FINANCIAL INNOVATIONS AND PERFORMANCE OF COMMERCIAL BANKS IN KENYA

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A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF BUSINESS IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF DEGREE OF MASTERS OF BUSINESS ADMINISTRATION (FINANCE) OF KENYATTA UNIVERSITY

NOVEMBER, 2020
DECLARATION

This research project is my original work and has not been presented for a degree or other award in any other university. No part of this research project should be reproduced without authority of the author or/and Kenyatta University.

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This research project is submitted for examination with my approval as the university supervisor.

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DEDICATION

I wish to dedicate this research project to my husband John Ireri Mugo, my children Rehema Murugi Ireri, Honest Gatugi Ireri and Natalie Pendo Ireri.
ACKNOWLEDGEMENT

I wish to acknowledge my supervisor Ms. Gladys Kimutai for her tireless professional guidance to see the success of this research project. I thank all my colleagues for their support in encouraging me and the entire Kenyatta University for the conducive environment. I also acknowledge the banks’ management support they offered me during data collection process. May Almighty God Bless you all.
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### ABBREVIATIONS/ACRONYMS

<table>
<thead>
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<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ANOVA</td>
<td>Analysis of Variance</td>
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<tr>
<td>ATM</td>
<td>Automated Teller Machine</td>
</tr>
<tr>
<td>FEM</td>
<td>Fixed Effect Model</td>
</tr>
<tr>
<td>KBA</td>
<td>Kenya Bankers Association</td>
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<td>MFI</td>
<td>Micro-finance Institutions</td>
</tr>
<tr>
<td>NACOSTI</td>
<td>National Commission for Science, Technology and Innovation</td>
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<tr>
<td>NSE</td>
<td>Nairobi Securities Exchange</td>
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<td>PWC</td>
<td>PricewaterhouseCoopers</td>
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<tr>
<td>REM</td>
<td>Random Effect Model</td>
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<tr>
<td>ROA</td>
<td>Return on Assets</td>
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<td>ROI</td>
<td>Return on Investment</td>
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<td>SPSS</td>
<td>Statistical Package for Social Sciences</td>
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OPERATIONAL DEFINITION OF TERMS

Financial Innovation  The act of establishing and subsequently popularizing new financial instruments and new financial technologies, institutions and markets. These include internet, agency, mobile and ATM banking.

Commercial Banks  Financial institutions carry out business operations such as the acceptance and protection of deposits, Provision of business loans and car loans, mortgage loans and fundamental investment items such as savings accounts and certificates of deposit.

Performance  The attainment of a task calculated against preset known criteria and calculated in ROA and ROE terms.

Internet Banking  An electronic payment system enabling customers of a bank or other financial institution’s to make payment using credit card, loan request, account transfer or an online payment bill in conducting various financial transactions through the Institution’s website.

Mobile Banking  A service provided by a financial institution or bank enabling clients to conveniently carry out financial transactions. Protection, customer loyalty and access to financial services remotely using a mobile device.

Agency Banking  Refer to a contracted supermarket or postal outlet to process the purchases of consumers through customer deposit and interest acknowledged by a financial institution or operator of a mobile network.
ATM

A computer electronic system providing fundamental banking functions and is calculated in terms of booth cash availability, transaction cost and security of service.
Commercial banks in Kenya have adopted alternative banking platforms that, because alternative banking has become synonymous with commercial banks in Kenya, reflect a change in the delivery of banking and financial services. Although banks have been able to exploit available technology to provide customers with alternative avenues for banking services, the challenge facing them today is to maximize the use of these channels in order to enhance their performance. The study investigated effects of financial innovations on Kenyan commercial banks performance. The research’s specific objectives were to examine how internet, mobile, agency and ATM banking influenced Kenyan commercial banks performance. The study was guided by agency theory, balanced score card and diffusion of innovation theory. Descriptive research design was employed and 16 commercial banks in Kenya that, from 2013 to 2017 were targeted, adopted all four financial innovations. In each of the selected banks, the sample size was 80 respondents, consisting of 5 senior management staff. Using simple random sampling, the officials were selected. To gather primary data from the respondents, this study used a questionnaire. The content analysis approach was used to analyze qualitative data collected and reported from open-ended questions in narrative form. Descriptive statistics were used in order to measure the quantitative data. Multiple regression analysis was used to display the relationship between independent variables against the dependent variable. It was found out that internet, mobile, agency and ATM banking had a positively and significantly affected commercial banks’ performance. It was concluded that the growth of the Internet has greatly benefited the banking industry. The Internet has radically altered the way banking networks are built to meet the demands and desires of customers. Mobile banking offers commercial banks in Kenya a strong opportunity to meet many Kenyan mobile phone subscribers who have remained unbanked and unreached due to restricted access to the country’s bank branch networks. The access of the community to the large masses through mobile banking gives banks the chance to expand by hitting the unbanked population. Agency banking has led to accessibility of financial service to many customer in remote areas and hence an increase in effectiveness and efficiency in service delivery. Customers are satisfied with the automated teller machine services due to ease of use, transaction cost and security of operation, still not happy with cash dispensing from the automated teller machine. The study advises that in their everyday activities, including deposits, purchases and money transfers, the public and companies must be encouraged to use Internet banking. Kenya’s commercial banks should ensure the convenience and security of mobile banking through written guidelines on mobile banking convenience and security. The number of agents in real estate and in rural areas should be increased by commercial banks in Kenya. By reducing the criteria of being a bank agent, this can be achieved. Banks can use personalized software to record relevant details on automated teller machine cards in order for banks to assess whether or not fraudulent transactions have taken place.
CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

Organization's performance depends on the match between its strategic responsiveness and strategic aggressiveness, and how these balance environmental turbulence (Pearce & Robinson, 2012). Parmenter (2015) observe that the performance of an organization is used to calculate the total financial and non-financial value of a business well-being over a given period of time. Hence an organization's performance is measured from multiple metrics, both qualitative and quantitative. Therefore, it can be argued that the performance of an organization is how much the association meets a lot of pre-decided objectives in accordance with its central goal.

Tahir, Shah, Arif, Ahmad, Aziz and Ullah (2018) observe that the Pakistan banking sub-sector must be repositioned in its key strategic role of balancing its performance through various profitability ratios. Craig and Hart (2019) show that due to rapidly evolving innovation and improved monetary effectiveness, business banks have utilized prepared and experienced staff who are imaginative and anxious to achieve change. It can therefore be said that developments offer companies a strategic orientation to resolve the obstacles they face while trying to gain a sustainable competitive advantage and thus boost their performance.

Financial institutions have been able to build expertise in South Africa and banks have invested in online marketing, mobile banking, paperless banking, and personalized customer support to sustain them (Bakar & Ahmad, 2015). This allowed them to develop beneficial core banking processes, marketing campaigns, products and creativity for organizations. According to Ahmad, Raza, Amjad and Akram (2017) the financial efficiency of financial institutions has been enhanced by financial innovation. This can be seen by increased customer numbers, increased
growth in income and the production of new banking products. Financial inclusion has improved, especially in developing countries, due to improved financial performance.

In Kenya, the commercial banking industry has experienced entry of many players from locally incorporated banks and internationally incorporated commercial banks (multinationals), both from within and without the continent (Aburime, 2009). All the banks are competing for the market that is dominated by both public and private banks. For instance, Chowdhury and Islam (2015) show that in various branches, private commercial banks are continuously rising, generating job opportunities, increasing deposits, disbursement of loans, net income and earnings per share over time.

1.1.1 Financial Performance

Financial performance is the ability of institution of finance to generate sustainable profitability. Managers need to gauge complex compromises between development, return and danger all together for any financial institution to succeed in its operations, encouraging the adoption of risk-adjusted metrics (Albertazzi & Gambacorta, 2011). Amalendu and Sri (2011) show that an institution's poor financial performance can impact the institution's attractiveness to speculators, which can prompt indebtedness and inevitable breakdown. Therefore, in monetary terms, financial performance will calculate a company's results. In order to provide a competitive edge over their rivals, institutions can set up the best financial and non-financial systems.

Financial performance is the measurement of how a business entity has utilized its resources to generate revenues. Financial performance is normally measured by the gearing ratios, profitability ratios and the liquidity ratios (Alfred, 2017). According to Agbada and Osuji (2013) the Return on Assets (ROA) is a key proxy indicator commonly used in bank financial
performance literature and represents the capacity and effectiveness of management to leverage the financial and real investment resources of banks to produce income. The author further indicates that the ROA relies on the policy decisions of the bank as well as on uncontrollable economic and government regulatory factors.

Financial performance refers to the financial activity conducting act. In a more extensive setting, monetary achievement alludes to how much budgetary targets are or have been accomplished (Orlitzky, Schmidt & Rynes, 2013). According to McWilliams and Siegel (2010) financial performance is the method of calculating in monetary terms the outcomes of the policies and operations of an organization. It is used over a given period of time to assess the overall financial health of companies can also be used to look at comparable organizations in a related field or to evaluate companies or regions in general. Financial performance in this study was evaluated in terms of Return of Assets (ROA) and Return on Equity (ROE).

1.1.2 Financial Innovations

Financial innovations include, in the financial market, the development of a new product or a means. For instance, financial innovation may involve the curtailing of processes with an aim of cost reduction while satisfying the customer expectations (Frame & White, 2014). Where there are new processes and products it follows that new technologies have been used and thus innovation is a tool of adopting new ways by a bank. According to Batiz-Lazo and Woldesenbet (2016) financial innovations are a mean to enhancing the performance of a bank and ensuring that the bank maintains a competitive edge in the market. For this reason, it is inevitable for them to remain innovative in order to secure a favourable niche in the banking industry.
Internet banking over the past few decades, organizational and managerial excellence within the banking industry has been deployed more regularly to help and strengthen. The advancement of internet technology has changed the conventional circulation channel of banking administrations to clients decidedly, and banks are resolved to study the attraction of utilizing these replacement stages for customers in general (Agboola, 2014). According to Manoranjan, Bhusan, Kanta and Suryakanta (2017) in order to stay ahead, the development of Internet banking has driven numerous banks to put accentuation on data innovation techniques. As far as cost, client support, and advantage, Internet banking is presently a fundamental component of the bank.

Mobile banking is the supply of banking services with the aid of mobile devices that allow customers to deposit cash into their accounts, pass cash to other users, such as products and services vendors, relatives and friends (Daniel, 2015). Donner and Tellez (2016) contends that unmistakably banks in Kenya and other money related organizations must acknowledge versatile banking to meet client prerequisites so as to remain in accordance with changes in the working atmosphere. Subsequently, expanding joint efforts between monetary foundations and other specialist co-ops have prompted an ascent in versatile banking as clients, through their portable financial administrations, will execute and transparent service bills.

Agency banking can play a key role in providing, as part of the branchless banking model, financial services that are cheaper, safer and more efficient than those currently available to those who are inaccessible. The cost of offering financial services to unaccessed individuals has been significantly reduced by agency banking (Musau, 2013). Kamau (2015) observe that Large recipients of the rapid growth of agency outlets are commercial banks. They have helped reduce expansion and hiring expenses, but it is important that the banks have a good strategic justification for each agent they set up. Ensure adequate agent setup and channel support to drive
decision-making and allow subsequent performance appraisal against the original strategic purpose to drive decision-making.

Mwangi (2017) argues that, Channels such as the Automated Teller Machine (ATM) and internet banking empower business keeps money with little exertion to meet a wide client base across topographies. The creator likewise calls attention to that the expanding branch methodology and promoting ventures to be communicated in accordance with the purchaser and monetary real factors will enable Commercial Banks to support ROI and vicinity. PricewaterhouseCoopers (PWC) (2012) further states that the high digital platform and high-fee physical banking infrastructure imply a decreasing return on investment (ROI) for branch networks.

1.1.3 Commercial Banks in Kenya

Kenya is home to a total of 44 commercial banks, all having the same market share (Central Bank of Kenya Annual Report, 2010). According to the Central Bank of Kenya (CBK) Annual Report (2010) on the banking industry has continued to face important factors at the same time. In their core business activities in the markets and communities where they operate, commercial banks need to develop a sustainable strategy.

Commercial banks have met up under the Kenya Bankers’ Association (KBA) in Kenya, which serves as a premium entryway of the financial area. KBA goes about as a stage for issues concerning individuals to be examined. Kenya's financial area has kept on growing in resources, stores, productivity and item contributions over the last couple of years, the most. The development was generally in Kenya and in the East African population group region, roused by a development plan for the business wide branch organization, computerization of a huge scope of administrations and a move towards underscoring differing buyer needs instead of conventional off-the-rack banking merchandise (PWC, 2012).
Over the last few years, Kenyan commercial banks have also experienced increased competition as a result of increased innovation among players and new market entrants. These trends include the shift from long-established decentralized banking to one branch banking, made conceivable by the combination of different business capacities (PWC, 2012). In order to preserve brand leadership and consumer loyalty for commercial banks in Kenya, different tactics are used, such as the launch of innovative products and the implementation of effective customer relationship management.

1.2 Statement of the Problem
Commercial banks contribute to a sound and gainful financial area just as a more grounded budgetary framework which is better ready to persevere through negative stuns. Poor performance can lead to bank runs, bank crises and result in a major financial crisis (Ongore & Kusa, 2017). According to Olweny and Shipho (2011) increased number of commercial banks in Kenya has increased competition and generally available product options have increased which have made customers to become more open minded and are always looking forward better quality items and administrations at sensible costs accordingly, the output of most Kenyan commercial banks has deteriorated.

Nimalathasan (2017) observes that benefit is directed at all commercial banks. For that reason, one of the main ways of maximizing resources and lowering costs is to accept financial developments. Nevertheless, these improvements face a few snags that suggest conversation starters about their impact on the benefit of these business banks. These issues incorporate absence of client trust, security issues, gadget disappointments, exchange mistake cases and organization disappointments. In addition, bank halls continue to be congested despite the
existence of financial advances, which indicates that customers continue to look for administrations in bank offices in spite of the presence of elective financial organizations.

Despite the good outlook of Kenyan banks, the gainfulness of business banks has risen gradually because of higher working costs, as these banks have moved to more innovative merchandise. Notwithstanding expanded money related advances because of rivalry from neighborhood portable assistance move administrations such as local mobile service transfer services, local banks suffered significant losses and were unable to realize further earnings including Mpesa and Airtel Money consequently bringing down their presentation through low re-visitations of ventures (Misati, Njoroge, Kamau & Ouma, 2010). In addition, Mugane and Ondigo (2016) note that other most frequent banking service issues, for example, exchange mistakes, have decreased the notoriety of banks, in this manner lessening gainfulness.

Various research differences are shown in the study of current literature. For example, the study shows mixed results in which research by Nyambariga (2013) on financial innovation effect and found a positive relationship between ROA service innovation and fundamental for the budgetary presentation of business Kenyan banks, just as authoritative advancement and ROA. The examination utilized a cross-sectional exploration plan, nonetheless.

Cherotich, Sang, Shisia and Mutung'u (2015) research analyzed commercial banks ' financial innovations and financial performance and found a strong connection between financial performance and financial innovations. Explanatory research design was used. Descriptive research architecture will be employed in the current analysis. The research by Kibaara (2015) analyzed the impact of financial innovation on financial performance and established a powerful connection. However, the report concentrated on Kenya’s micro-finance institutions (MFIs). The
topic of current research will be commercial banks in Kenya. Therefore, this study sought to evaluate the role of financial innovation in influencing commercial banks' performance in Kenya.

1.3 Objectives of the Study

1.3.1 General Objective

The study generally investigated the effects of financial innovations on the performance of commercial banks in Kenya.

1.3.2 Specific Objectives

The study specifically aimed at:

i. Examining how internet banking affects performance of commercial banks in Kenya.


iii. Determining how agency banking affects performance of commercial banks in Kenya.


1.4 Research Hypotheses

\textbf{HO}_1: Internet banking does not have any significance relationship with the performance of commercial banks in Kenya

\textbf{HO}_2: Mobile banking does not have any significance relationship with the performance of commercial banks in Kenya

\textbf{HO}_3: Agency banking does not have any significance relationship with the performance of commercial banks in Kenya

\textbf{HO}_4: ATM banking does not have any significance relationship with the performance of commercial banks in Kenya
1.5 Significance of the Study

The study will make commercial bank managers aware of the effect of alternative banking networks on the output of commercial banks in Kenya, who will make of the results as a basis for formulating and implementing strategic management strategies to help their exhibition. The examination aftereffects would likewise empower the Government of Kenya to figure strategies that help business banks, through better and more effective processes, to improve their service delivery. This will help to establish equal competition and to strengthen this sub-sector of banking, with the general goal of encouraging economic growth.

The study would provide the general public with details on the alternate banking networks used by commercial banks in their operations. In selecting the banks to invest in, this will assist them in decision-making based on the suitability and reputation of the businesses. The research will also fill in as a wellspring of reference material on other comparative subjects for potential researchers. In addition, other scholars who would pursue the same subject in their studies would aid. It will also highlight, in addition to this, other critical relationships that need more study. This may be in the field of interactions between financial technologies and the success of banks.

1.6 Scope of the Study

The focus of the study was on the financial innovation and success of Kenya's commercial banks. As of 2017, the survey population consisted of 44 commercial banks in Kenya. The questionnaires were used to gather primary data and this analysis used secondary data covering the period from 2014 to 2018 since this period was characterized by steady increases in the adoption of financial innovations under study. Financial innovation was operationalized as internet banking, mobile banking, agency banking and ATM banking.
1.7 Organizations of the Study

The study consisted of five chapters. The first chapter highlights the introduction to the study by providing a short background on the study topic which highlighted the major study variables namely financial innovations and performance of commercial banks in Kenya. It also presents the research problem, the study objectives and research hypotheses, it outlines the significance of the study to various parties such as the management of the banks, government and regulatory agencies as well as scholars. The scope and study limitations are also highlighted. The second chapter consists of literature review whereby scholarly works related to the study topic will be discussed and findings critiqued to establish the knowledge gaps that exist. The chapter also presents both the hypotheses that underpin the thesis and the study's conceptual structure. The third chapter explains the research methodology to be followed in the study by addressing the research design, population of the study, sampling methods, methods and procedures for data collection, as well as the data analysis plan used. Study findings and discussions are highlighted in Chapter four. Chapter five contains a review of the results, conclusions, policy and practice recommendations and proposals for further research.
CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter covers theoretical review, empirical review, summary of literature reviewed and research gaps and conceptual framework.

2.2 Theoretical Literature Review

2.2.1 Agency Theory

Jensen and Meckling (1992) mainly introduced the Agency Theory. The relationships between an organization and its agents are examined by Agency theory. The main issues in agency theory concentrate on whether there are fitting business sector structures for specialists to carry on in manners that expand the handiness of organizations where possession and control are isolated. Under the terms of organization hypothesis, trying to upgrade P's utility advantages, a head (P) moves position to a specialist (A) to perform exchanges and settle on choices for the benefit of the head. Organization issues will happen if: P and A have various destinations; P and A have various capacities to survey the exhibition of A; P and A have various arrangements of information identifying with the administration decisions that An absolute necessity make as an agent of P.

The way that administrators probably won't have the option to follow specialists, either impeccably or costlessly, about the conduct of the operator or the subtleties behind those conduct is at the focal point of organization issues (Eisenhardt, 2012). Shapiro (2015) notes that ownership of individual and institutional shareholders is increasingly diversified in the commercial banking industry, what's more, the predominance of individual investors in the business seems, by all accounts, to be declining generally speaking. Such examples could
intensify organization issues in the financial business if these issues truly exist. Elective financial organizations are set up by banks and endorsed by national banks to give banks administrations.

2.2.2 Transaction Cost Innovation Theory

The theory was explained by Hicks and Niehans (1983)’s pioneering concept of transaction cost guidance, who advocated and argued that the main feature of financial success is the ability to reduce transaction costs that respond to technological growth and contribute to a reduction in transaction costs. The ability to decrease transaction costs contributes to financial innovation and financial service upgrade, while assuming that money-related technologies minimize the cost of transaction making.

Coase (2013) claims that businesses operate because of institutional transaction costs, making it efficient to coordinate and conduct company practices through an corporate hierarchy rather than using the free market alone. Although the theory implies that operating through consumer relationships where the price function defines exchange is usually more effective than through the hierarchy of an enterprise where managerial authority is preeminent, according to Coase (2013), there are a variety of other costs involved in market trading. These may be, for example, the cost of finding and reviewing data, negotiating, policing and implementing counterparts over which one does not have direct control.

The value of transaction costs The principle of innovation in setting up Internet-related information technology (IT) greatly reduces the exchange costs of an organization as it provides efficient communication, administration and use of data (Remneland-Wikhamn & Knights, 2012). Cell phones that utilization Internet-related IT limit trade costs by giving both off-website admittance to the inner data set of the association and other basic wellsprings of data. The
outcome further decreases working expenses through the usage of portable and organization banking, which influences the bank’s gainfulness development.

2.2.3 Diffusion of Innovation Theory

In 1962, after empirically analyzing more than 508 studies on the diffusion of technology through distinct fields, Rogers developed and popularized this theory. The principle of Diffusion of Innovations (DOI) was the product of contributions from innovative inventions attempts to introduce inventions, according to Rogers (1962). In line with this theory, five concerns about the characteristics of the invention decide the decision to take up innovations. These are the perceived utility, balancing criteria, sophistication, testability and exposure with the technology-adopting social structure. According to Kaminski (2011) diffusion of innovation theory It maintains that it is possible to divide adopters into many groups.

The theory of the diffusion of inventions is a concept that explains how new technological and other technologies spread from introduction to wider acceptance through societies and cultures. The propagation of innovation theory aims to describe how and why new ideas and methods are implemented, with timelines that can be extended over lengthy periods of time (Dearing, 2015). Dearing (2015) In addition, it is important to remember that the manner in which technologies are transmitted to various parts of society and the subjective views associated with technologies are important factors in how rapidly diffusion or dissemination takes place. When developing market share, it is important to understand this.

This research was important to the study as it shows how bank chiefs, staff and clients see the five fundamental attributes found to propose solid determinants of neighborhood banks' acknowledgment and utilization of e-banking. Moreover, not all banks in Kenya actualize e-
banking technology within the banks and those who implement do not follow, as per the theory, at the same time.

2.2.4 Static Trade-off Theory

The hypothesis of static trade off is a monetary hypothesis dependent on crafted by financial specialists Modigliani and Miller during the 1950s, two educators who explored the hypothesis of capital structure and dealt with the creation of the proposition of insignificance of capital structure. This recommendation expresses that the capital structure an association uses doesn't have any kind of effect in ideal business areas since its securing power and the peril of its shrouded assets choose the market estimation of an organization. Worth is independent of the financing system used and the investments of a business, according to Modigliani and Miller (1950).

De-Jong, Verbeek and Verwijmeren (2011) show that the composition of capital is insignificant to a firm's valuation. The valuation of the two similar businesses would remain the same, and the valuation of the option of funding adopted to fund the properties would not be affected. A company's valuation depends on projected future earnings. If no taxes are in place, that is. Furthermore, De-Jong, Verbeek and Verwijmeren (2011) note that financial leverage increases a firm's valuation and decreases the weighted average capital cost (WACC).

With a static trade-off principle, debt funding is initially cheaper than equity funding since the obligation installments of a partnership are charge deductible and there is less danger associated with taking out obligation over value (Butt, Khan, and Nafees, 2013). This implies a business can lessen its weighted normal capital expense through an obligation over-value capital structure. Expanding the measure of obligation, notwithstanding, likewise builds the danger to an organization, counterbalancing the abatement in the WACC to some degree. The static
compromise guideline along these lines portrays a mix of obligation and value where the declining WACC makes up for an organization's developing monetary danger.

**2.3 Empirical Literature Review**

**2.3.1 Internet Banking and Financial Performance**

A Kenya Commercial Bank case study by Kombe and Wafula (2015) explored the impact of internet banking on the financial performance of commercial banks in Kenya. A descriptive survey was adopted by the study. The target population consisted of 31 employees from KCB, Mombasa Kenya Treasury Square. Using questionnaires, the data collection was carried out and evaluated using a statistical method. The study revealed that the effect of ICT adoption on banking sector productivity relates primarily to time reductions and quality improvements, rather than cost reductions. However, the analysis used simple random sampling, which is limited to accession.

Research by Van Dinh and Le (2015) evaluated The impact of internet banking on bank performance-Facts from Vietnam. In order to estimate the relationships between Internet indicators and bank results, the analysis utilizes the Random Effect Model (REM) and Fixed Effect Model (FEM). The results from the regression model showed that by increasing revenue from service operations, internet banking had an impact on bank profitability. The impact level, however, was limited and had a lag period of over 3 years, which is longer than the results of previous studies.

The study by Barasa, Obura and Anyira (2017) We examined the impact of internet banking on the financial performance of commercial banks in the Kisumu Region, Kenya. In the analysis, descriptive survey methodological design was used. A total of 11 banks were picked through a simple random sampling strategy. In addition, 5 employees were picked from each commercial
bank through a simple random sampling strategy, while 11 branch managers purposively sampled from the selected banks. Using descriptive statistics, quantitative knowledge was analyzed. It was revealed that internet banking has had a beneficial impact on the financial efficiency of commercial banks. However, findings were based on convenience sampling which is not suitable for hypothesis testing and generalization of findings.

A research on how internet banking affects the financial performance of listed commercial banks in Kenya was conducted by Mateka, Gogo and Omagwa (2017). The target population was all the employees of listed commercial banks in Kenya. A simple random sampling approach was used to classify the study respondents. Main information sources were used and were compiled using questionnaires. The study's key findings showed that internet support has a positive impact on bank revenues, operating costs, loan books and customer deposits. However, due to the limited sample size used, exploratory study design was used to inhibit generalization.

Abdullai and Micheni (2018) study investigated the effects of Internet Banking on Operational Performance of Commercial Banks in Nakuru County, Kenya. This study adopted a cross-sectional research design. The research population consisted of 56 commercial bank staff members. As banks are small, a census survey was adopted by the report. Information was gathered using standardized questionnaires. The study found that Internet banking has a significant positive effect on commercial banks' operating efficiency. It is not Internet banking alone that does not, however, affect financial efficiency, so the need for other variables.

2.3.2 Mobile Banking and Financial Performance

The study by Mutua (2013) examined how the financial performance of Kenya's commercial banks was affected by mobile banking. As of December 2012, the target population included six
mobile telephony service providers and 43 commercial banks operating in Kenya. The study utilized secondary data from Kenya's central bank, cell phone companies, and the National Statistics Bureau of Kenya. The study found that the positive relationship between mobile banking and commercial banks' financial performance in Kenya is poor. However, to challenge the validity and reliability of the data, a survey design was used.

Ndii's (2014) study examined the link between the deepening of mobile banking and the financial performance of Kenya's commercial banks. The target population consisted of six providers of mobile telephony services and 43 commercial banks operating in Kenya in June 2014. The study used secondary data from the Kenya Central Bank, cell phone operators, and the Kenya National Bureau of Statistics. Nevertheless, the study found that the positive relationship between mobile banking and the financial performance of commercial banks is poor in Kenya. However, the study used simple random sampling that does not ensure that a sample is properly represented.

Kathuo's (2015) study explored the impact of mobile banking on Kenyan banking institutions' financial performance. In December 2014, the target population included the 42 commercial banks that operated in Kenya. The analysis of quantitative data was limited to descriptive statistics, whilst the narrative presented qualitative data. The study found that in the last five years after the launch of M-banking, the number of mobile banking transactions has increased enormously. However, the report used secondary information in which data might be old and out of date.

Bonface and Ambrose (2015) carried out an study of the effect of mobile banking on commercial banks’ financial results in Kenya. The study population consisted of 43 commercial banks in
Kenya, targeted at their Nairobi headquarters by all commercial bank IT managers / directors. In a drop and select scheme, questionnaires were used for data collection. The information gained was evaluated using descriptive techniques. The study found that there was a clear positive effect on the prices of M-banking facilities on Kenya's commercial banks’ financial performance. However, the analysis was a case study using a purposeful sampling method.

The study by Abong'o (2016) examined the impact of mobile phone banking on the performance of commercial banks in Kenya. The system of descriptive analysis was employed. Results showed that the storage of money from one owner to another for safe holding and transfer of money was not a major predictor of bank efficiency. However, exchange of forms of money through mobile banking and investment of monies, the performance of banks has had a major effect on. However, cluster sampling was used which is prone to higher sampling error.

2.3.3 Agency Banking and Financial Performance

The impact of agency banking on the financial performance of commercial banks in Kenya was examined in the Kambua (2015) study. The population for this analysis was 16 commercial banks that had adopted agency banking. To interpret data from the questionnaire, the analysis utilized both quantitative and qualitative techniques. The investigation argued that the increase in the number of business bank operators has added to the increase in the monetary presentation of business banks, creating a positive link between the number of specialists and the money-related execution of business banks. The factor of preserving organizational financial performance was not, however, taken into account in the report.

Wanga (2015) study examined the effects of agency banking on the financial performance of commercial banks in Kenya. This study focused on all 43 commercial banks completely
registered by CBK as at 31 December 2014. Using the desk analysis of published annual Banks' financial statements, secondary data collected. The study covered a five year period (2010-2014). The data considered was quantitative in nature. In conclusion, the implementation of Kenya's banking agency has brought considerable improvements. However, causal research design was adopted which is difficult to reach appropriate conclusions to smaller sample size used.

The study examined the impact of agency banking on the Nairobi Securities Exchange (NSE) financial performance of banking institutions listed in Kanyore, Ali and Kingi (2016). The study used a census survey of 11 commercial banks listed on the Nairobi Stock Exchange out of 43 commercial banks in Kenya. Secondary information was used for the analysis. A descriptive nature of the research was adopted in the study. The financial results of the banks listed for the years 2010 to 2015 was positively impacted by agency banking. Secondary data have, however, been used in which the sample used to produce the secondary data could be small.

Mbugua and Omagwa (2017) conducted a study of the effects of agency banking on commercial banks' financial performance in Embu County, Kenya. The study target population were all bank agent outlets in Embu County, Kenya. To select the research sample that participated in the study, the study used stratified random sampling techniques. The research used primary information obtained through questionnaires. The study used correlation analysis and multiple regressions and found that the in Embu County, the financial performance of commercial banks was to a very large extent affected by the banking costs of agency banking. The analysis, however, covered only one bank and can therefore not be used to generalize.
2.3.4 ATM Banking and Financial Performance

The study explored the impact of electronic banking by Cyprian and Muturi (2015) on the financial performance of commercial banks in Kenya; Survey Study of Banks in Kenya. 44 Kenyan commercial banks were the target population for the study. They used purposeful sampling. The findings showed that real-time gross settlement affects the financial performance of commercial banks in Kenya. The research, however, used simple random sampling, which is restricted to accessing a sample containing the entire population.

A study on the impact of electronic banking on the profitability of commercial banks in Kenya was conducted by Vekya (2017). As of 31st 2014, the study population comprises of the 43 commercial banks in service in Kenya. A census review has been undertaken. The research used secondary data collected from various publications in Kenya's Central Bank. The results of regression showed that bank profitability and ATM transactions had a strong relationship. The research, however, made use of cross-sectional research design, which cannot be used to create relationships of cause and effect. However, the analysis used simple random sampling that does not ensure that a sample is properly represented.

Research by Abdullai and Nyaoga (2017) investigated the impact of the use of automated teller machines on commercial banks' operational efficiency in Nakuru County, Kenya. Of the 28 commercial banks, the sample population included 56 workers. The research found that the use of ATMs has a significant positive relationship with operational performance. The research suggests that the management of commercial banks should invest heavily in ATMs, as this has a positive impact on operational effectiveness. However, the use of ATMs alone does not impact financial performance.
The study by Jegede (2014) examined the effects of the automated teller machine on Nigerian banks' results. The questionnaire was used to collect data from 125 employees of five selected banks in Lagos State from an interswitch network convenience sample. Therefore, using descriptive statistics, the data obtained through the questionnaire was analyzed statistically. The results show that the introduction of ATM terminals has, on average, improved the effectiveness of Nigerian banks due to the alarming rate of ATM fraud, less than the benefits. However, cluster sampling, which is vulnerable to greater sampling error, has been used.

2.4 Summary

Table 2.1: Summary

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Observation</th>
<th>Gap</th>
<th>Current study focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mutua (2013)</td>
<td>Mobile banking on the financial performance of commercial banks in Kenya</td>
<td>In Kenya, the positive link between mobile banking and the financial performance of commercial banks has been low.</td>
<td>A survey design that has challenges in terms of validity and reliability of results was used</td>
<td>A descriptive design was used</td>
</tr>
<tr>
<td>Wangari (2014)</td>
<td>Agency banking effect on financial performance</td>
<td>The Agency banking agency resulted in the financial inclusion of small SMEs</td>
<td>Convenience-based sampling findings that are not ideal for testing hypotheses and generalization of results</td>
<td>Findings was based stratified sampling method</td>
</tr>
<tr>
<td>Jegede (2014)</td>
<td>Automated teller machine effect on</td>
<td>The implementation of ATM</td>
<td>Cluster sampling was used, which is</td>
<td>Findings was based stratified</td>
</tr>
<tr>
<td>Kombe and Wafula (2015)</td>
<td>Internet banking on commercial banks’ financial performance in Kenya</td>
<td>Instead of lowering prices, the impact of ICT adoption on the competitiveness of the banking sector primarily refers to time savings and quality improvements.</td>
<td>To access a sample that is representative of the population as a whole, the study used simple random sampling.</td>
<td>The analysis used a stratified sampling approach to guarantee equal representation of all instances.</td>
</tr>
<tr>
<td>Van Dinh and Le (2015)</td>
<td>bank performance to Internet banking – Vietnam based Evidence</td>
<td>By rising revenue from service operations, Internet banking had an effect on bank profitability.</td>
<td>The study was a case study</td>
<td>The study was a survey study</td>
</tr>
<tr>
<td>Kathuo (2015)</td>
<td>Mobile banking effect on the financial performance</td>
<td>In the last five years, since the launch of M-banking, the number of mobile terminals has significantly enhanced the effectiveness of Nigerian banks due to the unprecedented rate of ATM fraud.</td>
<td>The research used secondary data in which information</td>
<td></td>
</tr>
<tr>
<td>Kathuo (2015)</td>
<td>Mobile banking effect on the financial performance</td>
<td>In the last five years, since the launch of M-banking, the number of mobile terminals has significantly enhanced the effectiveness of Nigerian banks due to the unprecedented rate of ATM fraud.</td>
<td>The research used primary data that provided more up-to-date information</td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td>Title</td>
<td>Findings</td>
<td>Methodology</td>
<td></td>
</tr>
<tr>
<td>---------------------------</td>
<td>-----------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Kambua (2015)</td>
<td>Agency banking on financial performance</td>
<td>The relationship between the number of agents and financial results is positive.</td>
<td>The research took into account how organizational financial success can be maintained.</td>
<td></td>
</tr>
<tr>
<td>Abong’o (2016)</td>
<td>Mobile Phone Banking on performance</td>
<td>The storage of funds from one owner to another for safe storage and transfer of money was not an acceptable indicator of bank performance</td>
<td>Stratified sampling method was used</td>
<td></td>
</tr>
<tr>
<td>Mateka et al. (2017)</td>
<td>How internet banking affects the financial performance of listed commercial banks in Kenya</td>
<td>Online banking has a positive influence on the revenues of banks, operating costs, loan books and deposits of customers.</td>
<td>The study used descriptive research design</td>
<td></td>
</tr>
<tr>
<td>Barasa et al. (2017)</td>
<td>Internet banking effect on financial performance</td>
<td>Internet banking affects the financial performance of commercial banks</td>
<td>The study used stratified sampling method</td>
<td></td>
</tr>
<tr>
<td>Source: Author (2018) and Literature Reviewed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The literature demonstrates that the money related execution of business banks in Kenya is essentially influenced by web banking, versatile banking, organization banking and ATM banking. For example, an examination by Kombe and Wafula (2015) on the impacts of web putting money on the monetary presentation of business banks in Kenya, a case by Kenya Commercial Bank, uncovered that the effect of ICT appropriation on the exhibition of the financial business alludes principally to time decreases and enhancements in quality, as opposed to cost minimization. The examination by Mutua (2013) considered the effect of portable betting on the monetary exhibition of business banks in Kenya and found that versatile banking and the budgetary presentation of business banks in Kenya have a helpless positive relationship. Kambua (2015) study analyzed the impact of office betting on the budgetary presentation of business
banks in Kenya and found a positive connection between the quantity of specialists and money related execution, and Jegede (2014) study inspected the impacts of the mechanized teller machine on the exhibition of Nigerian banks and indicated that the sending of ATM terminals has a normal of not exactly the advantages.
2.5 Conceptual Framework

Independent Variables

<table>
<thead>
<tr>
<th>Internet Banking</th>
<th>Mobile Banking</th>
<th>Agency Banking</th>
<th>ATM Banking</th>
<th>Dependent Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online Pay bill</td>
<td>Convenience</td>
<td>Customer Deposit</td>
<td>Availability of Money in the Booth</td>
<td>Performance of Commercial Banks</td>
</tr>
<tr>
<td>Account Transfer</td>
<td>Security</td>
<td>Interest Earned</td>
<td>Transaction Cost</td>
<td>• ROA</td>
</tr>
<tr>
<td>Loan Application</td>
<td>Customers Satisfaction</td>
<td></td>
<td>Service Security</td>
<td>• ROE</td>
</tr>
<tr>
<td>Credit Card</td>
<td>Access to Financial Services</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Researcher (2018)
Figure 2.1: Conceptual Framework
CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Research Design
A descriptive design was utilized. Clear examination is worried about making sense of what, where, and how of a wonder, as per Kothari (2004). Illustrative investigation configuration was viewed as advantageous in light of the fact that it would not need any control of the considered variable, yet would permit the scientist to evaluate the current status of the marvel. Hence, the engaging exploration configuration permitted the specialist to clarify the effect on bank execution of elective financial channels identifying with various autonomous factors, known as web banking, versatile banking, office banking, and ATM banking. This restricted and guided the scientist to remain zeroed in on the examination's essential destinations.

3.2 Target Population

3.3 Sample Design and Sample Size
Cooper and Schindler (2011) gave an explanation of sampling as picking out as a representative of that community, the given number of issues from a well-defined population. The targeted respondents were 80 who comprised of 5 senior management employees in each of the selected banks who were chief financial officers and accountants from the head offices of each Bank.
These participants were chosen using a simple form of random sampling. A choice on senior management employees was made because apart from managing their unit’s performance through departmental budgets and action plans, they are also responsible for their individual banks performance and higher duty levels on how financial performance is affected by innovations.

3.4 Data Collection Instruments

To gather primary data from the respondents, this study used a questionnaire. The questionnaire was chosen because it is economical, allows the use of generic questions and has generic procedures to ensure anonymity (Singh, 2006). The questionnaire consisted of closed-ended and open-ended questions in order to avoid being too linear and quantifying knowledge (Kothari, 2004). The questionnaire was based on a scale of likert which was structured in five sections, namely; Section A covered demographic data, section B Internet Banking, section C: mobile banking, Section D: agency banking, Section E: ATM banking and Section F: performance of commercial banks.

3.5 Pilot Study

A separate preliminary examination is a pilot study performed (Mugenda & Mugenda, 2003) before embarking on the main research. Before the actual data was obtained, in one of the commercial goods not used in the final report, the researcher conducted a pilot study involving 10 respondents to assess the validity and reliability of the questionnaire items in order to discard or modify those items deemed unclear or inadequate.

3.5.1 Validity of the Instruments
Validity refer to the extent to which testing methods can calculate what they are meant to measure correctly and accurately (Orodho, 2005). In order to attract sufficient responses from the respondents, the piloting, adjustment and elimination of unclear or unclean items, such as questions, wrong answers, or indicated items vulnerabilities will be based on the study. To ascertain consistency and simplicity, content validity was done. The Borg and Gall (1989) argue that an instrument's content validity, the researcher sought support from university superiors through expert judgment and, as such, in finding out whether what they intended to measure can be done by the instruments.

3.5.2 Reliability of the Instruments

Reliability is a proportion of how much an examination instrument creates similar outcomes in rehearsed preliminaries, as per Mugenda and Mugenda (2003). Examination dependability is weakened by arbitrary blunder, which is a deviation from a real estimation. The surveys of the respondents were assessed utilizing split-half methodologies after the pilot examination. In terms of even and odd numbered products, the instrument was usually split into two equal halves and scored separately after it was checked. To evaluate the techniques, a correlation coefficient of approximately 0.8 is high enough as accurate for the analysis, according to Orodho (2005). As shown in Table 3.1, the analysis achieved a correlation coefficient of 0.799.

Table 3.1: Reliability Test Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Alpha Coefficient (α)</th>
<th>Questionnaire items</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet Banking</td>
<td>0.802</td>
<td>4</td>
<td>Reliable</td>
</tr>
<tr>
<td>Mobile Banking</td>
<td>0.831</td>
<td>4</td>
<td>Reliable</td>
</tr>
<tr>
<td>Agency Banking</td>
<td>0.768</td>
<td>5</td>
<td>Reliable</td>
</tr>
<tr>
<td>ATM Banking</td>
<td>0.795</td>
<td>5</td>
<td>Reliable</td>
</tr>
<tr>
<td>Aggregate</td>
<td>0.799</td>
<td>18</td>
<td>Reliable</td>
</tr>
</tbody>
</table>
The results indicates that an aggregate score of 0.799 showed a good reliability which is per the recommendations by Mugenda and Mugenda (2003) who note that a coefficient of correlation of 0.7 or more shows high reliability of the research instrument. This means that the findings of the study were more reliable because the higher score in reliability.

3.6 Data Collection Procedure
The researcher met with top-level leadership in this report to confirm her intention to undertake the organizational report and to explain the importance of the study and the necessary management commitment. Self-administered questionnaires were administered to senior management. The investigator followed up on telephone calls and even visited respondents before the prescribed time to inform them of the importance of answering the questionnaires.

3.7 Data Analysis and Presentation
For both quantitative and qualitative analysis, the investigator used the information obtained from the survey. The content analysis method was used to analyze qualitative data gathered and recorded in narrative form from open-ended questions. Descriptive statistics (SD and mean) were used for quantitative data analysis and standard deviation. To ensure effective communication with users, bar charts, pie charts and frequency distribution tables were used in presenting analyzed data.

Variance Analysis (ANOVA) was used to determine the level of significance of the dependent variable variables at a 95 percent confidence level. Multiple regression analysis was used in showing dependent variable relationship against the independent variables.

The equation of regression assumed the following form:

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon. \]
Y = Banks performance

X₁ = Internet Banking

X₂ = Mobile Banking

X₃ = Agency Banking

X₄ = ATM Banking

β₁, β₂, β₃ and β₄ = Coefficients

ε = Error term.

3.8 Diagnostics Tests

3.8.1 Autocorrelation Tests

Autocorrelation refers to the degree of correlation through multiple observations in the data between the values of the same variables. In the form of time series details, in which observations take place at different points in time, the principle of autocorrelation is most frequently debated. In cross-sectional data, however, autocorrelation can also occur when the findings are related in some other way (White, 1992). Autocorrelation of the regression residuals may also occur in a regression analysis where the model is incorrectly described. If you are attempting, for example, to model a simple linear relationship, but the relationship you experience is non-linear.

A popular method of autocorrelation testing is the Durbin-Watson test. Test statistics ranging from 0 to 4 are given by Durbin-Watson tests. Mid-range values near 2 indicate less autocorrelation, while values closer to 0 or 4 indicate higher positive or negative autocorrelation.

3.8.2 Homoscedasticity

Homoscedasticity defines a condition in which, over all values of the independent variables, the error term. The presumption of equal variances, that is, the assumption of homoscedasticity,
implies that different samples, even though they come from different populations, have the same variance (Jarque & Bera, 1980). Jarque and Bera (1980) It also reveals that in linear regression, which assumes the data is homoscedastic, the hypothesis of equal variances is also used. Homoscedasticity will be evaluated in this analysis using the Levene test, which is a test to verify that variances for all samples are equal when your data comes from a non-normal distribution.

3.8.3 Multi-collinearity
Multicollinearity refers to a condition where in a multiple regression model a highly linear relation exists between two or more explanatory variables. For example, if, as in the above equation, the correlation is equal to 1 or −1 between two independent variables (Alin, 2010), there is perfect multicollinearity. The Variance Inflation Factor (VIF) A correlation between independent variables and the frequency of that correlation is defined. A VIF for an independent variable is determined by Statistical Tools. VIFs start at 1 and have no upper limit. A value of 1 means that this independent variable is not correlated with any other variable, according to Farrar and Glauber (2017). VIFs between 1 and 5 imply that a mild correlation exists, but that corrective action is not sufficiently necessary to justify it. VIFs above 5 reflect critical multicollinearity levels where the coefficients are incorrectly calculated and p-values are unknown.

3.8.4 Normality Tests
Normality tests are utilized in measurements to decide if an information set is displayed so much by an ordinary distribution and is so vulnerable to processing it to be ordinarily circulated for an arbitrary variable basic the informational collection (Jarque & Bera, 2014). The square value of the Pearson sample correlation coefficient measured from the rank plot points is the Shapiro-
Wilk normality test statistic \((E(Y_i), Z_i), i = 1, 2, ..., n\). The small values of the test statistics show that the normality principle does not hold. The null hypothesis is consistent with the high values of the test statistics. For calculating the p-value of the test, the R value may be used. If the p-value is small enough, the null hypothesis is dismissed.

3.9 Ethical Consideration

A letter of authorization from the university and National Commission for Science, Technology and Innovation (NACOSTI) permit was obtained. The researcher informed the respondents that a third party would not be released with any private information and informed The respondent wouldn't disclose his or her real name. The study's context and intent were clarified by the researchers to the respondents.
CHAPTER FOUR: DATA ANALYSIS AND FINDINGS

4.1 Introduction
This chapter basically presents the findings of data collected from the field. The response rate is given first followed by background information of the respondents, descriptive statistics and inferential analysis.

4.2 Response Rate
The respondents were administered a total of 80 questionnaires. Their rate of response is shown in Figure 4.1.

Figure 4.1: Response Rate

![Pie chart showing response rate](image)

Source: Survey Data (2019)
Figure 4.1 indicates that 92.5% responded and 7.5% did not respond. As per the recommendation by Baruch (2012) for data analysis, a response rate of above 80 percent is enough. Hence, the study response rate of 92.5 percent was considered appropriate for data analysis.

4.3 Demographic Data
The respondents’ background information was based on gender, education level, age and work experience. The findings are presented as follows.
4.3.1 Gender of the Respondents

Table 4.1: Gender of the Respondents

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>44</td>
<td>59.5</td>
</tr>
<tr>
<td>Female</td>
<td>30</td>
<td>40.5</td>
</tr>
<tr>
<td>Total</td>
<td>74</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Survey Data (2019)

The study established that male respondents accounted majority as presented by 59.5% while female respondents accounted for 40.5% as shown in Table 4.1. This shows that study had considered fair distribution of both gender.

4.3.2 Education Level of the Respondents

Figure 4.2: Education Level of the Respondents

Source: Survey Data (2019)

Figure 4.2 indicates that the majority of workers (41.89 percent) have reached a Bachelor’s Degree level. This was followed by 24.32% Master’s degree, 17.57% Diploma and 16.22% Post Graduate Diploma level. This is an indication that most respondents had achieved the highest level of education and were able to respond appropriately to the survey.
4.3.3 Age of the Respondents

Table 4.2: Age of the Respondents

<table>
<thead>
<tr>
<th>Category of Years</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 35 years</td>
<td>5</td>
<td>6.8</td>
</tr>
<tr>
<td>35 - 44 years</td>
<td>15</td>
<td>20.3</td>
</tr>
<tr>
<td>45 - 54 years</td>
<td>42</td>
<td>56.8</td>
</tr>
<tr>
<td>55 years and above</td>
<td>12</td>
<td>16.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>74</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: Survey Data (2019)

Table 4.2 indicates that the majority of workers (56.8 percent) were aged between the ages of 45 and 54, 20.3 per cent between the ages of 35 and 44, 16.2 per cent between the ages of 35 and 44 and 6.8 per cent below 35. This demonstrates that respondents from various age groups who participated in the study were obtained.

4.3.4 Work Experience of the Respondents

Figure 4.3: Work Experience of the Respondents

Source: Survey Data (2019)
Figure 4.3 indicates that the majority of workers (43.24%) worked for a span of 9 years, 39.19% between 6 and 8 years, 9.46% less than 2 years and 8.11% between 3 to 5 years. These findings suggest that respondents have served for a long time and could therefore contribute enough to the study.

4.4 Descriptive Statistics

In order to present quantitative, descriptive statistics, such as means and standard deviations, were analyzed using. These were presented as described in the study goals as shown below.

4.4.1 Internet Banking

The study sought to investigate the impact of internet banking on commercial banks’ success in Kenya.

Table 4.3: Performance & Internet Banking

<table>
<thead>
<tr>
<th>Statement</th>
<th>N</th>
<th>Mean (M)</th>
<th>Standard Deviation (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet banking allows online payment of bills</td>
<td>74</td>
<td>4.11</td>
<td>1.165</td>
</tr>
<tr>
<td>Internet banking enables transfer of accounts</td>
<td>74</td>
<td>4.12</td>
<td>0.793</td>
</tr>
<tr>
<td>Internet banking enables customers to apply loans online</td>
<td>74</td>
<td>4.34</td>
<td>0.580</td>
</tr>
<tr>
<td>Internet banking enables credit card services</td>
<td>74</td>
<td>4.19</td>
<td>0.805</td>
</tr>
<tr>
<td>Aggregate Score</td>
<td>74</td>
<td>4.19</td>
<td>0.836</td>
</tr>
</tbody>
</table>

Source: Survey Data (2019)

From Table 4.3, the aggregate score was 4.19 which shows that internet banking influence performance of commercial banks in Kenya to a great extent with standard deviation of 0.836. Online banking has been found to be very useful for customers to apply loans online (M=4.34, SD=0.580), this was followed by Internet banking enables credit card services (M=4.19,
SD=0.805), Internet banking enables transfer of accounts (M=4.12, SD=0.793), Internet banking allows online payment of bills (M=4.11, SD=1.165).

These findings align with the results of the Kombe and Wafula (2015) report, the case of the Kenya Commercial Bank, which examined the impact of internet banking on the financial performance of commercial banks in Kenya, revealed that the impact of ICT adoption on the performance of the banking sector refers primarily to time reductions and improvements in quality rather than cost reductions. Research by Mateka et al. (2017) Internet assistance has been shown to have a positive impact on bank sales, operating expenses, loan books and consumer deposits. Research by Van Dinh and Le (2015) also showed that by growing revenue from service operations, the impact of internet banking on bank profitability.

4.4.2 Mobile Banking

The study was assessing how Kenya's commercial banks' results was affected by mobile banking.

Table 4.4: Mobile Banking and Performance

<table>
<thead>
<tr>
<th>Statement</th>
<th>N</th>
<th>Mean (M)</th>
<th>Standard Deviation (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile banking provides convenience services to customers</td>
<td>74</td>
<td>4.53</td>
<td>0.579</td>
</tr>
<tr>
<td>Mobile banking provides security of cash transacted by customers through the phone</td>
<td>74</td>
<td>4.51</td>
<td>0.602</td>
</tr>
<tr>
<td>Through mobile banking services customers are satisfaction with their transactions</td>
<td>74</td>
<td>4.59</td>
<td>0.521</td>
</tr>
<tr>
<td>Mobile banking enables clients to access financial services</td>
<td>74</td>
<td>3.81</td>
<td>1.496</td>
</tr>
<tr>
<td>Aggregate Score</td>
<td>74</td>
<td>4.36</td>
<td>0.799</td>
</tr>
</tbody>
</table>

Source: Survey Data (2019)
The findings in Table 4.4 show that the aggregate score was 4.36 which shows that mobile banking influence performance of commercial banks in Kenya to a very great extent with 0.799 as standard deviation. It was found that to a large extent that through mobile banking services customers are satisfaction with their transactions (M=4.59, SD=0.521), this was followed by mobile banking provides convenience services to customers (M=4.53, SD=0.579), mobile banking enables clients to access financial services (M=4.51, SD=0.602) and that mobile banking allows clients to access financial services (M=3.81, SD=1.496).

These findings are consistent with the findings of the Mutua (2013) study, which examined the impact of mobile banking on the financial performance of commercial banks in Kenya and found a poor positive relationship between mobile banking and financial performance. The Kathuo (2015) study found that since the introduction of M-banking, the number of mobile banking transactions has increased tremendously in the past five years. However, research by Ndii (2014) found that there is a weak positive relationship between mobile banking and the financial performance of commercial banks in Kenya.

### 4.4.3 Agency Banking

The study tried to evaluate how Kenyan commercial banks’ performance was affected by agency banking.

**Table 4.5: Performance & Agency Banking**

<table>
<thead>
<tr>
<th>Statement</th>
<th>N</th>
<th>Mean (M)</th>
<th>Standard Deviation (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agency banking enables deposits of cash</td>
<td>74</td>
<td>3.41</td>
<td>1.470</td>
</tr>
<tr>
<td>Customers can withdraw cash through agency banking</td>
<td>74</td>
<td>4.38</td>
<td>0.947</td>
</tr>
<tr>
<td>Customers can enquire their accounts balance using agency banking</td>
<td>74</td>
<td>3.41</td>
<td>1.727</td>
</tr>
</tbody>
</table>
Customers can request for mini statements 74 3.96 1.078
Customers can collect account opening forms 74 4.80 0.860
Aggregate Score 74 3.99 1.216

Source: Survey Data (2019)

From Table 4.5, the overall score was 3.99, which shows that agency banking significantly influence Kenyan commercial banks’ performance with 1.216 as standard deviation. The study determined that customers can collect account opening forms (M=4.80, SD=0.860) and that customers can withdraw cash through agency banking (M=4.38, SD=0.947) to a large extent had influenced performance. These were followed by the statements that customers can request for mini statements (M=3.96, SD=1.078), agency banking enables deposits of cash (M=3.41, SD=1.471) and that customers can enquire their accounts balance using agency banking (M=3.41, SD=1.727).

These findings are consistent with the Kambua (2015) study that examined how Kenyan commercial banks, performance was affected by agency banking and found that the agent numbers and financial performance have a positive relationship. Study by Mbugua and Omagwa (2017) found that the banking costs of agency banking affects the financial efficiency of commercial banks. The Wanga (2015) analysis also revealed that Kenya's introduction of a banking agency has brought major improvements.

4.4.4 Automated Teller Machine Banking

The study sought to explore the effect of Automated Teller Machine (ATM) banking in Nairobi City County, Kenya, on the performance.
Table 4.6: Automated Teller Machine Banking and Performance

<table>
<thead>
<tr>
<th>Statement</th>
<th>N</th>
<th>Mean (M)</th>
<th>Standard Deviation (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automated Teller Machine (ATM) enhanced control of fraud in the banking sector</td>
<td>74</td>
<td>4.86</td>
<td>0.448</td>
</tr>
<tr>
<td>In Automated Teller Machine, customers can use it easily,</td>
<td>74</td>
<td>4.80</td>
<td>0.405</td>
</tr>
<tr>
<td>Money has always been available in the booth</td>
<td>74</td>
<td>3.97</td>
<td>0.369</td>
</tr>
<tr>
<td>ATM has led to the growth of banking sector</td>
<td>74</td>
<td>4.57</td>
<td>1.061</td>
</tr>
<tr>
<td>ATM has led to profitability of banks</td>
<td>74</td>
<td>4.77</td>
<td>0.820</td>
</tr>
<tr>
<td><strong>Aggregate Score</strong></td>
<td><strong>74</strong></td>
<td><strong>4.59</strong></td>
<td><strong>0.621</strong></td>
</tr>
</tbody>
</table>

**Source: Survey Data (2019)**

Based on Table 4.6, the aggregate score was 4.59 which demonstrates that Automated Teller Machine banking significantly affects the performance of commercial banks in Kenya with a standard deviation of 0.621. The study investigated that Automated Teller Machine (ATM) has to a very great extent enhanced fraud control in banking sector (M=4.86, SD=0.448) and that Automated Teller Machine is easy to use by the customers (M=4.80, SD=0.405). ATM has led to profitability of banks (M=4.77, SD=0.820), ATM has led to the growth of banking sector (M=4.57, SD=1.061) and that money has always been available in the booth (M=3.97, SD=0.369).

This is supported by the results of Vekya (2017), who carried out a study on the impact of electronic banking on the profitability of commercial banks in Kenya and the positive significant relation between bank profitability & ATM transactions has been demonstrated. Study results from Cyprian and Muturi(2015) revealed that real-time gross settlement affects In Kenya,
commercial banks’ financial performance. Research by Abdullai and Nyaoga (2017) also found that the use of ATMs has a positive significant relationship with operational performance.

4.4.5 Performance of Commercial Banks

The study sought to establish the performance of Commercial Banks in terms of ROI and ROE.

Figure 4.4: Performance of Commercial Banks

![Graph showing performance of commercial banks](image)

Source: Survey Data (2019)

The results in Figure 4.3 shows that Return on Investment (ROI) increased from 201 million Kenya shillings in the year 2013 to 329 million Kenya shillings in the year 2016. Return on Equity increased from 194 million Kenya shillings in the year 2012 to 300 million Kenya shillings 2016. Green (2011) found that investment return, revenue and market growth, and benefit are significant factors that are determined by the success of the company. There are several variables in this study, according to these researchers, that are evaluated by success, Market shares, financial performance, standard of organizational performance and productivity, and human resource management.
4.5 Diagnostics Tests Results

4.5.1 Autocorrelation Test Results

Table 4.7: Autocorrelation Test Results

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.949a</td>
<td>.901</td>
<td>.895</td>
<td>.169</td>
<td>1.711</td>
</tr>
</tbody>
</table>

The results in Table 4.7 show that the Durbi-Watson value is 1.711 which is closer to 2 suggesting less autocorrelation. The null hypotheses for the model were therefore rejected, so there is no autocorrelation problem.

4.5.2 Homoscedasticity Test Results

Table 4.8: Homoscedasticity Test Results

| Levene's Test of Equality of Error Variancesa |
|--------|--------|--------|--------|
| F      | df1    | df2    | Sig.   |
| 0.536  | 8      | 65     | 0.946  |

Checking the null hypothesis that the dependent variable's error variance is equal across classes.

The results in Table 4.8 shows that the significance value is ate 0.946 which means that there is no significance difference from variance of the dependent variable is equal across groups. Therefore, this condition is satisfied.
4.5.3 Multi-collinearity Test Results

Table 4.9: Multi-collinearity Test Results

<table>
<thead>
<tr>
<th>Model</th>
<th>Collinearity Statistics</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Tolerance</td>
<td>VIF</td>
</tr>
<tr>
<td>1</td>
<td>Mobile banking</td>
<td>.720</td>
<td>1.390</td>
</tr>
<tr>
<td></td>
<td>Agency banking</td>
<td>.535</td>
<td>1.871</td>
</tr>
<tr>
<td></td>
<td>ATM banking</td>
<td>.506</td>
<td>1.976</td>
</tr>
<tr>
<td></td>
<td>Internet Banking</td>
<td>.578</td>
<td>1.724</td>
</tr>
</tbody>
</table>

The results in Table 4.9 ATM banking is more multi-collinear with VIF value of 1.976, followed by agency banking (1.871), internet banking (1.724) and mobile banking (1.390). This shows that multicollinearity between the two variables was not evident.

4.5.4 Normality Test Results

Table 4.10: Normality Test Results

<table>
<thead>
<tr>
<th></th>
<th>Kolmogorov-Smirnov(^a)</th>
<th></th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>df</td>
<td>Sig.</td>
</tr>
<tr>
<td>Internet banking</td>
<td>.328</td>
<td>74</td>
<td>.000</td>
</tr>
<tr>
<td>Mobile banking</td>
<td>.275</td>
<td>74</td>
<td>.000</td>
</tr>
<tr>
<td>Agency banking</td>
<td>.347</td>
<td>74</td>
<td>.000</td>
</tr>
<tr>
<td>ATM banking</td>
<td>.358</td>
<td>74</td>
<td>.000</td>
</tr>
</tbody>
</table>

\(^a\) Lilliefors Significance Correction

Table 4.10 shows that the p-value for both tests is less than 0.05 using both normality tests, the Kolmogorov Smirnov test and the Shapiro-Wilk tests, so the null hypotheses were rejected since the p-values were small enough and it was concluded that data on both dependent and independent factors were not normally distributed and thus helped to predict dependent variables.
4.6 Regression Analysis

Table 4.11: Regression Model

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.593</td>
<td>.752</td>
<td>.714</td>
<td>1.239</td>
<td>Change Statistics</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>R Square Change</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Change</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>F</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>df1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>df2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sig. F Change</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>a</td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), ATM banking, Internet banking, Agency banking, Mobile banking

Source: Survey Data (2019)

The four independent variables analyzed, as expressed by the modified R square, clarify a factor of 0.714 in the output of commercial banks. This implies, therefore, that other variables not analyzed in this analysis contribute to 0.286 percent of the output of commercial banks.

Table 4.12: Analysis of Variance

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>57.434</td>
<td>4</td>
<td>14.358</td>
<td>19.354</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>105.918</td>
<td>69</td>
<td>1.535</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>163.351</td>
<td>73</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Survey Data (2019)

There was a significance level of the processed data, which is the population parameters 0.000a from the ANOVA statistics in Table 12, which indicates that the data is suitable for concluding the population parameter since the value of significance (p-value) is less than 5 percent. The value estimated was greater than the critical value, showing that the overall model was important (19.354 > 14.358).
Table 4.13: Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>0.587</td>
<td>1.338</td>
<td>1.338</td>
<td>4.738</td>
</tr>
<tr>
<td>Internet banking</td>
<td>0.756</td>
<td>0.229</td>
<td>4.245</td>
<td>1.990</td>
</tr>
<tr>
<td>Mobile banking</td>
<td>0.646</td>
<td>0.631</td>
<td>2.791</td>
<td>3.244</td>
</tr>
<tr>
<td>Agency banking</td>
<td>0.693</td>
<td>0.413</td>
<td>1.279</td>
<td>1.680</td>
</tr>
<tr>
<td>ATM banking</td>
<td>0.705</td>
<td>0.788</td>
<td>3.246</td>
<td>2.895</td>
</tr>
</tbody>
</table>

Source: Survey Data (2019)

The equation of regression resulted to $Y = 0.587 + 0.756X_1 + 0.646X_2 + 0.693X_3 + 0.705X_4$

Holding internet banking, mobile banking, agency banking and ATM to a constant zero, banks performance in Kenya would be $0.587(58.7\%)$. It was decided that a unit increase in internet banking would result in a $0.756$ factor increase in bank performance in Kenya, a $0.646$ factor increase in bank performance in Kenya through a unit increase in mobile banking, a unit increase in agency banking would result in a $0.693$ factor increase in bank performance in Kenya, a unit increase in ATM would result in a $0.705$ factor increase in bank performance in Kenya.

This clearly shows that Kenya’s bank success has a good relationship with internet banking, mobile banking, agency banking and ATMs. In addition, the analysis showed that the P-value in all variables was less than 0.05, which indicates that all the independent variable was statistically important and thus able to conclude for the analysis.

$H_{01}$: Internet banking does not have any significance relationship with Kenyan commercial banks’ performance

Therefore, the null hypothesis was dismissed since $1.990$ t statistics have a p value of $0.00$ less than $0.055$. Yakhlef (2017) suggests that internet banking, as opposed to branches or ATMs,
offers greater economies of scale to process transactions because internet banking is always a
generation of constant costs. Research by Mateka et al. (2017) internet support has been shown
to have a positive influence on bank revenues, operating costs, loan books and customer
deposits. Van Dinh and Le (2015) research has also found that internet banking has had an
impact on banks' profitability, by increasing revenue from service activities.

**HO2: Mobile banking does not have any significance relationship with the performance of
commercial banks in Kenya**

Therefore, the null hypothesis was dismissed because the p value of t statistics 3.244 is 0.00 less
than 0.0554. Mutua (2013) notes that in Kenya, there is a strong positive relationship between
mobile banking and commercial banks' financial success. The Kathuo (2015) study found that
since the introduction of M-banking, the number of mobile banking transactions has increased
tremendously in the last five years. However, research by Ndii (2014) found that there is a weak
positive correlation between mobile banking and commercial banks' financial performance in
Kenya.

**HO3: Agency banking does not have any significance relationship with the performance of
commercial banks in Kenya**

Therefore, the null hypothesis was dismissed because 1.680 t statistics have a p value of 0.00 less
than 0.055. Kanyore et al. (2016) found that the financial impact of listed banks on their financial
results are positively affected by agency banking. Study by Mbugua and Omagwa (2017) found
that commercial banks' financial output is affected by the banking costs of agency banking. The
Wanga (2015) study established Kenya’s introduction of a banking agency has brought major
improvements..
HO4: ATM banking does not have any significance relationship with the performance of commercial banks in Kenya

Consequently, the null hypothesis was dismissed because the p value of t statistics 2.895 is 0.00 less than 0.055. Channels such as the Automated Teller Machine (ATM) and internet banking enable commercial banks with little effort, Mwangi (2017) argues, to reach a broad client base across geographies. Study results from Cyprian and Muturi (2015) showed that the financial performance of commercial banks in Kenya is influenced by real-time gross settlement. Research by Abdullai and Nyaoga (2017) also found that the use of ATMs is associated positively with operational efficiency.
CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSIONS AND
RECOMMENDATIONS

5.1 Introduction

This section presents findings summary, recommendations for policy, a summary of the findings, and practice, conclusions, and suggestions for further studies.

5.2 Summary

The study aimed at investigating the effects of financial innovations on Kenyan commercial banks performance. The study specific objectives were to examine how internet, mobile, agency and ATM banking on organizational performance. The 16 banks which embrace all the four financial innovations from 2013 to 2017 were selected using purposive sampling method. Questionnaires were used to obtain information which was evaluated descriptively using mean and standard deviation. In addition, multiple regression analysis was conducted to illustrate the degree to which variables contribute to each one. As follows, the overview of the results is provided:

The study examined the effect of internet banking on the performance of commercial banks in Kenya and examined the positive and important impact on the performance of organizations. It was found that a unit increase in internet banking would result in a 0.7566 factor increase in bank performance in Kenya. Internet banking highly enables customers to apply loans online, enables credit card services, transfer of accounts and allows online payment of bills.

The study sought to evaluate the effect of mobile banking on the performance of commercial banks in Kenya and to create a positive and important influence on organizations’ performance. It was found that a unit rise in mobile banking would lead to a 0.646 factor increase in bank
performance in Kenya. Through mobile banking services customers are satisfaction with their transactions, mobile banking provides convenience services to customers, security of cash transacted by customers through the phone and allows customers to have access to financial services.

The study tried to evaluate how Kenyan commercial banks’ performance is impacted by agency banking and found a positive and important impact on the performance of organizations. It was found that a unit increase in agency banking would lead to a 0.693 factor increase in bank performance in Kenya. Customers can collect account opening forms, can withdraw cash through agency banking, can request for mini statements, agency banking enables deposits of cash and that customers can enquire their accounts balance using agency banking.

The study aimed to investigate the effect of Automated Teller Machine (ATM) banking on commercial banks’ performance and to investigate a positive and important impact on organizational performance. A unit increase in ATMs was developed to increase bank performance in Kenya by a factor of 0.7055. Automated Teller Machine (ATM) It has improved fraud control in the banking industry to a very large degree, is easy to use by consumers, has contributed to bank profitability, has led to the growth of the banking sector, and money has always been available in the booth.

5.3 Conclusions

On internet banking, this study concludes that the development of the Internet has benefited the banking industry significantly. The Internet has radically altered the way banking networks are built to meet the demands and desires of customers. Due to increased efficiency, effectiveness
and competitiveness, the advent of internet banking has improved the banking industry's performance.

On mobile banking, this study concludes that mobile banking provides commercial banks in Kenya with a strong opportunity to meet many Kenyan mobile phone subscribers who have remained unbanked and unreached due to restricted access to the country's bank branch networks. Entry to the millions of people through mobile banking gives banks the ability to expand by targeting the unbanked population.

On agency banking, this study concludes that agency banking has led to accessibility of financial service to many customer in remote areas and hence an increase in effectiveness and efficiency in service delivery. Agency banking is accessible in terms of agency locations and general national footprint the profitability of commercial banks has increased, leading to an increase in.

On Automated Teller Machine, this study concludes that ATM as an alternative banking channel is important and very successful. The research also concludes that consumers are satisfied with ATM services due to ease of use, transaction costs and security of service, but are not satisfied with the cash dispense of ATM.

5.4 Recommendations for Policy and Practice

On internet banking, this study suggests encouraging the public and companies to use Internet banking, including deposits, payments and money transfers, in their everyday activities. This will lead to a rise in the number of esers of Internet banking and making it more viable for banks to use these services to exercise productivity enhancement strategies to boost bank performance.

On mobile banking, The study recommends that Kenyan commercial banks should make sure that mobile banking convenience and security through written guidelines on mobile banking
convenience and security. In Kenya, commercial banks should reduce the length of the delivery of mobile banking services and boost convenience. Increase funds through the mobilization of deposits. Mobile money transfer services should be periodically managed to better control the capacity of the networks and, in turn, resolve the issue of delays in and customer experience improvement through fast support and lower usage fees.

On agency banking, the study recommends that the number of agents in estates and in rural areas should be increased by commercial banks in Kenya. By reducing the criteria of being a bank agent, this can be achieved. The study also recommends that protection in cities, estates and in rural areas should be strengthened by the government of Kenya. Commercial banks can also reduce the cost of transactions with agency banks. This will help to increase the amount of transactions made through agency banking by my clients. Commercial banks in Kenya can enhance the awareness of customers by making more advertising and increasing marketing activities to increase the adoption of agency banking.

On Automated Teller Machine, This study suggests that banks use personalized software that records relevant ATM card information so that banks can determine whether or not an unauthorized transaction has occurred. The Bank should strengthen the process for ensuring service protection, i.e. guaranteeing the security of information on individual accounts. Bank management should ensure that officers in charge of ATMs must always make ample cash available to allow the machine to dispense cash to customers whenever appropriate.

5.5 Contribution to Knowledge
The researchers investigated the effects of financial developments on the performance of Kenya's commercial banks. The extant empirical literature that was reviewed provided evidence that
indicated that Financial innovations have the potential to increase commercial banks' financial performance and eventually increase their profitability. However, it was clear that most of studies that have empirically interrogated the construct of capability mainly focused on a single dimension and involved organizations, industries and sectors in developed countries, and thus suffered from both conceptual and contextual biases.

The study also contributes to the body of theoretical literature since the findings were consisted with Agency Theory it is highlighted that the possibility of problems emerging if contact between banks and alternative channels is not well controlled. The theory of diffusion of inventions is a concept that explains how new technological and other technologies propagate through societies and cultures, from introduction to wider acceptance.

5.6 Study Limitations

This study was faced difficulties in data collection from respondents such as top managers of the banks since they are senior people and to get access to them is limited due to tight schedules given from their personal assistants. This limitation was mitigated through use of the data collection assistants who booked an appointment with the managers and got access to them before distribution of questionnaires. The study was limited due to respondents fear to disclose relevant information for the study. However, the researcher overcame this by assuring the respondents of strict confidentiality of any information disclosed.

5.7 Suggestions for Further Studies

The study examined the impact of financial innovations on the financial performance of commercial banks in Kenya, with a specific focus on how financial performance is affected by internet banking, mobile banking, agency banking and Automated Teller Machine.
Consequently, the study suggests that further studies should be undertaken to analyze the influence of financial developments on the output of other economic sectors within the country, using various methodologies that were not used in the study because the current study concentrated on commercial banks’ financial performance.
REFERENCES


APPENDICES

Appendix I: Letter of Introduction

Naomi Wanja Ireri

P.o Box 43844
Kenyatta University
Nairobi

Dear Participant,

RE: A LETTER OF INTRODUCTION TO THE RESPONDENT

In line with my master’s degree program, am expected to conduct a research report on 'Financial Innovation and Performance of Commercial Banks in Kenya' as part of the degree award requirement. I therefore, seek your assistance in completing the attached questionnaires.

The results of the study will be for research purposes and greatest confidentiality will be ensured. Only summary results will be made public. Access to those records will only be by my university.

Yours Faithfully

Naomi Wanja Ireri
Student, Kenyatta University
Appendix II: Questionnaires

Section A: Demographic Data

1. State your gender: Male { } Female { }

2. To what level of education have you achieved so far?
   Diploma { } First Degree { }
   Masters { } Post Graduate Diploma { }

3. State your age years
   Less than 35 { } 35 to 44 { }
   45 to 55 { } More than 55 { }

   State the number of years that you worked
   Below 5 { } 5 to 9 { }
   10 to 15 { } More than 15 { }

Section B: Financial Innovation

This segment seeks to assess the level of use of internet banking, mobile banking, agency banking and ATM banking on performance of commercial banks. To rate their frequency of use, five options corresponding to these statements are presented: (1) Very Often, (2) Often, (3) Sometimes (4) Never

Internet Banking

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet banking allows online payment of bills</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet banking enables transfer of accounts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet banking enables customers to apply loans online</td>
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<td>Internet banking enables credit card services</td>
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</tbody>
</table>
**Mobile Banking**

<table>
<thead>
<tr>
<th>Statement</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Mobile banking provides convenience services to customers</td>
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<tr>
<td>Mobile banking provides security of cash transacted by customers through the phone</td>
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<tr>
<td>Though mobile banking services customers are satisfaction with their transactions</td>
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<tr>
<td>Mobile banking allows customers to have access to financial services</td>
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</table>

**Agency Banking**

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Agency banking enables deposits of cash</td>
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<tr>
<td>Customers can withdraw cash through agency banking</td>
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<tr>
<td>Customers can enquire their accounts balance using agency banking</td>
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<tr>
<td>Customers can request for mini statements</td>
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<tr>
<td>Customers can collect account opening forms</td>
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</table>

**ATM Banking**

<table>
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</thead>
<tbody>
<tr>
<td>The ATM has increased fraud control in the banking sector.</td>
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<tr>
<td>The ATM machine is easy for consumers to use.</td>
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<td>There was still money available at the booth.</td>
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<tr>
<td>The growth of the banking sector has led to the ATM</td>
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<tr>
<td>ATM has added to banks' profitability</td>
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</tbody>
</table>
Section F: Performance of Commercial Banks

What percentage of your target did you meet in the last 5 years regarding Return on Investment (ROI) and Return on Equity:

<table>
<thead>
<tr>
<th>Year</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
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</thead>
<tbody>
<tr>
<td>ROI</td>
<td></td>
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<tr>
<td>ROE</td>
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</tbody>
</table>
Appendix III: Graduate School Approval Letter and NACOSTI Permit

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 810901 Ext. 4150

Internal Memo

FROM: Dean, Graduate School
TO: Naomi Wanja Ireri
     C/o Accounting & Finance Dept.

DATE: 15th April, 2019
REF: D53/OL/EMB/26576/2014

SUBJECT: APPROVAL OF RESEARCH PROPOSAL

We acknowledge receipt of your revised Research Proposal as per our recommendations raised by the Graduate School Board of 27th March, 2019 entitled “Financial innovations and performance of commercial banks in Nairobi City County, Kenya”.

You may now proceed with your Data Collection, Subject to Clearance with Director General, National Commission for Science, Technology and Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking Forms per semester. The form has been developed to replace the Progress Report Forms. The Supervision Tracking Forms are available at the University’s Website under Graduate School webpage downloads.

Thank you.

ELIJAH MUTUA
FOR DEAN, GRADUATE SCHOOL

C.c. Chairman, Department of Accounting & Finance

Supervisors:

1. Ms. Gladys Kimutai
   C/o Department of Management Science
   Kenyatta University
KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

Our Ref: D53/OL/EMB/26376/2014

DATE: 15th April, 2019

Director General,
National Commission for Science, Technology
and Innovation
P.O. Box 30623-00100
NAIROBI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR NAOMI WANJA IRERI— REG. NO.
D53/OL/EMB/26376/2014.

I write to introduce Naomi Wanja Ireri who is a Postgraduate Student of this University. The student is registered for MBA degree programme in the Department of Accounting & Finance.

Naomi intends to conduct research for a MBA Project Proposal entitled, “Financial innovations and performance of commercial banks in Nairobi City County, Kenya”.

Any assistance given will be highly appreciated.

Yours faithfully,

[Signature]

PROF. ELISHABA KIMANI
AG. DEAN, GRADUATE SCHOOL

EM/12
Ref: No. NACOSTI/P/19/65372/30351

Date: 21st May, 2019

Naomi Wanja Ireri
Kenyatta University
P.O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *Financial innovations and performance of Commercial Banks In Nairobi City County, Kenya* I am pleased to inform you that you have been authorized to undertake research in Nairobi County for the period ending 21st May, 2020.

You are advised to report to the County Commissioner and the County Director of Education, Nairobi County before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit a copy of the final research report to the Commission within one year of completion. The soft copy of the same should be submitted through the Online Research Information System.

BONIFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Nairobi County

The County Director of Education
Nairobi County
THIS IS TO CERTIFY THAT:
MS. NAOMI WANJA IRERI
of KENYATTA UNIVERSITY, 0-100
NAIROBI, has been permitted to conduct
research in Nairobi County

on the topic: FINANCIAL INNOVATIONS
AND PERFORMANCE OF COMMERCIAL
BANKS IN NAIROBI CITY COUNTY, KENYA

for the period ending:
21st May, 2020

Applicant’s Signature

Director General
National Commission for Science,
Technology & Innovation

THE SCIENCE, TECHNOLOGY AND
INNOVATION ACT, 2013

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

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

National Commission for Science, Technology and Innovation
P.O. Box 30623 - 00100, Nairobi, Kenya
TEL: 020 400 7000, 0713 788787, 0735 404245
Email: dg@nacostl.go.ke, registry@nacostl.go.ke
Website: www.nacostl.go.ke

Serial No. A 24672
CONDITIONS: see back page
Appendix IV: Turnit in Report

FINANCIAL INNOVATIONS AND PERFORMANCE OF COMMERCIAL BANKS IN KENYA by Naomi Ireri

From MBA PROPOSALS AND PROJECTS (MBA PROJECT SUPERVISION)

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7
1% match (Internet from 31-Mar-2019)