system in the economy is controlled by the Central Bank of Kenya, through the monetary policy (Mwange, 2013).
1.2 Statement of the problem

According to Kinoti (2015), the dynamic business environment has been associated with changes such as: globalization, personalization and customization of consumer services, changes in technology and competition. Investigation by Rono (2015) showed that, these changes forced commercial banks to innovate in e-banking in order to gain a competitive advantage by: making bank transactions easier, avoiding congestion caused by long queues as bank customers wait to be served, bringing services closer to the customers in order to attract and retain customers in hope of reducing cost of service delivery and improving the financial performance.

According to Ngango et al (2015), before the introduction of e-banking, bank customers complained of wastage of allot of time queuing waiting to be served and delay in payment of cheques as representatives of different banks waited in the clearing house for the settlement of their dues. In the study by Njogu (2014) it was found that, bank managers are celebrating after the introduction of e-banking as it results to new market opportunities, increased account sales, wider market reach and increased efficiency.

According to the bank supervision annual report (2015), information technology was expected to minimize time, distance, and space and expense thus expanding access to affordable financial services. The number of branches increased by 12 in the year 2015 when compared with year 2012 and the efficiency score increased from 770 to 972 respectively revealing a strong positive relationship. In the study by Njogu (2014) it was found that, electronic banking is allowing banks to change from the traditional channels associated with human assistance to digital channels that operate on self- service basis reducing operational cost and improving efficiency and financial performance.
However, some of the previous researchers give contradicting information on e-baking and the financial performance of commercial banks creating a need for sufficient research to be done on this topic.

In their study Aduda and Kingoo (2012) found that, there is a debate among researchers on whether adoption of electronic banking improved bank performance because it required a complementary investment in skills leading to costs that would reduce the bank performance in the short-run. Commercial bank management therefore needs sound analysis in order to understand all kind of risks to be able to find a balance between costs, risks and the bank financial performance. None of the previous researchers has come up with a clear report on the relationship between e-banking and the financial performance of commercial banks in Kenya. Therefore, this research is to fill the gap by evaluating the influence of electronic banking on the profitability of Kenya Commercial Banks.

1.3 Research objectives

1.3.1 General objective

The general objective of the study is to determine the effect of electronic banking on the financial performance of the Kenya commercial banks.

1.3.2 Specific objectives

i. To determine the effect of internet banking on the financial performance of commercial banks in Kenya.

ii. To establish the effect of mobile banking on the financial performance of commercial banks in Kenya.
iii. To establish the influence of ATM banking on the financial performance of commercial banks in Kenya.

iv. To determine the effect of Credit / Debit cards banking on the financial performance of commercial banks in Kenya.

1.4 Research questions

i. What is the influence of internet banking on the financial performance of commercial banks in Kenya?

ii. What is the contribution of mobile banking on the financial performance of commercial banks in Kenya?

iii. What is the influence of ATM banking on the financial performance of commercial banks in Kenya?

iv. What is the contribution of credit\debit cards banking on the financial performance of commercial banks in Kenya?

1.5 Significance of the study

The study will be significant to the customers by improving their trust and adoption towards electronic banking by making them aware of the fast and improved banking services through electronic banking and the challenges they may face. The findings of the study are to act as an eye opener to those who make policies in the banking industry by reflecting how electronic banking influences the profitability of commercial banks. This knowledge acts as a guide for them to come up with policies and practices that encourages adoption of electronic banking.

The study is to allow researchers and scholars to use the study for reference. They are to gain knowledge of electronic banking and form the basis upon which further research will be done.
The management in the banking industry is to benefit from the study by shedding light on the forces from the external environment that influences the commercial banks to encourage adoption of electronic banking in order to attract and retain customers and be able to withstand the prevailing competition. The contributions of the study are to influence the government to come up with policies and strategies that encourages the use of electronic banking.

1.6 The scope of the study

The study was limited to the 44 commercial banks that are registered in Kenya. The research focused on electronic banking and the financial performance of the commercial banks during the period 2011 to 2015. The study examined the financial performance of commercial banks before and after the introduction of e-banking by comparing ATM banking, mobile banking, internet banking, Debit/credit card banking and the profitability.

1.7 Limitations and delimitations of the study

The study faced some limitations. Some questionnaires were not answered since some of the respondents felt that, filling the questionnaire was wastage of time. This problem was reduced by extending the time limit within which they were to be filled. Some respondents were not able to fill the questionnaires due to the fear of releasing sensitive bank information that may expose the bank to insecurity. Respondents were assured that the data collected was meant for academic purpose and was not going to be released to unauthorized persons.
1.8 Assumptions of the study

In the study there was cooperation and honesty of the respondents to the questionnaires. The data collection methods were effective and efficient without influencing responses from participants. The questionnaires revealed the most important effect of e-banking on the financial performance of commercial banks.
CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Chapter two provides an overview of electronic banking and the financial performance of commercial banks, discusses e-banking theories, empirical findings by previous researchers on e-banking and the financial performance of commercial banks and the factors that determine the financial performance of commercial banks. The chapter also provides the analysis model, the summary of the chapter, identifies the knowledge gap and shows the conceptual framework of the study.

2.2 Theoretical review

Different theories were used in this section to explain electronic banking and the financial performance of commercial banks such as; technological acceptance model, the theory of planned behavior and the consumer internet banking model. The chapter also discusses empirical findings on electronic banking and the financial performance of commercial banks in Kenya showing the knowledge gap by summarizing the literature review.

2.2.1 Technology acceptance model

In their study Davis, Bagozzi and Warshaw (1989), used the technology acceptance model (TAM) to describe how users come to use and accept technology. The decision of users on when and how to use technology is influenced by perceived usefulness (PU) and perceived ease of use (PEOU). Davis et al (1989) explained perceived usefulness as the extent into which one believes there would be improvement of job performance as a result of use of improved technology. According to Ezzi (2014), perceived ease of use is the extent into which one would be free from
effort as a result of using a particular system. In their study Davis et al (1989) discovered that, information system that is much easier to use is more likely to influence a positive attitude and the intention to use in order to enhance performance. Perceived usefulness affects attitude towards acceptance of information system which is also affected by the ease of use. Despite ease of use determines acceptance and adoption of information system, it may not explain consumers behavior to adopt internet banking.

2.2.2 The Theory of Planned Behavior

The Theory of Planned Behavior (TPB) was proposed by ajzen(1983) and was used to predict human behavior. The theory suggests that intention to engage in a behavior determines an individual’s behavior (Ajzen, 1991). If one intends to use electronic banking the degree to which the person may favor or unfavor the use of e-banking is the attitude in consideration of the outcomes of its use. Subjective norm is another contributing factor that may affect people’s intention towards using electronic banking.

Subjective norms is an individual’s belief regarding important others approval or disapproval of the use of electronic banking. It relates to the persons belief about what important people to the person would think if he or she should use electronic banking. Perceived behavioral control is the perceived likelihood that various events would occur that would encourage or discourage the use of electronic banking this includes past experience as well as expected impediments and obstacles. Teo (2000) employed (TPB) and discovered that benefits of electronic banking have encouraged its increased use in the banking sector. Previous studies on (TPB) suggested that more valuables need to be used to increase predictability.
2.2.3 Consumer Internet Banking Model (CIBM)
Researchers on electronic banking have already discovered the importance of perceived privacy and security. Users of electronic banking fear to provide private information on internet because they do not trust the service providers (Ezzi, 2014). Researchers have already noted consumers concern regarding security, trust and privacy. Experienced users on the security measures employed on the internet have already identified security as the major factor that limits the use of electronic banking.

2.2.4 Innovation Diffusion Theory (IDT)

Rogers (1983) discovered the process of technological diffusion is dictated by uncertainty reduction behavior. The theory is useful to the commercial banks, and the Central Bank since it helps them to encounter electronic banking adoption uncertainties by seeking information from their employees and customers. Taylor (1995) observed that relative advantage determines technological diffusion. Commercial banks can use this theory to know that adoption to electronic banking fits customers practices. This is because they can carry out banking transactions anytime and anywhere without any need to visit the bank premises. Complexity can be encountered by educating the public on how to use electronic banking.

2.3 Determinants of bank performance

According to Ngango et al (2015), the determinants of bank performance can be classified into internal and external factors. Variables that can be controlled by the bank form the internal factors and they differ from one bank to the other. Variables beyond the control of the bank form the external factors such as; gross domestic product, inflation, interest rate and political instability among others.
Capital adequacy are own funds that act as a buffer by absorbing likely losses due to market risk, operational risk or credit risk. Capital adequacy protects the bank debtors because deposits are prone to bank runs. A bank with the essential capital creates a positive image to the public attracting more depositors which enables the bank to invest in risky but profitable ventures hence maximizing its financial performance (Mugondo, 2016). This also allows the bank to be in a position to service during financial crises.

Asset quality can also be referred to as loan quality. The assets of a bank include fixed assets, current assets, and the loan of a bank which is the major asset. The major factor that affects the asset quality in a bank is the quality of loan portfolio and the credit administration. Loans being one of the major bank assets carry the greatest amount of risk to their capital. The ratio of nonperforming loans to total loans is used as an indicator for asset quality. When this ratio is low, the better the bank performance (Ongore and Kusa, 2013).

According to Asia (2015), management efficiency can be assessed by looking at the ability of management to exploit its resources, to achieve the set goals by minimizing costs and maximizing benefits. Cost per unit of money lent is one of the most important ways of evaluating management efficiency. Management is a qualitative aspect that refers to management style, systems and policies in place and competence and quality of staff. He also discovered in his study that management of liabilities to be the most important factor that determines bank performance.
The earning ability of a bank is determined by the fee that it charges for its services and the interest earned on its assets with loans as its major asset. Interest paid on its liability is the major expense. Excessive profitability in banks reflects excessive risk while unprofitable commercial banks risk insolvency (Dang, 2011). Poor management may lead to loan losses exposing the bank to a high level of risk. The major indicators of profitability are returns on assets, return on equity, gross margin and earning spread ratio (Ogare, 2013). Banks that make a reliable profit are in a better position to withstand the challenge of economic recession.

According to Mugondo (2016), management of liabilities is one of the most important factors that affect bank performance. Liquidity is the degree to which commercial banks are able to meet their obligations when they fall due. According to CBK (2013) to enhance the liquidity level of commercial banks, they are expected to keep a certain percentage of their total deposits to meet their customers need on demand. This creates confidence among the bank customers because they are accessible to their deposits on demand which helps to attract customers from other financial institutions.

There is a positive relationship between liquidity and the financial performance of commercial banks however, during the time of economic recession commercial banks increase their holdings to safeguard themselves against risks leading to a negative correlation (Mulewa, 2015). The most common financial ratios that reflect liquidity level of commercial banks are customers deposits to total assets and total loan to customer deposits.

Some of the economic activities carried out by the commercial banks include; lending, borrowing, selling of assets pledged for securities and other transactions that involve foreign exchange.
These transactions expose the commercial banks to market risks, interest rate risk and commodity price risk that may adversely affect their financial performance (Ngango, 2015). Commercial Banks with a good credit management are in a better position to maximize their financial performance.

2.4 Empirical review

According to Munyocho (2015) study on relationship between banking technologies and financial performance of commercial banks in Kenya, commercial banks should continue investing in ICT because of its positive influence on the their performance. He identified credit cards to have a major impact on profitability of commercial banks in Kenya. In their research Ngango, Mbabazize and Shukla (2015) analyzed electronic banking and financial performance of commercial banks in Rwanda and found that, e-banking has a great impact on performance.

This is because it increased the profitability, return on assets, return on investment, return on equity and loans, improves bank management quality, increase bank assets and promotes bank growth and expansion. However, a few challenges were identified in the study that limited the use of e-banking such as: network failures, inadequate skills and security issues which posed a great threat to confidentiality and integrity of bank information.

In their research Kingoo and Aduda (2012) analyzed on the effect of electronic banking on the financial performance of commercial banks in Kenya and discovered that there is a strong positive relationship. They drew the following conclusion in their findings: electronic banking has made the banking industry to be more productive and effective: adoption of e-banking has enhanced the fortune of the Kenyan commercial banks that is achieved from the charges obtained on the use of credit cards and ATMs: e-banking gives a 24 hours service to the bank clients.
improving the customer relationship: Customers accessibility to their accounts is no longer limited to the working hours.

They concluded in their study that, e-banking has made banking transactions easier by bringing services closer to its customers improving the banking industry performance. According to a study by Fridah (2013), although electronic banking has enhanced banking efficiency, it is limited to the downlink and uplink speed of the ICT infrastructure in the country and banks can only get the best of e-banking should IT network and infrastructure be improved.

She suggested that: banks should focus in terms of their needs and use the right technology to achieve goals other than acquire technology for the sake of it: in order to remove avoidable costs of implementing electronic banking there is need for the government participation in ensuring focused telecommunication industry. Other suggestions: the Central Bank of Kenya should set the required standards to be followed by the commercial Banks in Kenya in order to avoid making Kenya a dumping ground for the outdated technological infrastructure: both the government and the banking sector should invest on education of Kenyans on the uses and benefits of IT.

This would encourage the society to accept and adopt new technology: there is customer literacy of electronic banking in the country as infrastructure information technology in not satisfactory: people make regular use of other electronic banking services but are not much informed about how to get advantage from internet and mobile banking: the government should formulate and enforce policies in order to control and limit the fraud and security risks associated with e-banking which will enhance the growth of e-banking and performance.
In the study by Wesutsa (2012) it was discovered that, adoption of ICT by the commercial banks in Kenya improved the liquidity and the asset quality of commercial banks, led to reduced costs, increased efficiency and improved performance. He discovered ICT had not improved the capital adequacy of the organizations to a great extend but commercial banks are adopting ICT to improve their operations and market coverage in order to remain competitive. He suggested for banks to successfully cope with challenges of ICT, they should have the knowledge of the types of changes expected in ICT and the demography.

Banks that are well informed make maximum benefits from the opportunity in electronic banking by making sound decisions on how they can use the ICT. According to the study by Rothare (2013), on impact of information technology on the performance of Tunisian banks it was found that, information technology led to reduced costs and improved performance of commercial banks. According to the study by Kariuki (2011) on the relationship between the level of technological innovation and financial performance of commercial banks in Kenya, ATM technology is the most available technology when online account opening is rarely used. This revealed that Kenyan banks are at initial stages of adopting technological innovations. The study recommends that for banks to be highly competitive, they need to employ modern technological innovations such as internet based banking and online account opening to a great extent.

According to the study by Rono (2015), on determinants of electronic banking and performance of commercial banks in Kenya it was discovered that, most of the commercial banks in Kenya have invested on e-banking applications with a positive impact of improved efficiency and performance.
He discovered that e-banking has improved the financial performance in the banking industry and customers convinience by allowing customers to carry out banking transactions anytime and anywhere.

In their research Kadzo and Wafula (2015), analyzed on the effect of internet banking on financial performance of commercial banks in Kenya and came up with the following findings: internet reduce transaction costs and attracts customers to the bank: cheaper transaction costs can lead to extend client base because many potential customers seek value of their money: e-banking enhances customer royalty and sense of security as opposed to over the counter banking because customers are able to access banks’ services round the clock which creates a strategic advantage against competitors: Internet banking saves time leading to increased efficiency.

According to the study by Njogu (2014), it was discovered that there is a strong positive relationship between electronic banking and the financial performance of commercial banks in Kenya. Electronic banking minimized operation costs of the commercial banks, improved their speed in service provision, enhanced accessibility to a wider market and is convenient to customers. In the findings of the study, commercial banks were encouraged to adopt to e-banking as this would influence their financial performance.

According to Diergaardt (2013) study on effect of e-banking on commercial banking sector performance a case study of Namibia, some challenges were identified that need to be overcome by the developing countries in order to achieve the advantages of e-banking. For the developing countries to adopt global technology for their local requirements, they first need to develop an adequate level of infrastructure and human capacity building, the ability to strengthen public support for e-finance, ability to create necessary level of regulatory and institutional framework.
due to lack of security, trust and privacy and develop the ability to mainstream small and medium scale enterprises towards e-banking.

### 2.4.1 Internet banking and the financial performance of commercial banks

According to Kombe and Wafula (2015), internet banking is the delivery of bank services and products to customers by the use of the internet channel. They identified e-banking as the key to banks success since it catalysis reduction in overhead costs such as staff and rent allowing banks to penetrate financial markets without their physical presence leading to improved performance.

According to Ngugi (2013) internet banking reduces bank costs, staffing levels, increases commission income and is convenient in addressing ease of use and customer satisfaction but it has a weak positive influence on the financial performance of commercial banks in Kenya.

In their study Mateka, Gogo and Omagwa (2016) discovered that, internet banking to be the key driver of cost management in banks and proposed that the commercial banks should encourage internet banking as it would enhance banks growth and save time for the customers. In their study Arisa and Muturi (2015) revealed that, despite internet banking was error free, efficient and accessible 24 hours, it does not have a significant impact on the financial performance of commercial banks in Kenya since it affects at an extend less than 51.3 percent. This is associated with poor network connections in most parts of the country, inadequate internet enabled gadgets and illiteracy but it’s expected to benefit banks in the future.

According to Munyocho (2015) it was found that, banks that had adopted internet banking gave them a competitive advantage over other banks since it increased their efficiency, speed and accuracy making it to have a strong positive correlation coefficient (Pearson correlation
coefficient $r = 0.571$ ($p = 0.004$) with the financial performance of commercial banks in Kenya.

### 2.4.2 Mobile banking and the financial performance of commercial banks

According to Momanyi (2015), mobile banking is the latest development in e-banking that has resulted in increased number of banking service users, due to its convenience to customers with busy lives to do their banking anytime and anywhere. It attracts customers in remote areas and getting banking services to the unbanked which increases the number of customers, transactions and profitability in commercial banks. The research by Mabwai (2016) revealed that, the higher the number of mobile banking transactions, the capital adequacy ratio, the larger the market share and the number of mobile banking customers, the higher the financial performance.

The Central Bank of Kenya annual report (2016) showed that when the total assets in the commercial banks were Ksh.3,199,336 billion in the year 2014, the total income was Ksh.418,698 billion while in 2015 they were Ksh.3,492,643 and Ksh.456,810 billion respectively. This proves that, a bank with more assets is able to engage mobile banking and engage in a higher financial performance.

Investigation by Munyoki (2015) it was found that, mobile banking had a very high positive effect on the financial performance of commercial banks in the last five years. In his findings he concluded that, banks that are encouraging the use of mobile banking have increased the number of customers and improved their financial performance. According to Mwange (2013), mobile banking was identified as a key channel in the global banking financial industry as it offers real time access to products and services, able to reach those in remote areas and the unbanked. The study showed a significant positive relationship between mobile banking and the financial performance of the commercial banks reflecting a direct proportional increase in ROA.
2.4.3 ATM and financial performance of commercial banks

In their research Kamau and Oluoch (2016) discovered that, there was a significant positive relationship between the adoption of ATM and performance of commercial banks, since a unit change in the use of ATM increased commercial banks performance by 0.051. ATMs reduced operational costs which increased the commercial banks’ profits and saved the time spend by the customers as they queued waiting to be served. They suggested that commercial banks should be able to improve the ATM system so that it would be able to offer all the banking services to the customers.

According to research by Wachira (2013) it was found that, despite ATM was a very expensive investment in the banking industry, it is a very important investment because of its merits such as: reduced congestion in banking halls, convenient for the customers to access banking services at any time and is user friendly. The mean score of his observation in this section was 3.36 which served as evidence that ATMs play a positive significant role in the financial performance of the commercial banks in Kenya. He suggested that there was a need for the bank management to be conducting frequent system checks in order to control the breakdown of the ATM machines.

In their research Gichungu and Oloko (2015) discovered that, ATM banking has led to a drop in customers for brick and motor branches towards their smart phones which in the long-run will allow banks to cut costs, reduce staffing giving commercial banks an opportunity to enhance profitability. There was a steady increase in ATM banking during the period of their study from 2009 to 2013 which corresponded with an increase in the financial performance of commercial banks in Kenya. They suggested in their study that the commercial banks should increase the
number of ATM stations in order to reach all the potential clients that would reduce time wasted when customers are served in the banking halls.

According to the supervision annual report CBK (2015), the number of ATMs increased from 2613 in year 2014 to 2718 in the year 2015. The total income decreased from Kshs 141145 m in December 2014 to Kshs 134017 m in December 2015. Expenses increased from Khs 277522m to Kshs 322792 m. However, the efficiency score increased by 972 when the total deposits were compared with the number of staff in the years 2014 and 2015. This report showed a significant positive relationship between ATM banking and the financial performance of commercial banks in Kenya.

2.4.4 Credit / Debit cards and the financial performance of commercial banks.

According to Munyocho (2015), there was a strong positive relationship between debit \ credit cards and the financial performance of the commercial banks in Kenya. He discovered that debit cards improve customers’ efficiency and flexibility without any need to visit the bank halls while the credit cards have been adopted by banks to increase income, profit and reduce credit and liquidity risks.

Debit cards according to Wachira (2013) , activates an electronic funds transfer process fastening customers shopping payments instead of handling cash and cheques without any need to visit the bank halls which saves the customers time. Debit cards can even be used after the banking hours which increase the bank productivity. Credit cards were discovered to be user friendly because they are convenient to use, easy to use and carry.

It was found in his study that customer assisted technology had a significant positive influence on the financial performance of commercial banks. According to Ogare (2013), debit cards and
credit cards are affordable to both the banks and the customers since they need less maintenance costs during the acquisition and when in operation, making them attractive, increasing their usage and bank profits.

Debit\credit cards enhance electronic funds transfer enabling customers to access their accounts outside working hours enhancing bank operations and performance. According to Maiyo (2013), there was an increasing trend for fees and commission from debit and credit cards between the years 2009 and 2012 that was associated with the increased use of the debit and credit cards. The fees and commission for the years was Kshs 40,811.37 in year 2009, Kshs 63,685.18 in year 2010, Kshs 86,127.67 in year 2011, Kshs 113,100.51 in year 2012 which reflected a significant positive relationship between debit and credit cards and the financial performance of commercial banks in Kenya.

2.4.5 Summary of Literature review

Table 2.1: Summary of literature review

<table>
<thead>
<tr>
<th>AUTHOR</th>
<th>YEAR</th>
<th>TOPIC</th>
<th>FINDINGS</th>
<th>GAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kariuki</td>
<td>2011</td>
<td>Relationship between the level of technological innovation and financial performance of commercial banks in Kenya.</td>
<td>A strong positive relationship was discovered.</td>
<td>Need for further research to be done in the same topic in order to fill the gap.</td>
</tr>
<tr>
<td>Kingoo &amp; Aduda</td>
<td>2012</td>
<td>Relationship between e-banking and the financial performance of commercial banks in Kenya</td>
<td>E-banking has made the banking industry to be more productive</td>
<td>Investment in ICT must be accompanied by investment in skills and innovation</td>
</tr>
<tr>
<td>Author</td>
<td>Year</td>
<td>Title</td>
<td>ICT Impact</td>
<td>Recommendation</td>
</tr>
<tr>
<td>-------------</td>
<td>------</td>
<td>----------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Wesutsa</td>
<td>2012</td>
<td>The impact of ICT on the performance of the commercial banks in Kenya</td>
<td>ICT improved liquidity and asset quality of commercial banks in Kenya</td>
<td>For banks to successfully cope with ICT challenges, they must understand the nature of changes that revolve around them in ICT innovation and demography.</td>
</tr>
<tr>
<td>Maiyo, J.</td>
<td>2013</td>
<td>The effect of e-banking on the financial performance of commercial banks in Kenya</td>
<td>Increasing trend of fees and commission from debit and credit cards in commercial banks Kenya</td>
<td>Need for the government to come up with a policy that will guide against fraud and risk involved</td>
</tr>
<tr>
<td>Mwange, J.A.</td>
<td>2013</td>
<td>Impact of mobile banking on the financial performance of Commercial Banks in Kenya</td>
<td>A significant positive relationship between mobile banking and the financial performance of Commercial Banks.</td>
<td>Banks to reduce risk perceived by their customers.</td>
</tr>
<tr>
<td>Ngugi, T.M.</td>
<td>2013</td>
<td>Effects of online banking</td>
<td>Internet banking</td>
<td>Banks to control the...</td>
</tr>
<tr>
<td>Authors</td>
<td>Year</td>
<td>Title</td>
<td>Key Points</td>
<td>Conclusion</td>
</tr>
<tr>
<td>------------------</td>
<td>------</td>
<td>----------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Wachira, E. W.</td>
<td>2013</td>
<td>Effects of technological innovation on financial performance of Commercial Banks.</td>
<td>ATMs, Debit / Credit cards have a positive significant influence on financial performance of commercial Banks.</td>
<td>Bank management to regularly conduct system control to avoid ATMs breakdown.</td>
</tr>
<tr>
<td>Fridah</td>
<td>2013</td>
<td>Effect of proliferation of e-banking on the financial performance of commercial banks in Kenya.</td>
<td>E-banking has enhanced efficiency</td>
<td>Banks can only get the best out of IT should network and infrastructure be improved.</td>
</tr>
<tr>
<td>Rodhare</td>
<td>2013</td>
<td>Impact of information technology on financial performance of commercial banks.</td>
<td></td>
<td>The banks must</td>
</tr>
<tr>
<td>Author</td>
<td>Year</td>
<td>Title</td>
<td>Finding</td>
<td>Implication</td>
</tr>
<tr>
<td>-------------</td>
<td>------</td>
<td>----------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Diergaardt</td>
<td>2013</td>
<td>Performance a case study of Namibia</td>
<td>Discovered a positive relationship between e-banking and financial performance.</td>
<td>Identified that developing countries need to meet some challenges to achieve the advantages of e-banking.</td>
</tr>
<tr>
<td>C B K</td>
<td>2015</td>
<td>Bank supervision annual report</td>
<td>Efficiency score increased by 972</td>
<td>Need to reduce total costs</td>
</tr>
<tr>
<td>Arisa &amp; Muturi</td>
<td>2015</td>
<td>Effects of internet banking on financial performance of commercial banks Kenya</td>
<td>Internet banking does not have a significant impact on the financial performance of</td>
<td>Internet banking remains underutilized, there is need to educate users on merits of internet.</td>
</tr>
<tr>
<td>Kombe and Wafula</td>
<td>2015</td>
<td>Effect of internet banking on financial performance of commercial banks</td>
<td>Internet banking reduces costs and improves performance</td>
<td>Application software used should be user friendly</td>
</tr>
<tr>
<td>Munyocho</td>
<td>2015</td>
<td>Relationship between banking technologies on the financial performance of Commercial Banks in Kenya.</td>
<td>Positive relationship between debit / credit cards on financial performance. There is improved efficiency, speed and accuracy</td>
<td>Banks to encourage customers to use debit and credit cards and use of internet banking</td>
</tr>
<tr>
<td>Momanyi, D. H.</td>
<td>2015</td>
<td>Effects of mobile banking on profitability of Commercial banks in Kenya.</td>
<td>Mobile banking has positively influenced the financial performance of commercial Banks in the last five years.</td>
<td>To accelerate adoption of mobile banking banks to partner with Telecommunication players.</td>
</tr>
<tr>
<td>Munyoki, K. S.</td>
<td>2015</td>
<td>Effects of mobile banking on financial performance of commercial Banks in Kenya.</td>
<td>Mobile banking has greatly increased the bank revenue in the last five years.</td>
<td>Banks to lower the charges and reduce time taken.</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Year</td>
<td>Summary</td>
<td>Key Findings</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>------</td>
<td>---------</td>
<td>--------------</td>
<td></td>
</tr>
<tr>
<td>Ngango, Mbabazzize &amp; Shukla</td>
<td>2015</td>
<td>E-banking and performance of commercial banks in Rwanda</td>
<td>E-banking increased ROA, ROE, profitability and improved management quality. E-banking posed a great threat to confidentiality and integrity in the banking industry.</td>
<td></td>
</tr>
<tr>
<td>Kadzo &amp; Wafula</td>
<td>2015</td>
<td>Effect of internet banking on financial performance of commercial banks in Kenya.</td>
<td>E-banking increased efficiency. The application software used for accessing banking services online should be simple and user friendly.</td>
<td></td>
</tr>
<tr>
<td>C B K</td>
<td>2016</td>
<td>Bank supervision annual report</td>
<td>Income grew by 9.1%. Bank management to encourage increased use of ICT.</td>
<td></td>
</tr>
<tr>
<td>Kamau and Oluoch</td>
<td>2016</td>
<td>Relationship between financial innovation and commercial bank performance in Kenya</td>
<td>Significant positive relationship between ATM adoption and financial performance of commercial. Commercial banks to improve ATM system in order for them to offer all banking services.</td>
<td></td>
</tr>
</tbody>
</table>
Kenya being a developing country is in its early stages of e-banking and turning out to be a dumping ground for outdated technological infrastructure from the developed countries. This has led to customer illiteracy of electronic banking in the country as infrastructure information technology is not satisfactory forcing people to make regular use of e-banking when they are not well informed. Most of the studies revealed the challenges that are faced in e-banking such as inadequate skills, network failures and security issues. According to Fridah (2013), banks can only get the best of e-banking should IT network and infrastructure be improved. The findings show that e-banking is subject to certain limitations that may negatively affect the financial performance of commercial banks.

2.5 Knowledge gap

In most of the previous studies on e-banking and financial performance of commercial banks they have given either a positive or a negative relationship. The main purpose of this study is to fill this gap by examining e-banking and the financial performance of commercial banks in Kenya.
2.6 Conceptual framework

The conceptual framework is a figure showing the relationship between the dependent variables and the independent variables.

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Dependent variables</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ATM banking</strong></td>
<td></td>
</tr>
<tr>
<td>- Number of ATMs installed</td>
<td></td>
</tr>
<tr>
<td>- Number of active users of ATM banking</td>
<td></td>
</tr>
<tr>
<td>- Number of ATM transactions</td>
<td></td>
</tr>
<tr>
<td><strong>Internet banking</strong></td>
<td></td>
</tr>
<tr>
<td>- Number of internet banking transactions</td>
<td></td>
</tr>
<tr>
<td>- Number of customers using internet banking</td>
<td></td>
</tr>
<tr>
<td>- Value of fees and commission from internet banking</td>
<td></td>
</tr>
<tr>
<td><strong>Mobile banking</strong></td>
<td></td>
</tr>
<tr>
<td>- Number of active users of mobile banking</td>
<td></td>
</tr>
<tr>
<td>- Number of the banks mobile banking transactions</td>
<td></td>
</tr>
<tr>
<td>- Capital investment in mobile banking measured in Kenyan shillings</td>
<td></td>
</tr>
<tr>
<td><strong>Debit/Credit cards banking</strong></td>
<td></td>
</tr>
<tr>
<td>- Number of Debit/Credit cards issued by banks</td>
<td></td>
</tr>
<tr>
<td>- Value of fees and commission from debit and credit cards</td>
<td></td>
</tr>
<tr>
<td>- Number of Debit/Credit cards users</td>
<td></td>
</tr>
<tr>
<td><strong>Financial Performance of commercial banks</strong></td>
<td></td>
</tr>
<tr>
<td>- Return on assets</td>
<td></td>
</tr>
<tr>
<td>- Return on equity</td>
<td></td>
</tr>
<tr>
<td>- Net profit</td>
<td></td>
</tr>
</tbody>
</table>

Figure 2.1 Conceptual framework

Source: Researcher
CHAPTER THREE:

RESEARCH METHODOLOGY

3.1 Introduction

This chapter contains the methodology that was used in the research in order to gather the relevant information from the study. It contains the following subsections; the research design, the target population, sampling procedure, data collection method and instruments, instrument validation and reliability and the data analysis techniques and presentation.

3.2 Research design

A descriptive research design was employed in the study because it will not only show the characteristics of individual banks but of the whole sample. The study was conducted by surveying the registered commercial banks in Kenya. The descriptive research design is part of quantitative research design that will show the relationship between an independent variable and another dependent variable (Salaria, 2012).

This method had the following advantages when carrying out the research: able to extract data that was near to the exact attributes of the larger population, involves less time and low costs, standardized questions were used that involved both open ended and closed ended questions providing uniform definitions to all the subjects who answer the questionnaires hence avoiding bias.

3.3 Target population

The target population of the study consisted of the 44 commercial banks in Kenya registered with the Central Bank of Kenya as at December 2015. The study comprised of a total number of
44 respondents because in each of the 44 commercial banks, the person in charge of electronic banking will be picked as a respondent.

3.4 Sampling procedure

The census sampling procedure was used since there were only 44 commercial banks in Kenya as at 31st December 2015 which were to be easily accessible from their Nairobi offices. The census sampling involved the whole population because the number of banks was small and it also eliminated the sampling error.

3.5 Data collection method and instruments

The data that was used in the study was collected from both primary and secondary sources that covered a period of five years from year 2011 to 2015. The questionnaires were used as a source of primary data and had both closed and open ended questions and were administered through a drop and later pick method. Questionnaires were a reliable instrument in data collection because they were cheap, had standardized answers that easened the work of compiling the data.

Closed ended questions collected quantitative data because they had predetermined answers while the open ended questions collected qualitative data because the respondents’ were free to answer the questions. Secondary data was collected by the use of a data collection sheet. This data was from the annual report published by the Central Bank of Kenya, annual report of the commercial banks, the websites of the commercial banks and the Central Bank of Kenya website. These sources collected enough and reliable secondary data for the study that were to be used to enrich the analysis from primary data.
3.6 Instrument validation and reliability

3.6.1 Validity

Validity has been defined by Bolarinwa (2016) as the degree to which an instrument measures what it’s meant to measure. To improve the validity of the questionnaire the researcher consulted experts in the field of study especially the supervisor who assessed the relevance of its contents and facilitate the revision and modification of the questionnaire.

3.6.2 Reliability

According to Heale and Twycron (2015), reliability is the degree to which the research instrument gives the same results after consistent trial. Reliability was checked by pre-testing the questionnaire using four e-banking managers of commercial banks. The information received helped to identify the need for any modification thus ensuring that the research instrument measured what it was intended for, improving the reliability of the questionnaire.

3.7 Data analysis and presentation

Data collected was analyzed by using both descriptive and inferential statistics procedures. Descriptive statistics such as mean score, frequencies and percentages for each variable were calculated and tabulated using frequency distribution tables. In order to test the relationship between the variables, the inferential test including the Pearson product moment correlation and regression analysis was used. Questionnaires were edited to ensure that data is consistent with the study. Then data was coded, that is, assigning dummy names to each study variable which in turn was assigned numerical value that could be recognized and analyzed by a computer. Data entry was the next step and then analysis using Statistical Package for Social Sciences to get the desired output.
3. 8. Analytical model

To establish the correlation of total financial performance, regression analysis was adopted using Ordinary Least Square Method where the level of financial performance was taken as the dependent variable and regressed against the chosen independent variables. The Ordinary Least Square selects the regression coefficients that result in the smallest sums of the squared distances between the observed and the predicted values of the dependent variables. The coefficient obtained thus gives the indication of a unit change in the value of the dependent variable as a result of a unit change in any of the independent variables.

The regression model that was used was of the form

\[ Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + e \]

\( Y \) shows total financial performance reflected by return on assets and return on equity
\( x_1 \) shows total score on ATM banking reflected by the number of ATMs installed, number of active users of ATM banking and number of ATM transactions.
\( x_2 \) shows total score on internet banking reflected by the number of internet banking transactions, number of customers using internet banking and value of fees and commission from internet banking.
\( x_3 \) shows total score on mobile banking reflected by the number of active users, number of mobile banking transactions by the bank and capital investment in mobile banking (Kshs)
\( x_4 \) shows total score on Debit/Credit card banking reflected by the number of Debit/Credit cards issued, value of fees and commission from Debit/Credit cards and the number of Debit/Credit card users.
\( \beta_0 \) is the gradient of the regression measuring the amount of change in Y associated with a unit change in x.

\( e \) is the error
Table 3.1 Operationalization and measurement of variables

<table>
<thead>
<tr>
<th>TYPE OF THE VARIABLE</th>
<th>NAME OF THE VARIABLE</th>
<th>INDICATOR</th>
<th>MEASUREMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEPEDE NT V ETABLE</td>
<td>FINANCIAL PERFORMANCE</td>
<td>RETURN ON ASSETS</td>
<td>Profit before tax and interest x 100 Total assets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>RETURN ON EQUITY</td>
<td>Net profit before tax and interest x 100 Total equity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NET PROFIT</td>
<td>Net profit after tax and interest</td>
</tr>
<tr>
<td>INDEPENDENT VARIABLES</td>
<td>ATM BANKING</td>
<td>Number of ATMs installed</td>
<td>Total increase in number of ATMs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number of active users of ATM banking</td>
<td>Total increase in number of users of ATM banking</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number of ATM transactions</td>
<td>Total increase in number of ATM transactions</td>
</tr>
<tr>
<td></td>
<td>INTERNET BANKING</td>
<td>Number of internet banking transactions</td>
<td>Total increase in number of internet banking transactions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number of customers using internet banking</td>
<td>Total increase in number of customers using internet banking</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Value of fees and commission from internet banking</td>
<td>Total increase in value of fees and commission from internet banking</td>
</tr>
<tr>
<td></td>
<td>MOBILE BANKING</td>
<td>Number of active users of mobile banking</td>
<td>Total increase in number of users of mobile banking</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number of mobile banking transactions by banks</td>
<td>Total increase in number of mobile banking transactions by banks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Capital investment in mobile banking measured in Kenyan shillings</td>
<td>Total increase in capital investment in mobile banking measured in Kenyan shillings</td>
</tr>
</tbody>
</table>
### DEBIT/CREDIT CARDS BANKING

<table>
<thead>
<tr>
<th></th>
<th>Number of Debit/Credit cards issued by banks</th>
<th>Total increase in number of Debit/Credit cards issued by banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value of fees and commission from debit and credit cards</td>
<td>Total increase in value of fees and commission from debit/credit cards</td>
<td></td>
</tr>
<tr>
<td>Number of debit/credit card users</td>
<td>Total increase in number of debit/credit card users</td>
<td></td>
</tr>
</tbody>
</table>

(Source, Author 2018)

#### 3.9 Ethical considerations

There are some ethical considerations that were put into practice during and after the research process. Most of the information that was required for this study was considered by the commercial banks to be private and confidential. In this regard, any private information that was given by the respondents for this study was treated with the desired confidentiality and was purposely meant for the academic work and it did not get into the hands of the public. The respondents to the study were coded to protect their anonymity.
CHAPTER FOUR:

PRESENTATION, INTERPRETATION AND DISCUSSION OF THE FINDINGS

4.1 Introduction

The chapter presents a detailed data analysis on electronic banking and financial performance of commercial banks in Kenya. The findings were presented in form of figures and tables. The chapter utilized the use of the study objectives in analyzing the collected data. The objectives include; influence of internet banking, contribution of mobile banking, influence of ATM banking and the contribution of credit and debit cards on the financial performance of commercial banks in Kenya.

4.2 Response Rate

The questionnaires were administered to all the 43 commercial banks in Kenya out of which only 34 commercial banks responded. This lead to a response rate of 79.07% as shown in table 4.1

Table 4.1 Number of banks surveyed

<table>
<thead>
<tr>
<th>BANK RESPONSE</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>BANKS THAT RESPONDED</td>
<td>34</td>
<td>79.07%</td>
</tr>
<tr>
<td>BANKS THAT DID NOT RESPOND</td>
<td>9</td>
<td>20.93%</td>
</tr>
<tr>
<td>TOTALS</td>
<td>43</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Field Data 2018

4.2.1 Electronic Banking factors affecting the financial performance of the commercial Banks in Kenya

The major objective of the study was to examine on electronic banking and financial performance of the commercial Banks in Kenya. The electronic Banking factors included;
Internet Banking, Mobile Banking, ATM Banking and the Debit and Credit card Banking while the dependent variable (financial performance) contained the Return on Equity and the Return on Assets.

### 4.2.2 Electronic Banking Services

The study had to find out the levels of conformity on various issues of electronic Banking services. A likert scale was employed to test on various issues in relation to the different Banking services. From the findings below, it was indeed noted that all the commercial Banks that responded, employed the electronic banking services in study at their various banking stations.

Tests run on Internet Banking by use of a likert scale suggested that most of the banks were in agreement that the more the number of internet banking transactions the better the financial performances of the Banks. This also leads to increased fees and commissions from internet transactions and reduced costs and expenses. Factors attributed to internet banking in commercial banks had an average volume of 2901.32 with a standard deviation of 2931.595, a maximum of 16500 and a minimum of 40.

Mobile Banking services were greatly employed by most of the banks. From the likert scale it was asserted that the use of mobile banking was more convenient to the customers in that it resulted to a decrease in the labour and operational costs and leads to increase in the profitability and efficiency levels. This was also supported by the descriptive statistics that showed the factors relating to mobile banking having a mean of 5753.42 with a maximum of 18200, minimum of 740 and a standard deviation of 4870.287.
On the ATM Banking services, it was noted that, an increase in the ATM transactions reduced labour and operational costs with a mean of 1.735 and standard deviation of 0.932; it reduced paper work with a mean of 1.941 and standard deviation of 01.204. It reduced congestions in the Banking halls with a mean of 2.117 and standard deviation of 1.094 and that it also resulted to more time saving increased accuracy, profitability and efficiency with a mean of 1.824 and standard deviation of 1.16. A descriptive statistic carried on the factors relating to mobile banking indicated a mean of 3166.4 with a maximum of 19400, a minimum of 240 and a standard deviation of 3431.997.

Debit/ Credit Card Services were also found to be used by the banks. It was agreed that an increase in the Debit/ Credit Card Services increased revenue with a mean of 1.88 and standard deviation of 0.879; it reduced paper work with a mean of 1.705 and standard deviation of 1.059. It leads to retention of customers with a mean of 2.941 and standard deviation of 1.200 and that it also resulted to increased users and profits with a mean of 1.617 and standard deviation of 0.953. The descriptive statistic on the factors relating to Debit/ Credit Card Services showed a mean of 2403.20, a standard deviation of 1750.591, a maximum of 15100 and a minimum of 30.

According to table 4.2 below, it can be noted that mobile banking has the highest mean of 5753.42 followed by internet banking with a mean of 3166.42, ATM banking that has a mean of 2901.32 and lastly the Debit/Credit Banking that has a mean of 2403.20. Therefore Mobile banking has the highest number of customers compared to the other banking transactions.
Table 4.2 Electronic Banking services

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATM Trs</td>
<td>34</td>
<td>2901.32</td>
<td>2931.595</td>
<td>40</td>
<td>16500</td>
</tr>
<tr>
<td>Mobile Trs</td>
<td>34</td>
<td>5753.42</td>
<td>4870.287</td>
<td>740</td>
<td>18200</td>
</tr>
<tr>
<td>Internet Trs</td>
<td>34</td>
<td>3166.42</td>
<td>3431.997</td>
<td>240</td>
<td>19400</td>
</tr>
<tr>
<td>Dbt/Crdt card Trs</td>
<td>34</td>
<td>2403.20</td>
<td>1750.591</td>
<td>30</td>
<td>15100</td>
</tr>
</tbody>
</table>

Source: Field Data 2018

4.2.3 Financial Performance of commercial Banks in Kenya

Financial performance was measured using three variables, the return on equity (ROE) the return on assets (ROA) and the Net Profit. The mean log of ROE for the five years was 3.51 with a standard deviation of 1.641, a maximum of 8.31 and a minimum of 0.411 while that of ROA was 2.96 with a standard deviation of 0.995, a maximum of 8.51 and a minimum of 2.12. Net profit had a mean of 3.14 with a standard deviation of 0.763 and a minimum of 2.32 and a maximum of 8.

Table 4.3 Descriptive statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>logR0E</td>
<td>34</td>
<td>3.51</td>
<td>1.641</td>
<td>0.411</td>
<td>8.31</td>
</tr>
<tr>
<td>logROA</td>
<td>34</td>
<td>2.96</td>
<td>0.995</td>
<td>2.12</td>
<td>8.53</td>
</tr>
<tr>
<td>Net Profit</td>
<td>34</td>
<td>3.14</td>
<td>0.763</td>
<td>2.32</td>
<td>8.76</td>
</tr>
</tbody>
</table>

Source: Field Data 2018
4.3 Trend analysis

A trend analysis conducted on all the independent variables for the five years indicated that; Internet banking increased gradually from the year 2011 all the way to 2015. This was a clear indication that internet banking was being recognized and being accepted by the Kenyan commercial banks and the Kenyans as a way of transacting.

Mobile banking had the most interesting trend since it had a fast and gradual increase from 2011 up to 2012 and then it slowly increased to 2014 and then drastically increased all the way to 2015. The growth in mobile transacting can be related to the introduction of mobile banking services and products by various banks and other mobile and banking agencies like the airtel loaning services. Products includes; M-Shwari, KCB-Mpesa, Eassy loan by equity and many more being introduced by various banks. It is anticipated that the trend may continue the same way due to the convenience levels it has to the bank customers.

ATM Banking transactions increased progressively from 2011 to 2014 and then unexpectedly there was a drastic drop to 2015. This could have been due to the popularity of the mobile banking services and the introduction of banking agencies like KCB-Mtaani.

Debit/Credit banking transactions were seen increasing from 2011 to 2012 and then a slight decrease could be noted in 2013 and then a gradual increase all through to 2015.
4.4 Correlation Analysis

A correlation analysis was conducted on all the variables under study in order to find out their relationship to each other. Karl Pearson’s coefficient of correlation was used in determining the relationships. Results in table 4.4 showed that the financial measures (ROE, ROA and Net Profit) had a positive relationship.

All the independent variables had a positive and significant relationship with the ROA. Internet banking and mobile banking showed a positive and significant relationship with the Net Profits. The results also indicated that only one variable which is the ATM Banking transactions had a significantly positive relationship with the ROE. The other independent variables (Mobile transactions, internet transactions and the Debit and Credit card transactions) presented a positive...
but insignificant relationship with the ROE. A significant and positive relationship was also observed between the Debit/Credit card transactions and the ATM transactions.

In order to test for Multicollinearity, the Variance Inflation Approach was used and it was at a mean of 3.6 which is less than 10 hence indicating that there was no any Multicollinearity in between the variables.

Table 4.4 Correlation of independent and dependent variables

<table>
<thead>
<tr>
<th>Correlation of Financial Performance and Electronic Banking factors</th>
<th>ROE</th>
<th>ROA</th>
<th>Internet Trs</th>
<th>Mobile Trs</th>
<th>ATM Trs</th>
<th>Debit/Credit Card Trs</th>
<th>NET PROFIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE (Financial performance)</td>
<td>Pearson Correlation</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROA (Financial performance)</td>
<td>Pearson Correlation</td>
<td>.103</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet Trs</td>
<td>Pearson Correlation</td>
<td>.312</td>
<td>.536*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobile Trs</td>
<td>Pearson Correlation</td>
<td>.128</td>
<td>.687**</td>
<td>.231</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATM Trs</td>
<td>Pearson Correlation</td>
<td>.501*</td>
<td>.546*</td>
<td>.332</td>
<td>.020</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Debit/Credit Card Trs</td>
<td>Pearson Correlation</td>
<td>.232</td>
<td>.659**</td>
<td>.112</td>
<td>.014</td>
<td>.533*</td>
<td>1</td>
</tr>
<tr>
<td>NET PROFIT (Financial performance)</td>
<td>Pearson Correlation</td>
<td>0.456</td>
<td>.511*</td>
<td>.521*</td>
<td>.773**</td>
<td>.492</td>
<td>.020</td>
</tr>
</tbody>
</table>

Source: Survey Data 2018
4.5 Regression Analysis

A multivariate regression analysis was conducted in order to determine the relationship and the extent up to which the independent variables (internet transactions, Mobile transactions, ATM transactions and the Debit/ Credit cards transactions) affected the dependent variables.

Table 4.5 Regression Model summary

<table>
<thead>
<tr>
<th>FINANCIAL MEASURES</th>
<th>R</th>
<th>R-Squared</th>
<th>Adjusted R Squared</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>0.721a</td>
<td>0.688</td>
<td>0.559</td>
<td>0.6841</td>
</tr>
<tr>
<td>ROE</td>
<td>0.326a</td>
<td>0.277</td>
<td>0.167</td>
<td>0.9456</td>
</tr>
<tr>
<td>NET PROFIT</td>
<td>0.679a</td>
<td>0.630</td>
<td>0.445</td>
<td>0.3982</td>
</tr>
</tbody>
</table>

Source: Field Data 2018

a. Predictors: (Constant), (Internet transactions, Mobile transactions, ATM transactions and Debit/Credit Card transactions)

Table 4.5 shows the regression model summary used in the study. A correlation of 0.721 for ROA, 0.326 for ROE and 0.679 for Net Profit was established hence indicating that there was a positive relationship between the independent variables and the dependent. The R Squares of 0.688, 0.277 and 0.630 for the respective measures ROA, ROE and Net Profit indicates that the independent variable in the study were able to give information of up to 68.8%, 27.7% and 63.0% in relation to the dependent variables while the remaining 31.2%, 72.3% and 37% could not be explained in the study but could be explained using other variables outside the study.
4.5.1 ANOVA Test

The Analysis of Variance test was done to test on the significance of the model and it was found to be 0.0004 which is less the p of 0.05. p < 0.05, (0.0004) hence electronic banking has a significant effect on the financial performance of commercial banks in Kenya as shown in table 4.6 below.

Table 4.6 Variance Test

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean of Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>2759180.02</td>
<td>10</td>
<td>275918.002</td>
<td>5.31</td>
<td>0.0004</td>
</tr>
<tr>
<td>Residual</td>
<td>1246852.38</td>
<td>24</td>
<td>51952.1825</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>4006032.40</td>
<td>34</td>
<td>117824.482</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Field Data 2018

a. Predictors : (Constant), (Internet transactions, Mobile transactions, ATM transactions and Debit/Credit Card transactions)

b. Dependent Variable: Financial performance measures

4.5.2 Regression Coefficients

The results in table 4.6 below indicates that internet banking had a positive significant relationship with the ROA which was a measure of financial performance hence a unit increase in internet banking could increase the ROA by 3.850 and this was found to be significant since the p-value was less than 0.05 (0.042).
Mobile banking had a significantly positive relationship with the ROA since it had a p Value of 0.002 which is less the standard measure of 0.05 and therefore a unit increase in mobile banking could result to an increase in the ROA by 3.482. ATM banking transactions had a p Value of 0.000 which indicated a significantly positive result to the ROA and hence a unit increase in the ATM banking transactions could result to a 2.742 increase in the ROA. Debit/Credit banking transactions also depicted a positive relationship with the ROA with a p Value of 0.002. This implied that a unit increase in Debit/Credit banking transactions could lead to 1.757 increases in the ROA.

<table>
<thead>
<tr>
<th></th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-4.234</td>
<td>2.002</td>
<td>-3.561</td>
<td>0.042</td>
</tr>
<tr>
<td>Internet Trs</td>
<td>2.750</td>
<td>0.056</td>
<td>0.687</td>
<td>4.432</td>
</tr>
<tr>
<td>Mobile Trs</td>
<td>3.482</td>
<td>0.083</td>
<td>0.312</td>
<td>3.938</td>
</tr>
<tr>
<td>ATM Trs</td>
<td>2.742</td>
<td>0.576</td>
<td>0.659</td>
<td>4.783</td>
</tr>
<tr>
<td>Debit/Credit Trs</td>
<td>1.757</td>
<td>2.185</td>
<td>0.233</td>
<td>5.124</td>
</tr>
</tbody>
</table>

Source: Field Data 2018
### Table 4.8 Regression coefficients (ROE)

<table>
<thead>
<tr>
<th></th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-2.292</td>
<td>0.365</td>
<td>-1.632</td>
<td>0.242</td>
</tr>
<tr>
<td>Internet Trs</td>
<td>1.652</td>
<td>0.567</td>
<td>0.874</td>
<td>1.479</td>
</tr>
<tr>
<td>Mobile Trs</td>
<td>1.462</td>
<td>0.874</td>
<td>0.282</td>
<td>1.747</td>
</tr>
<tr>
<td>ATM Trs</td>
<td>1.879</td>
<td>0.239</td>
<td>0.678</td>
<td>4.783</td>
</tr>
<tr>
<td>Debit/Credit Trs</td>
<td>2.376</td>
<td>0.672</td>
<td>0.836</td>
<td>5.124</td>
</tr>
</tbody>
</table>

Source: Field Data 2018

### Table 4.9 Regression coefficients (Net Profit)

<table>
<thead>
<tr>
<th></th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-3.850</td>
<td>1.672</td>
<td>-2.764</td>
<td>0.423</td>
</tr>
<tr>
<td>Internet Trs</td>
<td>1.773</td>
<td>0.622</td>
<td>0.652</td>
<td>3.126</td>
</tr>
<tr>
<td>Mobile Trs</td>
<td>2.772</td>
<td>0.267</td>
<td>0.445</td>
<td>3.051</td>
</tr>
<tr>
<td>ATM Trs</td>
<td>1.164</td>
<td>0.678</td>
<td>0.876</td>
<td>0.785</td>
</tr>
<tr>
<td>Debit/Credit Trs</td>
<td>0.989</td>
<td>0.385</td>
<td>0.033</td>
<td>1.557</td>
</tr>
</tbody>
</table>

Source: Field Data 2018
CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The chapter discusses and gives a summary on the data findings analyzed in relation to the dependent and independent variables under study. The chapter derives also recommendations and conclusions of the study from the data analyzed and there after gives suggestions on areas for further research.

5.2 Summary of Findings.

The study intended to find out on whether electronic banking had some effects on the financial performance of the commercial banks in Kenya. The research was carried out for a period of five years that is from 2011 to 2015. The response rate was at 79.07% since only 34 commercial banks had participated. Descriptive and regression analysis were conducted to find out the reliability and validity of the data.

5.2.1 Internet Banking

The respondents strongly agreed that an increase in the number of internet banking transactions resulted to more revenues and profits this was due to the fees and commissions collected during the transactions. It was also realized that the increase in the number of internet transaction reduced congestion in the banking halls due to the reduced number of clients visiting the banks. Labour costs were also anticipated to fall due to the reduced number of employees hence resulting to increased efficiency and bank performance.

The descriptive statistic test revealed that internet banking had positive and significant relationship with the ROA and the Net Profit. This was clear that a unit change in internet
banking resulted to an increase in the ROA by 3.850 and hence better financial performance in the commercial banks. Internet banking showed also a positive and significant correlation with the Net Profit while it had a positive but insignificant result with the ROA.

The trend determined from internet banking across the five years indicated a positive and gradual increase in the number of transactions. This was a clear indication that most of the banks had employed the use of internet banking as one of the electronic banking service and it is anticipated that as time goes by many people will be moving to digital banking.

5.2.2 Mobile Banking

A survey on the Mobile banking transactions showed a strong agreement from the respondents in that an increase in the number of active users results to increased deposits and increased convenience to the customers since they can access the banking services via their phones at any particular time of the day and hence result to better financial performance for the banks. It also reduces the operational and labour costs since the banks will only require a few staffs to deal with the systems compared to the previous years where they needed many staffs to handle the manual work. Increased capital investment in mobile banking was capital intensive hence promoting efficiency and bank profitability.

Mobile banking was also found to be having a significantly positive relationship with the ROA but an insignificant relationship with the ROE. A unit change in mobile banking resulted to an increase of the ROA by 3.482 and thus resulting to better financial performance in the commercial banks.

From the trend analysis, it was observed that mobile banking increased from the year 2011 up to 2014 and dropped in the year 2015. The growth is related to the introduction of various banking
services and products by different banks. This includes, the introduction of banking products like M-pesa, M-Shwari Eassy loans and many more that have reduced the long queues in the banking halls hence resulting to increased financial performance of the banks.

5.2.3 ATM Banking

An increase in the number of ATMs installed reduced the number of clients in the banking halls and the number of human tellers hence cutting the labour cost, paper work cost and the operational costs and therefore resulting to better financial performance of the commercial banks. The increase also resulted to increased accuracy levels, banking space and proper time management that lead to the banks increased efficiency and profitability.

ATM banking had a positive significant relationship to the ROE and the ROA. A unit change in the number of ATM transactions resulted to a 2.742 increase in the ROA hence leading to better financial performance.

ATM Banking transactions increased progressively from 2011 to 2014 and thereafter a drastic drop to 2015. This could have been due to the popularity of the mobile banking services and the introduction of banking agencies like KCB-Mtaani.

5.2.4 Debit/Credit Card Banking

Increase in the number of Debit/Credit Card Banking resulted to reduced paper work and also increased the retention of the customers thus leading to increased efficiency and profitability for the commercial banks. The use of Debit/Credit Cards was found to be convenient to the users since they could use the cards at any particular time to do their transactions. They also required less acquisition and maintenance costs.
Debit/Credit Cards banking was found to be having a significantly positive relation to the ROA but an insignificant positive relation to the ROE. A unit change in the Debit/Credit Cards banking resulted to a 1.757 increase in the ROA thus resulting to better financial performance.

From the trend, it was observed that Debit/Credit banking transactions increased from 2011 to 2012 and then slightly decreased in 2013 and then gradually increased all through to 2015.

5.3 Conclusion
From the empirical results it was noted that electronic banking had a positive significant relationship with the ROA and this led to better financial performances of the Kenyan commercial banks. All the variables (internet banking, Mobile banking, ATM banking and Debit/Credit banking) had a positive significant relationship with the ROA hence leading to better financial performance

From the descriptive statistics, it was noted that Mobile banking services were widely used compared to the other services (internet banking, ATM banking and Debit/Credit banking services) while Debit/Credit banking services had the least clients. This is due to the changes in technology levels which is an emerging issue in the banking sector.

From the trend analysis, internet banking was the only variable that showed a gradual increase all through for the five years. Mobile banking showed a drastic increase in the number of transactions in the year 2014 to 2015 while ATM banking showed a drop.

5.4 Recommendation
For proper sustainability and growth of the Kenya commercial banks, the banks should enhance the proper usage of the four objectives of the study since it has been proven that they contribute positively to the banks’ financial performance. More emphasis should be put at increasing the
usage of the Debit/Credit Cards and ATM banking especially when dealing with transactions relating to point of sale more so in super markets, shops and retail stores.

Electronic banking should be employed by banks through proper management policies since it has shown that it cuts down the operational and labour costs that are unnecessary to the banks. Paper works are also minimized and the efficiency and profit levels are improved. The Kenyan Government should also support commercial banks in curbing down technological crimes that are on arise since this crimes not only affect the banking industry but they also affect the other sectors hence affecting the Kenyan economy.

For further studies, the study recommends that other areas of electronic banking and financial performance should be looked onto. These areas include; quality of electronic banking services, electronic fund transfers and the use of non-performing loans as a measure of the financial performance. The time span should also be expanded from 5 year to 10 years and above for better analysis and interpretation.
REFERENCES


Mabwai, F. (2016). *Effects of mobile banking on the financial performance of commercial banks*


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APPENDICES

Appendix I

Introductory letter (Primary Data)

Mutisya Maria Mueni
C/O Kenyatta University,
P. O Box,
Nairobi,
Kenya.

TO WHOM IT MAY CONCERN

Dear Respondent,

REF: REQUEST FOR RESEARCH DATA

I am a student of Kenyatta University pursuing with a Master’s degree in business administration. Topic of research is e-banking and the financial performance of commercial banks in Kenya. Kindly answer the following questions in order to provide me with the necessary data for writing this project. Any information given by the respondents will only be used for academic purpose and will be treated with the desired confidentiality. The findings of the study will be availed to you upon request on completion of the research. Your assistance will be highly appreciated.

Yours faithfully,

Maria Mueni Mutisya.
Appendix II
Introductory letter (Secondary Data)

Mutisya Maria Mueni
C/O Kenyatta University,
P. O Box,
Nairobi,
Kenya.

TO WHOM IT MAY CONCERN

Dear Respondent,

REF: REQUEST FOR RESEARCH DATA

I am a student of Kenyatta University pursuing with a Master’s degree in business administration. Topic of research is e-banking and the financial performance of commercial banks in Kenya. Kindly requesting you to cooperate and provide me with the necessary documents and information for writing this project. Any information given will only be used for academic purpose and will be treated with the desired confidentiality. The findings of the study will be availed to you upon request on completion of the research. Your assistance will be highly appreciated.

Yours faithfully,

Maria Mueni Mutisya.
Appendix III

Questionnaire

SECTION A: BACKGROUND INFORMATION OF THE RESPONDENTS.

Please tick (√) where necessary according to your level of agreement

1. Name of the bank (optional)……………………………

2. Number of years in employment at the banking industry
   (a) Less than one year [   ]
   (b) 1 to 3 years [   ]
   (c) 4 to 6 years [   ]
   (d) More than 9 years [   ]

3. For which period has your bank adopted to e-banking?
   (a) Less than one year [   ]
   (b) 1 to 3 years [   ]
   (c) 4 to 6 years [   ]
   (d) More than 9 years [   ]

SECTION B: INTERNET BANKING AND FINANCIAL PERFORMANCE OF COMMERICAL BANKS IN KENYA

4. Tick (√) where applicable according to your level of agreement beside the statements on internet banking and financial performance of commercial banks. Scale for assessment:
   (1= Strongly agree, 2= Agree, 3= Neutral, 4= Disagree, 5= Strongly disagree)
<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>Increase in the number of internet banking transactions increases the bank`s financial performance.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii</td>
<td>Increase in the number of customers using internet banking allows Customers do most of the work themselves there for the number of staff can be reduced.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii</td>
<td>Use of internet banking leads to increased value of fees and commission from internet banking, revenue and profitability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iv</td>
<td>Reduces congestion in banking halls resulting to increased efficiency and performance.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Please tick (√) where necessary according to your level of agreement statements showing internet banking and Return on Assets.

Scale for assessment (1= Strongly agree, 2= Agree, 3= Neutral, 4= Disagree, 5= Strongly disagree)

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>Increased number of internet banking transactions reduces operation cost leading to a better return on assets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii</td>
<td>Customers do most of the work for themselves leading to reduction in number of staff, costs hence increased profit and</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6. Specify any other ways in which internet banking improves financial performance

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>Convenience in use of mobile banking increases number of users of mobile banking and bank profitability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii</td>
<td>Increased number of active users enhances self-service reducing labour cost and increasing banks profitability.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii</td>
<td>Ease of use of mobile banking has influenced increase in the total deposits and bank profitability.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iv</td>
<td>Increased capital investment in mobile banking is capital intensive promoting efficiency and bank profitability.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION C: MOBILE BANKING AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA.

7. Please tick (√) where necessary according to your level of agreement statements showing mobile banking and profitability.

Scale for assessment (1= Strongly agree, 2= Agree, 3= Neutral, 4= Disagree, 5= Strongly disagree)
8. In which other way has mobile banking increased the profitability?

9. Please tick (√) where necessary according to your level of agreement statement showing mobile banking and return on assets.

Scale for assessment (1= Strongly agree, 2= Agree, 3= Neutral, 4= Disagree, 5= Strongly disagree)

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>Increase in number of active users of mobile banking increases profitability and return on assets.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii</td>
<td>Increased number of mobile banking transactions cuts down the bank costs increasing profitability and return on assets.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii</td>
<td>Mobile banking has increased the level of bank deposits increasing profitability and return on assets.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iv</td>
<td>Mobile banking promotes efficiency and profitability of the bank hence increasing return on assets.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION D: ATM BANKING AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA.

10. Please tick (√) where necessary according to your level of agreement statements showing ATMs and financial performance.

Scale for assessment (1= Strongly agree, 2= Agree, 3= Neutral, 4= Disagree, 5= Strongly disagree)
11. Please tick (√) where necessary according to your level of agreement statements showing
ATMs and return on assets.

Scale for assessment (1= Strongly agree, 2= Agree, 3= Neutral, 4= Disagree, 5= strongly disagree)

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>Increased number of ATMs installed reduce the number of human teller, labour cost and increase profitability.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii</td>
<td>Increased number of ATM users reduce paper work, operation costs, increase efficiency and profitability.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii</td>
<td>Increased number of ATM transactions reduce congestion in banking halls, increase accuracy and profitability.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iv</td>
<td>Use of ATM saves time, space increasing bank’s efficiency and profitability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ATMs reduced labour costs, increase profitability and return on assets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii</td>
<td>ATMs reduce operational cost and increase profitability in the long-run and return on assets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii</td>
<td>ATMs reduce congestion in banking halls, increase number of transactions and return on assets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iv</td>
<td>ATMs increase bank productivity, efficiency and return on assets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
12. Specify in which other way ATMs improve the financial performance


SECTION E: DEBIT/CREDIT CARDS AND FINANCIAL PERFORMANCE OF COMMERCIAL IN KENYA.

13. Debit/Credit cards and profitability. Tick (√) where applicable, according to your level of agreement

Scale for assessment (1= Strongly agree, 2= Agree, 3= Neutral, 4= Disagree, 5= Strongly disagree)

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>Increase in value of fees and commission from Debit/Credit cards increases revenue and profitability.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii</td>
<td>Increase in number of Debit/Credit cards issued by banks reduce cost of paper work, increasing efficiency and profitability.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii</td>
<td>Debit/Credit cards helps in retention of customers increasing competitive advantage and profitability.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iv</td>
<td>Increase in number of users of Debit/Credit cards increases the revenue and bank profitability</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

14. In which other way do you think Debit/Credit cards increase profitability

.................................................................................................................................................................

.................................................................................................................................................................

.................................................................................................................................................................
SECTION F: FINANCIAL PERFORMANCE

16. Does electronic banking promote the performance of the bank in the following ways?

<table>
<thead>
<tr>
<th>Performance measures</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Reduced cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(ii) Increased profit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iii) Increased efficiency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iv) Larger customer outreach</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(v) Increased ROE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(vi) increased ROA</td>
<td></td>
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</tr>
</tbody>
</table>

17. Has electronic banking improved banking performance?
   (a) Strongly agree [   ]
   (b) Agree [   ]
   (c) Disagree [   ]
   (d) Strongly disagree [   ]

18. How was the performance of the bank after e-banking?
   (a) Excellent [   ]
   (b) Very good [   ]
   (c) Good [   ]
   (d) Fair [   ]
   (e) Bad [   ]

19. In which other way has electronic banking promoted the financial performance………………

............................................................................................................................................................................
............................................................................................................................................................................

Thank you for participation.
Appendix IV

List of Commercial banks in Kenya

1. African Banking Corporation Ltd
2. Bank of Africa Ltd
3. Bank of Baroda Ltd
4. Bank of India
5. Barclays Bank Ltd
6. CfC Stanbic Bank Ltd
7. Charterhouse Bank Ltd
8. Chase Bank Ltd
9. Citibank, N.A Ltd
10. Commercial Bank of Africa Ltd
11. Consolidated Bank of Kenya Ltd
12. Co-operative Bank Ltd
13. Credit Bank Ltd
15. Diamond Trust Bank Kenya Ltd
16. Dubai Bank Kenya Ltd
17. Ecobank Kenya Ltd
18. Equatorial Commercial Bank Ltd
19. Equity Bank Ltd
20. Family Bank Ltd
21. Fidelity Commercial Bank Ltd
22. Fina Bank Ltd
23. First Community Bank Ltd
24. Giro Commercial Bank Ltd
25. Guardian Bank Ltd
26. Gulf African Bank Ltd
27. Habib Bank A.G. Zurich
28. Habib Bank Ltd
29. Imperial Bank Ltd
30. I&M Bank Ltd
31. Jamii Bora Bank Ltd
32. Kenya Commercial Bank Ltd
33. K-Rep Bank Ltd
34. Middle East Bank Ltd
35. National Bank of Kenya Ltd
36. NIC Bank Ltd
37. Oriental Commercial Bank Ltd
38. Paramount Universal Bank Ltd
39 Prime Bank Ltd
40 Southern Credit Banking Corporation
41 Standard Chartered Bank Kenya Ltd
42 Transnational Bank Ltd
43 UBA Kenya Bank Ltd
44 Victoria Commercial Bank Ltd

(Source: Annual report Central Bank of Kenya, 2015)
<table>
<thead>
<tr>
<th>Year</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
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<tbody>
<tr>
<td>Number of ATMs installed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of active users of ATM</td>
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<tr>
<td>Number of ATM banking</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>transactions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of internet users</td>
<td></td>
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<tr>
<td>Number of internet banking</td>
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<td></td>
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<tr>
<td>transactions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value of fees and commission</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>from internet banking</td>
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<td></td>
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<tr>
<td>Number of active users of</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mobile banking</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Number of mobile banking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>transactions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investment in mobile banking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Kshs)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of debit/Credit cards</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>issued by banks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of debit/Credit card</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>users</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value of fees and commission</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>from Debit/Credit cards</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Return on assets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Return on equity</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Net profit</td>
<td></td>
<td></td>
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</table>
Appendix VI
Work plan.

YEAR 2017/2018:

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>MONTH</th>
<th>WEEK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposal writing, corrections and submission</td>
<td>November - January</td>
<td>1 - 8</td>
</tr>
<tr>
<td>Pilot testing of the research instrument</td>
<td>February</td>
<td>1</td>
</tr>
<tr>
<td>Updating the questionnaire</td>
<td>February</td>
<td>2</td>
</tr>
<tr>
<td>Data collection</td>
<td>February</td>
<td>3 – 4</td>
</tr>
<tr>
<td>Data editing, coding ,validation and entry</td>
<td>March</td>
<td>1</td>
</tr>
<tr>
<td>Interpretation of responses</td>
<td>March</td>
<td>2</td>
</tr>
<tr>
<td>Data analysis</td>
<td>March</td>
<td>3 – 4</td>
</tr>
<tr>
<td>Report preparation and writing</td>
<td>April</td>
<td>1 – 2</td>
</tr>
<tr>
<td>Submission of draft report</td>
<td>April</td>
<td>3</td>
</tr>
<tr>
<td>Submission of final report</td>
<td>April</td>
<td>4</td>
</tr>
</tbody>
</table>
### Appendix VII

**Research budget.**

<table>
<thead>
<tr>
<th>Budget item</th>
<th>Total costs (Kshs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication, telephone and internet</td>
<td>20,000</td>
</tr>
<tr>
<td>Accommodation</td>
<td>30,000</td>
</tr>
<tr>
<td>Piloting</td>
<td>10,000</td>
</tr>
<tr>
<td>Stationary</td>
<td>20,000</td>
</tr>
<tr>
<td>Printing</td>
<td>20,000</td>
</tr>
<tr>
<td>Transport during data collection</td>
<td>60,000</td>
</tr>
<tr>
<td>Data processing and analysis</td>
<td>5000</td>
</tr>
<tr>
<td>Prove reading</td>
<td>4000</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>20,000</td>
</tr>
<tr>
<td><strong>Total cost</strong></td>
<td><strong>189,000</strong></td>
</tr>
</tbody>
</table>