

**EFFECTS OF BANKING SECTOR INNOVATION ON FINANCIAL
INCLUSION IN KENYA**

BY


WINFRED WANGARI WANJUI

**A RESEARCH PROJECT PRESENTED IN PARTIAL FULFILMENT OF
THE REQUIREMENTS FOR THE AWARD OF DEGREE OF MASTERS
OF BUSINESS ADMINISTRATION, SCHOOL OF BUSINESS, UNIVERSITY
OF NAIROBI.**

NOVEMBER 2020

DECLARATION

I declare that this Research Project is my original work and has not been presented in any learning institution for the award of any degree or for other considerations.

Signed.......... Date08/10/2020.....

WINFRED WANGARI WANJUI

REG. NO D61/62884/2010

This research project has been presented for examination under my authority as a university supervisor

Signed.......... Date 8/12/2020.....

DR. DUNCAN ELLY OCHIENG (PhD, CIFA)

Lecturer

Department of Finance and Accounting

ACKNOWLEDGEMENT

I wish to acknowledge God for giving me health and resources needed to undertake this project. I also want to give a special appreciation to my supervisor, Dr. Duncan Elly Ochieng', for his guidance and support during the entire period of this project.

Finally, many thanks to the academic and administrative staff of the Department of Business Administration, University of Nairobi for their support.

Feel appreciated.

DEDICATION

This research project is dedicated to my family for the continued support they granted me throughout this course.

TABLE OF CONTENT

DECLARATION.....	ii
ACKNOWLEDGEMENT.....	iii
DEDICATION.....	iv
TABLE OF CONTENT.....	v
LIST OF TABLES.....	vii
LIST OF FIGURES.....	viii
ABBREVIATIONS AND ACRONYMS.....	ix
ABSTRACT.....	x
CHAPTER ONE: INTRODUCTION.....	1
1.1 Background of the Study.....	1
1.1.1 Banking Sector Innovations.....	2
1.1.2 Financial Inclusion.....	3
1.1.3 Banking Sector Innovations and Financial Inclusion.....	4
1.1.4 The Banking Sector in Kenya.....	5
1.2 Research Problem.....	7
1.3 Research Objectives.....	9
1.4 Value of the Study.....	9
CHAPTER TWO: LITERATURE REVIEW.....	11
2.1 Introduction.....	11
2.2 Theoretical Review.....	11
2.2.1 Diffusion of Innovation Theory.....	11
2.2.2 The Schumpeter Theory of Innovation.....	12
2.2.3 Task Technology Fit Theory.....	14
2.3 Determinants of Financial Inclusion.....	15
2.4 Empirical Studies.....	17
2.5 Conceptual Framework.....	20
2.6 Summary of the Literature Review.....	21
CHAPTER THREE: RESEARCH METHODOLOGY.....	24

3.1 Introduction	24
3.2 Research Design	24
3.3 Population.....	24
3.4 Data Collection.....	24
3.5 Data Analysis	25
3.5.1 Diagnostic Tests	26
CHAPTER FOUR: DATA ANALYSIS AND DISCUSSION.....	27
4.1 Introduction	27
4.2 Response Rate	27
4.3 Descriptive Statistics.....	27
4.4 Diagnostic Tests	28
4.4.1 Autocorrelation Test	29
4.4.2 Multicollinearity Test	29
4.4.3 Normality Test.....	30
4.5 Inferential Statistics.....	31
4.5.1 Relationship between Banking Sector Innovations and Financial Inclusion	31
4.5.2 Regression Results showing Effects of Banking Sector Innovations on Financial Inclusion	32
4.6 Interpretation and Discussion of Findings	35
CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS	37
5.1 Introduction	37
5.2 Conclusions	37
5.3 Recommendations of the Study	37
5.4 Limitations of the Study.....	38
5.5 Suggestions for Further Research	38
REFERENCE.....	39
APPENDICES.....	44
Appendix I: List of Commercial Banks in Kenya.....	44
Appendix II: Data Collection Sheet	45
Appendix III: Secondary Data Collected	46

LIST OF TABLES

Table 2.1: Summary of the Literature Review.....	21
Table 4.1: Means and Standard Deviation.....	27
Table 4.2: Autocorrelation Test.....	29
Table 4.3: Multicollnilarity Test.....	29
Table 4.4: Correlation Matrix.....	31
Table 4.5: Model Summary.....	32
Table 4.6: Analysis of Variance.....	33
Table 4.7: Regression Beta Coefficients and Significance.....	34

LIST OF FIGURES

Figure 2.1: Conceptual Framework	20
Figure 4.1: Normality Test.....	30

ABBREVIATIONS AND ACRONYMS

TTT	Task Technology Theory
ATM	Artificial Money Transfer Machine
FDI	Foreign Direct Investment
TTF	Task Technology Fit Theory
SMS	Short Message Service
CBK	Central Bank of Kenya

ABSTRACT

The banking sector innovations are bringing millions of new customers and especially millions of people who are unbanked and have access to the mobile phone are increasingly getting banking services. However, it is also important to acknowledge that the increase in the financial innovations has not directly translated to the effective use of the banks. The present study sought to establish the relationship and effect of banking sector innovations and financial inclusion in Kenya. The study adopted descriptive survey design targeting 43 commercial banks where census was used. Secondary data was collected over a five-year period (2015-2019) and the analysis was done using descriptive and inferential statistics. The findings of the first objective indicated that banking sector innovations had strong and positive relationship with financial inclusion. For the second objective, the study noted that only mobile and internet banking ($p < 0.05$) had significant effect on financial inclusion after controlling for the size of commercial banks. The study concluded that banking sector innovations drive financial inclusion among Kenyan commercial banks. The study recommended that the Central Bank of Kenya should formulate sound prudential guidelines and regulations that would promote uptake of innovations in the banking sector. The innovations launched or proposed by the commercial banks in Kenya should readily be approved by the CBK. Based on their sizes (large, medium and small) also referred to as the tier system of classification, the management of the commercial banks should give more weight on mobile and internet banking as this would significantly drive financial inclusion of the commercial banks.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Globally the concept of the financial inclusion refers to the processes and the mechanisms that ensures that the necessary financial products and services that are required by the overall economic sector including the vulnerable groups of people within the economic sector; including the low income are accessed (Beck, 2016). The mainstream institutional bodies and players who are involved should ensure that this is done at an affordable cost and through fair and transparent manner (Byegon, 2020). The concept of the financial inclusions facilitates the growth and the general expansion of the economy and especially the financial sector. Financial inclusion therefore fosters a condition and state of economy where everyone has access to the necessary and appropriate financial services and products and are therefore in a position to manage their financial resources effectively without limitations (Byegon, et al., 2019). Financial inclusion therefore is a call and a responsibility to the financial institutions to ensure that the financial products and services are made available to the poor and the low-income earners at affordable cost; this is achieved through expanding the banking services. The extensions of the financial services therefore allows the low income and the less disadvantaged to make the correct financial decisions (Gwalani, 2014).

The present study was anchored on diffusion of innovation theory; Rogers coined the theory of diffusion of innovation in 1962. The theory has its foundation anchored in communication and therefore attempts to explain how an idea or services or a product gains acceptance among the people and therefore spreads considerably among the population or the social systems, the concept behind the theory is that people take up the new ideas or the innovation and therefore its spread and acceptance (Rogers, 2003). The present study will also be anchored on the

Schumpeter Theory of innovation; Schumpeter coined the theory in 1928. The theory emphasizes the role of the entrepreneurship and the need to seek out value generating opportunities and activities that would therefore expand and transform the circular flow of income. The study also utilized the Task Technology Fit theory (TTF) (Schumpeter, 1928), which contends that the innovation is likely to have influence on the individual especially when the capabilities of the technology matches the duties and the tasks that the end users need to perform tasks.

Banking sector innovations are used to refer to the technological innovations that help to drive the economy. The banking sector plays the catalytic role in developing the economy (Jeong, 2013). Following the financial experience of the developed countries, there has been the governments shift with regards to the industrial policy making towards economic strategy that is driven by the technological innovations (Jukan, 2016). The banking sector in Kenya has therefore developed additional mobile banking technologies that has facilitated the financial inclusions. The banking sector is also developing the electronic money transfers that allows the users to benefit from the ease of access of the financial services (Kiplangat, 2017). The other recent technological development is the internet banking transactions allowing for access to the financial services at the click of a button. There are also ATM deposits and withdrawals that allows for quick access to financial services. Online account opening is also making it easy for vast majority to own an account with the bank and therefore financial inclusion (Kostopoulos, 2011).

1.1.1 Banking Sector Innovations

The concept banking sector innovations refers to the technological innovations that are taking place within the banking sector. There are several waves of the technological innovations that are

apparently taking place in all industries and banks are not left behind (Lamb, 2016). Innovation within the banking sector has gone through a series of incremental changes coupled with radical innovation breakthroughs that have seen the banking sector conduct an overhaul in the way of its service delivery (Meihui, 2015).

The primary role of the innovations is to ensure the survival of the sector and withstand the competitions. The banking sector innovations are bringing millions of new customers and especially millions of people who are unbanked and have an access to the mobile phone are increasingly getting banking services (Musango, 2018). Through the innovations in the banking sector, there are series of services and products that are being diversified to meet the needs of the customers and therefore providing them with rich and complex multiple choices for their exploitation. However, it is also important to acknowledge that the increase in the financial innovations has not directly translated to the effective use of the banks. The path taken from opening the bank account to the usage of the accounts is still uncharted course (Ngumi, 2013).

1.1.2 Financial Inclusion

The concept of the financial inclusion enhances higher financial savings among the vast majority of the population especially from the bottom of the pyramid of the vast unbanked population (Ozili, 2018). The concept of the financial innovations therefore offers access to the formal savings habits and arrangements among the populations, which therefore results in the expansion in investment and credit by the banking institutions and promoting the saving mobilizations among the population at the bottom base of the pyramid (Qamruzzaman, 2019).

Financial inclusion promotes poverty eradication since the process promotes the bridging of the financial gap between the unbanked sector of the economy and the sources of the livelihoods and the sources of income that can therefore be enhanced when the credit facilities are expanded and

advanced which ultimately leads to the sustainable livelihoods (Servon, 2018). The financial inclusion allows the weaker section of the economy to get access to the financial resources, which allows other business startups, which support the livelihood of the population.

Financial inclusion is important therefore towards improving the overall living conditions among the poor farmers and other vulnerable groups. The concept of the financial inclusion is therefore considered being a pro-client concept and includes better access services and better products (Sethi, 2018)

1.1.3 Banking Sector Innovations and Financial Inclusion

Banking sector innovation is promoting the financial inclusion by ensuring that the unbanked populations who occupy the bottom of the pyramid have easy access to the financial services and therefore experience financial breakthrough through entrepreneurial activities (Sharma, 2016).

Banking sector innovation allows the access of the banking services on a single handheld device such as the mobile phones. Banks have introduced mobile banking which allows for deposits and withdrawals (Shofawati, 2019).

People with low income from the bottom of the pyramid can access credit facilities and this promotes startups that promotes the economic growth among the beneficiaries. The banking sector is expected to promote the financial inclusion through affordable means to the vast majority of the populations through a fair and transparent way (Siddik, 2015). The development of the electronic money transfers within the financial sector promotes the financial inclusion among the vast majority.

Other technological innovations that have been introduced by the banking sector includes ATM deposits and withdrawals that has brought the financial services closer to the people (Singh,

2015). Internet banking allows the users to access the bank financial services online without having to go through the hustle of having to travel into the banking hall. The radical incremental innovations within the banking sector is slowly transforming the economy with improved gross domestic product (Thairu, 2016). The financial inclusion is therefore improving the overall living standards of the vast majority of the unbanked citizens since they have now access to loan and credit facilities that enhance the initiation of startups.

1.1.4 The Banking Sector in Kenya

There are tremendous dynamisms that have taken place within the financial sector in Kenya with regard to what the banking sector is doing. There are several changes that have taken place in the Kenyan banking sector that have transformed the financial sector, there has been the development and the expansion of the money related items and products (Bank, 2014). The changes are promoting the expansion on the productivity of the monetary frameworks and therefore improving the financial inclusion in Kenya. There are several reasons that are attached to the expansions and innovations within the banking sector; decreased administrative costs, decreased insolvency costs and customizations among others (Yang, 2018). A tremendous turbulent budgetary condition has raised the effective advancements and achieving the outstanding aggressive achievement and promotes the favorable conditions that promotes the banking sector innovations. The banking sector innovation across the globe has greatly and significantly affected the financial sector market by opening up new and big opportunities for the respective stakeholders and therefore opening up the new markets and enhancing the development of the new products within the financial sector (Zhang, 2015).

The banking sector innovation is promoting a series of radical changes, which therefore bring about positive changes in the financial sector. The banking sector innovations transform the

financial outcomes and promotes diversifications and the international monetary transfers. The changes that happen due to the innovations promotes funding of the financial systems through which the financial assets to the total assets ratios are gradually increasing (Beck, 2016). Further, the international monetary setting and establishments is also experiencing an extreme severe transformation with regards to the financial systems and economies, this has been happening because of the following: the changing globalization and technology and the opening up of budgetary field among other changes. It's against this background of the changes that the present study seek to investigate into the effects of the banking sector innovations on the financial inclusion in Kenya (Beck, 2016)

The banking sector in Kenya contains 44 banks (these includes the 43 banks and 1 mortgage financing firm). The financial providers in Kenya can be categorized into three categories. The categorization is done based on the composite average which includes the resources that have been invested in these institutions (Bank, 2014). The resources include the operating capital and customer deposits including other assets that supports the performance of the banks (Kiplangat, 2017). The sizes of the banks in Kenya are categorized based on their respective weighted average; that is a commercial bank with a weighted average ranking of five is ranked to be more superior, banks with the weighted average ranking of between one to five are considered to be medium while banks with weighted average ranking below one are considered and classified as small banks (Qamruzzaman, 2019).

The banking sector in Kenya has gone through several financial transformations and changes over the past few years. The changes have enhanced expansions of many money related products, which have generally resulted into productivity of the budgetary framework (Shofawati, 2019). Eminent changes within the financial sector has resulted into increase in the

number of the banking institutions, which has increased tremendously. The banking sector is supporting the achievement and the implementation of the vision 2030. The banking sector has led to the development of the reserve funds and supports the foreign direct investments (FDI). The banking systems have come up with the utilizations of the mobile phone systems, online, operational versatility without forgetting the overriding goal of building trust with the customers (Ngumi, 2013).

1.2 Research Problem

The concept of the financial inclusion includes the processes and the mechanisms that ensure that the necessary financial products and services that are required by the overall economic sector including the vulnerable groups of people within the economic sector including the low income are accessed (Beck, 2016). The mainstream institutional bodies and players who are involved should ensure that this is done at an affordable cost and through fair and transparent manner. The concept of the banking sector innovations includes the technological innovations that are taking place within the banking sector. There are several waves of the technological innovations that are apparently taking place in all industries and banks are not left behind (Byegon, et al., 2019). Innovations within the banking sector have gone through a series of incremental changes coupled with radical innovation breakthroughs that has seen the banking sector conduct an overhaul in the way of its service delivery (Beck, 2016).

There are several changes that have taken place in the Kenyan banking sector that have transformed the financial sector and there has been the development and expansion of the money related items and products. The changes are promoting the expansion on the productivity of the monetary frameworks and therefore improving the financial inclusion in Kenya (Servon, 2018). There are several reasons that are attached to the expansions and innovations within the

banking sectors; decreased administrative costs, decreased insolvency costs and customizations, among others. There is a tremendous turbulent budgetary condition that has raised the effective advancements and achieving the outstanding aggressive achievement and promotes the favorable conditions that enhances the banking sector innovations. However, despite the banking sector innovations that has taken place, the uptake of the banking products like opening of accounts is still slow among vast majority of the population (Sharma, 2016).

Globally studies have been done; Qamruzzaman (2019) did a study on the financial innovations and financial inclusions nexus in South Asian countries; Evidence from the Symmetric and Asymmetric panel investigations. The study findings revealed that there is positive association that exists between the financial innovation and financial inclusion, which was observed in the long run and short-run (Qamruzzaman, 2019). Meihui (2015) did a study on the financial inclusion from the perspective of the basic banking services and the consumer credit: a comparative study of law and regulation in the United Kingdom and China (Meihui, 2015). The study revealed that to accelerate the financial inclusion with respect of consumer credit, alternative credit facilities on the consumer market are supported by law and regulation, further the study revealed that funding should be made available and subsequently the regulatory barriers be removed (Zhang, 2015).

Local studies have been done; Ngumi (2013) did a study on the effects of the bank innovations on the financial performance of the commercial banks in Kenya. The study findings revealed that bank innovations had statistically significant influence on the income, return on assets, profitability and also the customer deposits of commercial banks in Kenya (Ngumi, 2013). Thairu (2016) did a study on the effects of the innovations on the financial inclusion initiatives by banks in Nakuru town, Nakuru County. The study revealed

that technological innovations increase sales and also leads to the profit increment and therefore provides better and increased quality of service and assures the survival of the banking institutions (Thairu, 2016).

In reference to the studies cited above, there exists a gap in literature that this study sought to address by answering the following question: What are the effects of banking sector innovations on the financial inclusion in Kenya?

1.3 Research Objectives

The study was guided by the following objectives:

- i. To establish the relationship between the banking sector innovations and financial inclusion in Kenya.
- ii. To investigate the effects of banking sector innovations on the financial inclusion in Kenya.

1.4 Value of the Study

The study would be of significance to the banking institutions, the research advises the management of the banking institutions on the necessary steps that should be taken to promote financial inclusion by enhancing decision making with regards to the necessary changes that would enhance development of new innovative financial products and services.

The study would be of value to the policy makers dealing with the financial sector; the policy makers would be adequately advised on the necessary policies that are aligned to the government regulations and will promote the development of the financial products and services that will promote financial inclusion and promote economic growth.

The study would also be of value to the future researchers and scholars. The study would serve as a reference point for literature and theoretical concepts with regards to the topic of the study.

The study has provided the knowledge gaps with reference to the studies done so far. The current study would therefore add to the already existing knowledge.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The present chapter presents the literature review, which is a collection from other scholars. The chapter is organized in theoretical review; where diffusion of innovation theory, Schumpeter theory and task technology fit theory are discussed. The chapter also discusses the banking sector innovations, empirical review of studies, the conceptual framework and summary of the knowledge gaps or literature review.

2.2 Theoretical Review

A theory is considered to be a reasoned statement or other group of statements. These statements are supported by certain evidences that are used to emphasize and explain on certain phenomenon. A theory attempts to explain certain specific relationships that exists between the phenomena. Therefore, there is need to be conversant with the theories that relate directly to their respective studies (Schumpeter, 1928). Theories therefore provide the generalized explanation to the specific occurrences. Therefore, the theoretical frameworks are necessary concerning the fact that the researcher is guided on the specific study variables and therefore lays a foundation for the data analysis and aids about the selection of the appropriate study design. The present study will be underpinned by the following theories: diffusion of innovation theory, Schumpeter theory of innovation and task technology fit theory.

2.2.1 Diffusion of Innovation Theory

The theory of diffusion of innovation was coined by Dillon and Morris (1996) and the theory has also received endorsements from Rogers (1983). The theory proposes certain factors that are influencing the diffusion of the innovations which are not limited to the levels at which the technology offers the improvements over the presently available tools which are also described

as the relative advantages. There is also the factor that includes the compatibility and consistency with regard to the social practices and other norms among the people that utilize it. The theory also proposes complexity as a factor that promotes the diffusion of the innovations. Complexity relates to the ease of use of the technology, which is measured through the ease in learning the innovations (Dillon, 1996). Trialability is another factor, which concerns the opportunity to try the new innovation before deciding to use the innovation.

The theory has received certain criticism due to its weaknesses; the theory is based on subjective factors with regards to how it judges the use of the innovations (Rogers, 2003). Further the subjective characteristics therefore can be viewed differently based on the individual overall perceptions. Several scholars and theorist have concurred that attitudes towards certain objects and the attitudes regarding certain particular behavior with regards to other objects can be different depending on the individual perceptions. Image as a self-perception that influences the adoption of the technology has also been viewed as being subjective. The theory has also been criticized for failing to bring out description on how the varying variable does interact especially when the innovations are diffused across the organizations (Dillon, 1996).

The theory is relevant to the present study since the theory is premised on the innovation-decision making of the organizations. The banking sector is making decisions premised on the organization capability to implement the necessary technological innovation that fosters financial inclusion among the consumers.

2.2.2 The Schumpeter Theory of Innovation

The Schumpeter theory of innovation was first coined by Schumpeter (1928); the theory postulates that the research and development engineers and the independent entrepreneurial inventors operating in large corporations came up with an opportunity that led to the innovations

and created new profits for their innovations (Schumpeter, 1928). The theory further explains that following the innovations, there was group of imitators who were attracted by the large profit margins after the innovations. There was emergence of the Kondratiev cycles that began the business cycles over and over again, this happened just before the economy could equilibrate the new innovations as proposed by the Schumpeter (Porter, 2004).

The theory proposition is that the role of entrepreneurship is to seek out opportunities through the value generating activities that eventually expands and transforms the circular flow of the income. However, the theory postulates that this was done through establishing a clear distinction between the discovery and innovations on one hand and commercialization and the entrepreneurship being on the other hand (Schumpeter, 1928). The discovery of the distinction between the inventions and the innovations created an innovation model where the independent inventors discovered the potential inputs with regards to the entrepreneurial organizations.

However, the theory has been criticized due to its limitations and weaknesses; Schumpeter failed to explain the origin of the innovations. He successfully managed to bring out the importance of the theory and the role that the theory does with regards to promoting the expansion of the innovation but failed to explain the source of the innovation. Something that has received criticism from other scholars and theorists. However the theory has received support and endorsement from Porter (1992) who considered innovation as being a long term economic growth for the country and promotes competitive advantages (Porter, 2004).

The theory is relevant to the present study since it emphasizes on the need for the innovations that are expected within the financial sector. The theory endorses that innovations within the

banking sector promotes high profits for the banking sector while benefiting the consumer through enhanced financial inclusion that enhances livelihood among the users.

2.2.3 Task Technology Fit Theory

The theory of task technology fit was first coined by Goodhue and Thompson (1995); the theory contends that the innovation is likely to have influence on the individual especially when the information communication capabilities of the technology matches the duties and the tasks that the end users' needs to perform. The theory is premised on the ideal factors that makes the innovations easily acceptable; these includes the authorization, the compatibility of the technology, eases of use and training, production timeliness coupled with the systems reliability and the relationship with the other users (Goodhue, 1995).

According to the theory, the success of any innovation depends on how the innovation technology information systems are connected to best fit between the technology and the successes has been attached to the individual performance. However, the theory has been criticized for its weakness especially with regards to the specific questions that are being asked with regards to the applicability of the task technology fit on the mobile information systems which have remained unanswered (Goodhue, 1995). Further, the application of the innovation according to this theory depends on the individual performance, which makes its applicability to be conditional and subjective on factors that are beyond the human control (Porter, 2004).

The theory is relevant to the present study that focuses on the effects of banking sector innovations on the financial inclusion. The theory proposes innovations on the mobile information systems that allows the integration of the financial services and promotes financial inclusion. Further, the theory suggests the applications of the technology that is relevant with regards to the performance of the end users and allows the adoptions of the banking technology

that allows the unbanked with low income to access financial services through mediums that are easily accessible to them and they can use with a lot of ease (Porter, 2004). Due to the observable features of the theory, it has become compatible with business tasks and the related technological needs and therefore easy to assess the applicability of the task technology that can fit well with the mobile technologies and can be used in the mobile contexts.

2.3 Determinants of Financial Inclusion

There are several innovations that banking sectors are initiating to facilitate financial inclusion. The banks are investing in ATM machines; the introduction of the ATM machines has reduced the cost implication associated with deposits and withdrawals. The ATM machines are equally distributed in major cities and therefore provides easy access to the financial services among many and thus promoting financial inclusion (Beck, 2016). The banks are therefore migrating the clients from high cost delivery systems. Studies have revealed that ATM surcharges is positively connected with the deposit market shares among the major large banks, however its negatively related to the deposits with regards to the smaller financial institutions.

Different financial institutions have adopted different financial distribution channels in order to thrive and reach vast majority of the customers especially the low income at the base of the pyramid (Bank, 2014). Banks are therefore adopting different electronic channels of distributions towards the singular objective of increasing profit margin and increasing the financial inclusions. Banks are now integrating the financial services through the internet and mobile banking in order to achieve the excellent goals. The banking sector is making use of the SMS banking systems among their customers in the wider scale and thus enhancing financial inclusion and promoting the increased profit margins for the banking institutions (Dillon, 1996).

Several studies have revealed that majority of the customers are using the websites for the bank of their choices to access the financial services including checking the balances in their accounts. Customers are free to interact with the financial services that are offered by the banking institutions such as the after sales services and the buy products (Singh, 2015). Internet banking is therefore facing an increased acceptance among the users with regards to gaining access to the financial services. Customers are also able to get access to credit facilities, which enhances financial inclusion (Byegon, et al., 2019). As a result of the development of the wide range of the secured transactional technologies, majority of the banking institutions are reverting to the internet banking as a transaction medium through which information is passed to the customers.

Common banking procedures can now be performed through the internet banking services, customers are able to pay bills, transfer funds, printing of bank statements and checking their respective account balances. The internet banking also allows the users to write cheques online using computers (Beck, 2016). The use of e-banking or online banking has been used as a delivery channel through which majority are conducting the banking services and activities. The use and utilization of the e-banking allows the financial transfers among the users, permits payment of bills and checking account balances and therefore promoting financial inclusion. The use of mobile banking has also been utilized through the use of the mobile phones. Majority of the unbanked are now able to get access to credit facilities through their mobile phones and thus incorporating financial inclusion (Sethi, 2018).

Consequently, the banking sector innovation has promoted a series of the radical changes, which therefore promotes about positive changes in the financial sector. The banking sector innovations transforms the financial outcomes and promotes diversifications and the international monetary transfers (Singh, 2015). The changes that happens due to the innovations promotes funding of the

financial systems through which the financial assets to the total assets ratios are gradually increasing. Further the international monetary setting and establishment is also experiencing an extreme severe transformation with regards to the financial systems and economies, this has been happening because of the following; the changing globalization and technology and the opening up of budgetary field among other changes (Zhang, 2015).

Other determinants of the financial inclusion would be the rural population size, the income levels of the people, unemployment rates and interest rates charged amongst others (Wokabi & Fatoki, 2019). The study showed that there was an inverse relationship in all except on the income levels of the people, whereby the more they earned or the higher the gross domestic product index, then the higher the levels of inclusion. Additional determinants would include age and the literacy levels in the community.

2.4 Empirical Studies

There are several studies that are connected to the effects of the banking sector innovations on the financial inclusion.

Thairu (2016) did a study on the effects of the technological innovations on the financial inclusion initiatives by the banks in Nakuru town, Nakuru County. The main objective of the study was to examine the effects of technological innovations on financial inclusion initiatives by the banks within Nakuru town in Kenya. The study examined the effect of agency banking on financial inclusion initiatives by banks in Nakuru County. The study adopted the use of the descriptive research design. The targeted population was the commercial banks within Nakuru town. The study made use of the questionnaires to collect primary data. All 29-bank questionnaires were filled thus 100% response rate. From 140 customer questionnaires only 120 were filled represented by 87.5% response rate. The

study revealed that the technological innovations increase sales, and that they lead to the increment of profit; they provide better, increase quality of service and also assures the survival of the institutions within the banking sector (Thairu, 2016).

Ngumi (2013) did a study on the effects of the bank innovations on financial performance of the commercial banks in Kenya. The study was guided by the following objectives; to determine the effect that bank innovations have on total income of commercial banks, to establish the effect that bank innovations have on return on total assets of commercial banks, to establish the effect that bank innovations have on profitability of commercial banks, to determine the effect of bank innovations on customer deposits in Kenyan commercial banks, to establish the moderating influence of mobile phone subscription on financial performance of commercial banks and to establish the influence of internet subscription on financial performance of commercial banks. The study used descriptive survey research design (Ngumi, 2013). The target population of the study was at institutional level where the study targeted 44 licensed commercial banks in Kenya. The findings of the study revealed that the bank innovations had statistically significant influence on income, return on assets, profitability, and customer deposits of commercial banks in Kenya and tests for significance showed that the influence was statistically significant (Ngumi, 2013).

Zhang, Meihui (2015) did a study on the financial inclusion from the perspective of the basic banking services and the consumer credit; this was a comparative study of the law and regulation within the United Kingdom and China. The study was a comparative study in the United Kingdom and China. The study revealed that without enough incentive, the banks can be less motivated in this progress (Zhang, 2015).

Kiplangat (2017) did a study on the financial innovations on the financial performance of commercial banks in Kenya. The study was guided by the following objectives; to determine the extent to which the online banking affects financial performance of commercial banks, to establish the influence of electronic funds transfer on financial performance of commercial banks, to find out the effects of mobile banking on financial performance of commercial banks, to investigate the effects of agency banking on financial performance of commercial banks. The study finding revealed that the innovation significantly affected the financial performance . (Kiplangat, 2017).

Qamruzzaman (2019) did a study on the financial innovation and the financial inclusions nexus in South Asian countries, evidence from the symmetric and asymmetric panel investigations. The study targeted six South Asian Countries; Bangladesh, India, Pakistan, Nepal, Bhutan and Srilanka. The study revealed that there is a positive association between the financial innovations and the financial inclusion, which was observed both in the long run and short run (Qamruzzaman, 2019).

Musango (2018) did a study on the mobile banking services and the financial inclusion among commercial banks in Nairobi County in Kenya. The study was guided by the following objectives; to examine the effect of mobile money transfer on financial inclusion in Nairobi City County, to assess the relationship between mobile payment for goods and services and financial inclusion, to determine whether mobile account management affects the degree of financial inclusion and to establish the effect of mobile credit facilitation and financial inclusion. The study revealed that the mobile banking has therefore improved the level of access to financial services to persons without formal access to commercial banks (Musango, 2018).

2.5 Conceptual Framework

The study will adopt the following conceptual framework:

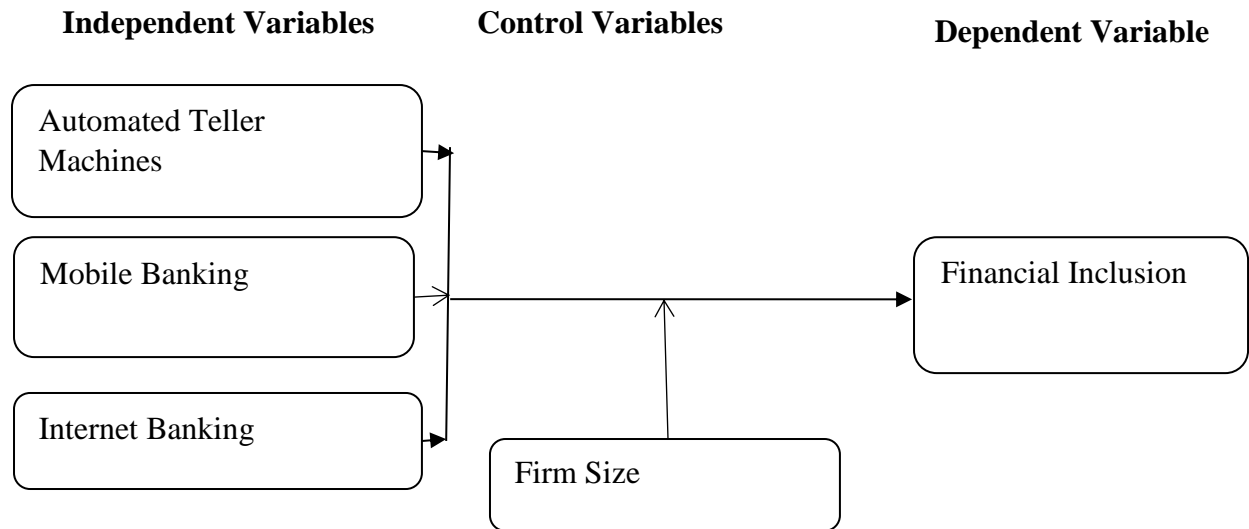


Figure 2.1: Conceptual Framework

2.6 Summary of the Literature Review

The review of empirical studies carried out locally were either specific to a county, focused on the performance of the commercial banks or on a particular banking sector innovation thus necessitated the need for a further study that would be more inclusive and extensive (effects of several banking sector innovations on financial inclusion in the whole country of Kenya).

The table below is a summary of studies, which have been done and have been utilized by the study.

Table 2.1: Summary of the Literature Review

Author of study	Focus of Study	Methodology	Findings	Knowledge Gaps	Focus of current study
Thairu (2016)	On the effects of the technological innovations on the financial inclusion initiatives by the banks in Nakuru town, Nakuru County	The study adopted the use of the descriptive research design.	The study revealed that the technological innovations increase sales, and that they lead to the increment of profit	The study focused on the Banks that were based in Nakuru County	The current study focuses on the banking sector in Kenya and therefore focuses on all the 44 Commercial banks in Kenya
Ngumi (2013)	The effects of the bank innovations on financial performance of the commercial banks in Kenya	The study adopted the use of the descriptive research design.	The findings of the study revealed that the bank innovations had statistically significant influence on income, return on assets, profitability, and customer deposits	The study focused on the financial performance of the banks	The current study focuses on the financial inclusion

Zhang, Meihui (2015)	The financial inclusion from the perspective of the basic banking services and the consumer credit this was a comparative study of the law and regulations	The study was a comparative study	The study revealed that without enough incentive, the banks can be less motivated in this progress.	The study was a comparative study that targeted several countries and focused on the financial inclusions and banking services	The current study is focusing on Kenya banking innovations and the financial inclusion
Kiplangat (2017)	The financial innovations on the financial performance of commercial banks in Kenya.	The study adopted the use of the descriptive research design.	The study finding revealed that the innovation significantly affected the financial performance.	The study focused on the financial innovations and financial performance.	The current study focuses on the Banking sector innovations and the Financial inclusions
Qamruzzaman (2019)	The financial innovation and the financial	The study adopted the use of the descriptive	The study revealed that there is a	The study focused on	The current study focuses on banking

	inclusions nexus in South Asian Countries; evidence from the symmetric and Asymmetric panel investigations	research design.	positive association between the financial innovation and the financial inclusion	financial innovation s and financial inclusions	sector innovations and financial inclusion
Musango (2018)	The mobile banking services and the financial inclusion among commercial banks in Nairobi City County in Kenya	The study adopted the use of the descriptive research design.	The study revealed that the mobile banking has therefore improved the level of access to financial services to persons without formal access to commercial banks.	The study focused on the mobile banking services and financial inclusions	The present study focuses on banking sector innovations and financial inclusions

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This section of the study focuses on the methodology that was adopted by the study. The section involves the processes involving the gathering, measuring and the analysis of the data. This section is therefore organized into research design, population, the sample, data collection procedures, and diagnostic tests and data analysis.

3.2 Research Design

The present study utilized descriptive research design; the descriptive research design was considered suitable for the present study since the study focuses on the effects of the banking sector innovations on the financial inclusion. The research design allowed for the utilization of both the qualitative and quantitative data, which was applied. Further, the approach also allows for the triangulations and validation of the data (Kothari 2004).

3.3 Population

The concept of population is used to refer to the entire group of individuals as alluded by Mugenda (2008), the description of the population has also been considered to include the objects, or even the events that are having common characteristics. The target population will be the total registered commercial banks in Kenya as of 30th June 2020 (Central Bank of Kenya, 2020) (See Appendix 1). Therefore, the study adopted a census approach. According to Kothari (2004), when the population of the study is considered small, then the approach that is mostly recommended is census.

3.4 Data Collection

This study collected secondary data. The secondary sources of the data included the Central Bank, the banks supervision annual reports and the annual reports from the Central Bank of

Kenya. More importantly, the data was obtained from the respective published data from the commercial banks. The secondary data was therefore sought to come up with the necessary data with regard to effects of the banking sector innovation on financial inclusion in Kenya.

3.5 Data Analysis

The secondary data collected was first classified and tabulated to create stage for analysis. Descriptive statistics; as frequency distributions, graphs, mean scores and standard deviations were used to describe the basic features of data. Further multiple regression and correlation approaches were used in establishing the relationship between the independent variables (predictor) and the dependent variable (response) and measure the strength of the relationship based on the regression model below.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where:

β_0 = a constant, which is the value of dependent variable when all the independent variables are 0

$\beta_1, \text{ to } \beta_4$ = Regression coefficients of independent variables or change induced by X_1, X_2, X_3 and X_4

ε = Error of prediction

Y = Financial Inclusion (Total Loans and Advances/ Real GDP)

X_1 = Automated Teller Machine (Natural logarithm of Amount moved through ATMs)

X_2 = Mobile Banking (Natural logarithm of Amount moved through M-banking)

X₄=Internet Banking (Natural logarithm of Amount moved through internet banking)

X₄=Firm Size (Natural Logarithm of assets)

3.5.1 Diagnostic Tests

For normality sample size is 43 and test is to reveal any data normality compliance. There are seven types of this test, the most powerful one being Shapiro-Wilk test. It can be used on different types of sample sizes and therefore shall be used. When the p-value is less than or equal to 0.05 the hypothesis is rejected.

This exists with a solid correlation involving more than two independent variables during a regression analysis. Its existence does not affect the predictability of the model but determines the level of a single variable (Hayden, 2008). It is tested by determining Variance Inflation Factor. (VIF). Jansen (2013) employed a cut of ten as opined by Neter et al. (1985). Multicollinearity is less significant for VIF values, which are below five (Hair et al., 2011).

CHAPTER FOUR: DATA ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter is set out to provide the analyzed findings as guided by the specific objectives of the study. The study relied on secondary data collected through data collection sheet and the analysis was conducted using descriptive and inferential statistics.

4.2 Response Rate

Out of the 43 commercial banks that were targeted, the study obtained complete data from 35 firms resulting into a response rate of 81.4%. The response rate was good enough and consistent with the assertion of Babbie (2010) who indicated that a response rate of above 80% is excellent for presentation and analysis of the findings.

4.3 Descriptive Statistics

The means and standard deviations were computed on the variables and summarized as indicated in Table 4.1.

Table 4.1: Means and Standard Deviation

	n	Min	Max	Mean	Std. Dev
Financial Inclusion (%)	175	.001	.09	.0122	.01708
Automated Teller Machine (Kshs. M)	175	2.50	4.13	3.2244	.28659
Mobile Banking (Kshs. M)	175	1.00	3.88	2.8566	.44832
Internet Banking (Kshs. M)	175	.35	3.79	2.7709	.63835
Firm Size (Kshs. M)	175	3.54	5.96	4.6801	.57271

Source: CBK Data (2015-2019)

The results in Table 4.1 indicate that on average, financial inclusion among the studied commercial banks stood at 1.22% with the highest bank having 9.0% while the least with 0.1%. This trend could be because most people do not own any of the accounts with the commercial banks mostly because they rely more on mobile phones including M-pesa. The results further

indicated that on average, the ATMs contributed revenue of Kshs. 3.2244 million with the highest bank generating revenue of Kshs 4.13 million and the least bank getting revenue of Kshs. 2.50 million. This means that ATMs have contributed towards revenues of the commercial banks in Kenya. The results of the study further indicate that on average, mobile banking contributed Kshs. 2.8566 million among commercial banks with the highest bank generating revenue of Kshs. 3.88 million while the least bank getting Kshs 1.00 million in revenues from mobile banking. This implies that mobile banking has contributed immensely towards revenues of the commercial banks in Kenya.

The results also indicated that on average, the commercial banks generated Kshs. 2.7709 million from internet banking with the highest amount standing at Kshs. 3.79 million while the least amount at Kshs. 0.35 million. This implies that internet banking has emerged as an alternative revenue stream of the commercial banks in Kenya. The results on firm size showed that on overall, commercial banks have an asset base of Kshs. 4.6801 million with the highest figure being Kshs. 5.96 million and the least figure standing at Kshs. 3.54 million, respectively. This implies that majority of the commercial banks had higher asset base that they could use as collateral when looking for additional capital to enhance their liquidity position so that they can play their financial intermediation role properly. This would ultimately contribute towards financial inclusion.

4.4 Diagnostic Tests

The study conducted diagnostic tests to establish whether there was violation of the assumptions of regression analysis. The specific diagnostic tests that were performed include test for multicollinearity, normality test and autocorrelation test. The results were established and summarized as indicated in subsequent sections.

4.4.1 Autocorrelation Test

The study conducted Durbin Watson test to determine presence of autocorrelation in the data.

Table 4.2 is the summary of the findings.

Table 4.2: Autocorrelation Test

Model	Durbin-Watson
1	2.021 ^a

a. Predictors: (Constant), Firm Size, Internet Banking, Automated Teller machine, Mobile Banking

b. Dependent Variable: Financial Inclusion

Source: CBK Data (2015-2019)

The results in Table 4.2 indicate the value of Durbin Watson Statistic (d) as 2.021. When testing for autocorrelation, the rule of thumb is usually that the value of d close or equal to 2 signifies absence of serial correlation in the data. Thus, it can generally be inferred that there was no serial correlation in the data and thus it was suitable for inferential statistics.

4.4.2 Multicollinearity Test

Multicollinearity was performed using Variance of Inflation Factors (VIF) with the findings as indicated in Table 4.3.

Table 4.3: Multicollinearity Test

	Collinearity Statistics	
	Tolerance	VIF
Automated Teller Machine	.146	6.868
Mobile Banking	.265	3.767
Internet Banking	.181	5.516
Firm Size	.217	4.610
Mean VIF	.202	5.190

a. Dependent Variable: Financial Inclusion

Source: CBK Data (2015-2019)

Table 4.3 indicates the mean VIF value as 5.190 with individual values for ATMs, M-banking, internet banking and size being 6.868, 3.767, 5.516 and 4.610, respectively. Ideally, the values

of VIF within range of 1-10 signify absence of multicollinearity in the data. Thus, it can be inferred that there was no multicollinearity in the data.

4.4.3 Normality Test

Graphical method was used to infer normality in the data as shown in Figure 4.1.

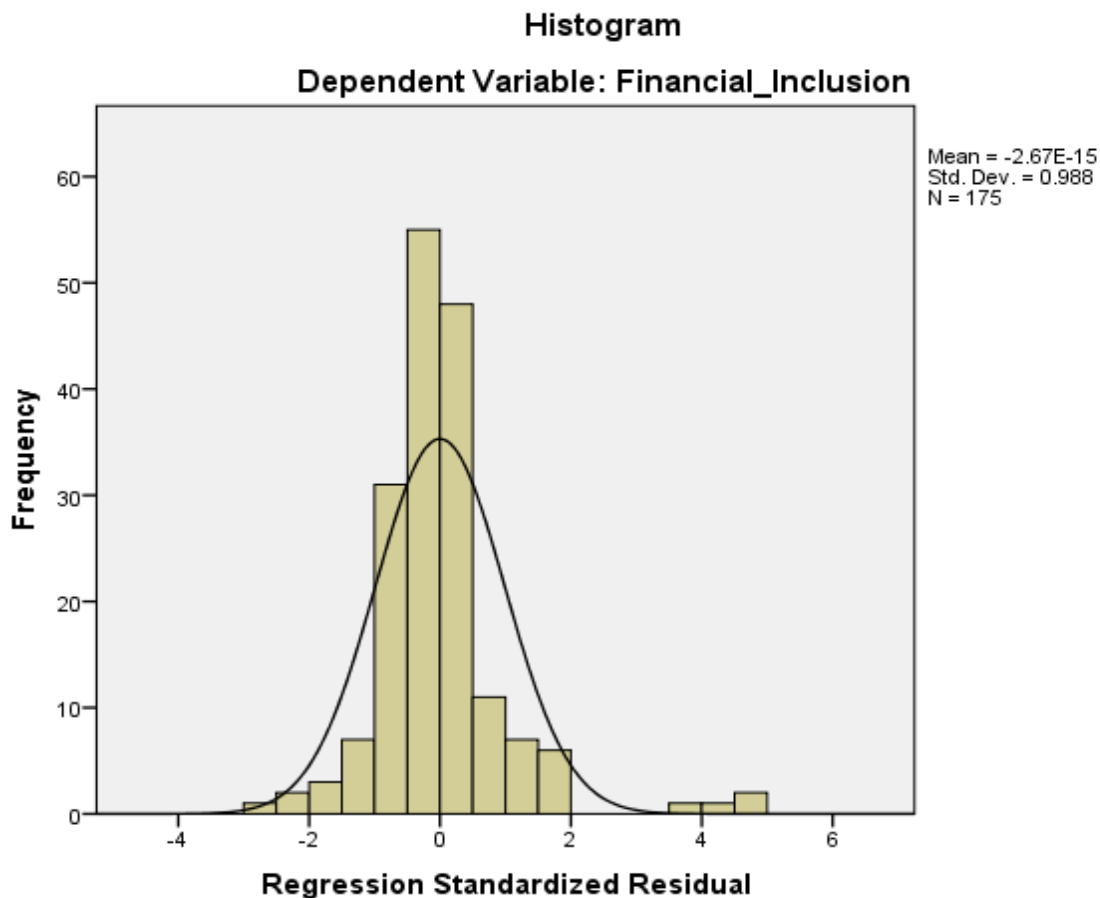


Figure 4.1: Normality Test

Source: CBK Data (2015-2019)

The pattern of the histogram in Figure 4.1 indicates the normal distribution line with its peak falling closer with the highest bar graphs. This could be an indication that the data used in the study was normally distributed and thus suitable for inferential statistics.

4.5 Inferential Statistics

Inferential statistics covering correlation and regression analysis were utilized to achieve the specific objectives of the study as indicated in subsequent sections.

4.5.1 Relationship between Banking Sector Innovations and Financial Inclusion

The study sought to establish the relationship between banking sector innovations and financial inclusion with Table 4.4 showing the results of correlation analysis.

Table 4.4: Correlation Matrix

		Financial Inclusion	ATMs	Mobile Banking	Internet Banking	Firm Size
Financial Inclusion	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	175				
ATMs	Pearson Correlation	.692**	1			
	Sig. (2-tailed)	.000				
	N	175	175			
Mobile Banking	Pearson Correlation	.652**	.841**	1		
	Sig. (2-tailed)	.000	.000			
	N	175	175	175		
Internet Banking	Pearson Correlation	.587**	.887**	.814**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	175	175	175	175	
Firm Size	Pearson Correlation	.793**	.866**	.789**	.845**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	175	175	175	175	175

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

Source: CBK Data (2015-2019)

The findings in Table 4.6 indicates that ATMs ($r=.692$), mobile banking ($r=.652$) and internet banking ($r=.587$) all have strong and positive relationship with financial inclusion of commercial

banks in Kenya. The study further noted that firm size ($r=.793$) has a strong and positive controlling relationship in bank sector innovation and financial inclusion. Thus, it can be deduced that banking sector innovations have a strong and positive relationship with financial inclusion and thus objective 1 will have been achieved.

4.5.2 Regression Results showing Effects of Banking Sector Innovations on Financial Inclusion

The second objective of the study was to establish the effect of banking sector innovations on financial inclusion in Kenya. This objective was achieved through the use of regression analysis and the findings are as reported in subsequent sections. Table 4.1 gives the findings of the model summary showing two models.

Table 4.5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.710 ^a	.504	.496	.01213	.504	58.029	3	171	.000
2	.822 ^b	.676	.668	.00984	.172	90.056	1	170	.000

a. Predictors: (Constant), Internet Banking, Mobile Banking, Automated Teller Machine

b. Predictors: (Constant), Internet Banking, Mobile Banking, Automated Teller Machine, Firm Size

Source: CBK Data (2015-2019)

Table 4.5 indicates two models; the first model is banking sector innovations and financial inclusion without controlling for firm size. The second model has accounted for the controlling variable, firm size. Thus, from model 1, the value of R square was 0.504, this means that 50.4% change in financial inclusion is explained by banking sector innovations before controlling for firm size.

On controlling for size of the commercial banks in model 2, the value of R square becomes 0.676, representing a change in R square of .172 or 17.2%. It is this change in R square that signifies the controlling effect of firm size in the interaction between banking sector innovations and financial inclusion of the commercial banks in Kenya. The findings of the ANOVA are as shown in Table 4.6.

Table 4.6: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.026	3	.009	58.029	.000 ^b
	Residual	.025	171	.000		
	Total	.051	174			
2	Regression	.034	4	.009	88.702	.000 ^c
	Residual	.016	170	.000		
	Total	.051	174			

a. Dependent Variable: Financial Inclusion

b. Predictors: (Constant), Internet Banking, Mobile Banking, Automated Teller Machine

c. Predictors: (Constant), Internet Banking, Mobile Banking, Automated Teller Machine, Firm Size

Source: CBK Data (2015-2019)

Table 4.6 indicate the values of F calculated before and after controlling for firm size as 58.029 and 88.702 with the respective p-values ($p < 0.05$). This means that irrespective of their sizes, banking sector innovations have significant effect on financial inclusions of commercial banks in Kenya. Thus, objective two will have been attained. A breakdown of the individual innovations and how they influence financial inclusion is as summarized in Table 4.7.

Table 4.7: Regression Beta Coefficients and Significance

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.126	.015		8.156	.000
	Automated Teller Machine	.038	.008	.638	4.907	.000
	Mobile Banking	.011	.004	.290	2.809	.006
	Internet Banking	.006	.003	.215	1.774	.078
2	(Constant)	.136	.013		10.776	.000
	Automated Teller Machine	.013	.007	.217	1.899	.059
	Mobile Banking	.006	.003	.170	2.011	.046
	Internet Banking	.013	.003	.496	4.834	.000
	Firm Size	.027	.003	.889	9.490	.000

a. Dependent Variable: Financial Inclusion

Source: CBK Data (2015-2019)

From Table 4.7, the following two models are predicted:

$$Y = .126+.038X_1+.011X_2+.006X_3..... (I)$$

$$Y = .136+.013X_1+.006X_2+.013X_3+.027X_4..... (II)$$

Y = Financial Inclusion (Total Loans and Advances/ Real GDP)

X₁ =Automated Teller Machine (Natural logarithm of Amount moved through ATMs)

X₂ = Mobile Banking (Natural logarithm of Amount moved through M-banking)

X₄=Internet Banking (Natural logarithm of Amount moved through internet banking)

X₄=Firm Size (Natural Logarithm of assets)

From model 1, it can be inferred that before controlling for firm size, Automated Teller Machine ($\beta=0.038$) had the largest effect on financial inclusion of the commercial banks in Kenya followed by mobile banking ($\beta=0.011$) and lastly internet banking ($\beta=.006$). Still in model 1, at 5%, it can be deduced that Automated Teller Machine and mobile banking ($p<0.05$) all have significant effect on financial inclusion among commercial banks in Kenya.

On controlling for their sizes in model 2, the study noted that automated teller machine ($\beta=0.013$) and internet banking ($\beta=0.013$) had equal effect on financial inclusion followed by mobile banking ($\beta=0.006$). However, only mobile and internet banking ($p<0.05$) had significant effect on financial inclusion after controlling for the size of commercial banks.

4.6 Interpretation and Discussion of Findings

The first objective of the study sought to establish the relationship between banking sector innovations and financial inclusion. From correlation results, this study concludes that banking sector innovations have strong and positive relationship with financial inclusion. This finding is empirically supported by Thairu (2016) who revealed that the technological innovations increase sales, and that they lead to the increment of profit; they provide better products, increase quality of service and also assures the survival of the institutions within the banking sector. The study concludes that investing in innovations like ATMs, mobile banking and internet banking is positively related with financial inclusion among the commercial banks in Kenya. Qamruzzaman (2019) revealed that there is a positive association between the financial innovations and the financial inclusion, which was observed both in the long run and short run.

The study sought to establish the effect of banking sector innovations on financial inclusion among commercial banks in Kenya. In view of regression results, this study concludes that before controlling for the sizes of the commercial banks in Kenya, Automated Teller Machine

and mobile banking are significant factors affecting financial inclusion. On controlling for their sizes, the study concludes that only mobile and internet banking were significant in affecting financial inclusion among commercial banks in Kenya. These findings are consistent with Musango (2018) who revealed that the mobile banking has therefore improved the level of access to financial services to persons without formal access to commercial banks. Kiplangat (2017) revealed that the innovation significantly affected the financial performance. This finding is also consistent with (Ngumi, 2013) who revealed that the bank innovations had statistically significant influence on income, return on assets, profitability, and customer deposits of commercial banks in Kenya and tests for significance showed that the influence was statistically significant.

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter is set out to present a summary of the analyzed findings. The conclusions and recommendations as well as limitations and areas for further studies are also indicated.

5.2 Conclusions

The first objective of the study sought to establish the relationship between the banking sector innovations and financial inclusion. From correlation results, this study concludes that banking sector innovations have strong and positive relationship with financial inclusion. The study concludes that investing in innovations like ATMs, mobile banking and internet banking is positively related with financial inclusion among the commercial banks in Kenya.

The study sought to establish the effect of banking sector innovations on financial inclusion among commercial banks in Kenya. In view of regression results, this study concludes that before controlling for the sizes of the commercial banks in Kenya, Automated Teller Machine and mobile banking are significant factors affecting financial inclusion. On controlling for their sizes, the study concludes that only mobile and internet banking were significant in affecting financial inclusion among commercial banks in Kenya.

5.3 Recommendations of the Study

The study recommends that the Central Bank of Kenya should formulate sound prudential guidelines and regulations that would promote uptake of innovations in the banking sector. The new innovations launched or proposed by the commercial banks in Kenya should readily be approved by the CBK.

The study recommends that based on their sizes (large, medium and small) also referred to as the tier system of classification, the management of the commercial banks should give more weight on mobile and internet banking as this would significantly drive financial inclusion of the commercial banks.

5.4 Limitations of the Study

The study was limited to 43 commercial banks operating in Kenya. The study was also limited to three variables: the independent, the control and the dependent variable. Banking sector innovation was the independent variable; firm size was the control variable and financial inclusion was the dependent variable. The study was further limited to secondary data that was gathered on a five-year time period (2015-2019).

5.5 Suggestions for Further Research

Future studies should be conducted covering a larger sample of firms within the financial sector covering the microfinance institutions and the deposit taking savings and credit cooperatives. This will increase the sample size and thus making it possible to generalize the findings to the entire financial sector. The study recommends further studies to be conducted across East Africa apart from Kenya for comparison of the findings. Future studies can also be conducted by focusing on one specific innovation like mobile banking, ATMs, or internet banking with another variable like financial performance or even financial inclusion.

REFERENCES

- Achtziger, A., Hubert, M., Kenning, P., Raab, G., & Reisch, L. (2015) “Debt out of control: The links between self-control, compulsive buying, and real debts”. *Journal of Economic Psychology*, 49, 141-149, 2015.
- Babbie, E. (2010). Research design. *The practice of social research*, 85-88.
- Beck, T. (2016) “Financial Inclusion–Measuring progress and progress in measuring”. 4th IMF Statistical Forum Lifting the Small Boats: Statistics for Inclusive Growth. Cass Business School, City, University of London, CEPR, and CESifo, 2016.
- Byegon, G. (2020). Linkage between Self-Control, Financial Innovations and Financial Inclusion. A Moderated Mediation Analysis across Levels of Financial Literacy (The case of owners of Microenterprise in Kenya). *European Journal of Business and Management Research*, 5(4). <https://doi.org/10.24018/ejbmr.2020.5.4.294>
- Byegon, G., Cheboi, J., & Bonuke, R. (2019) “Mediating Effects of Financial Innovations between Behavioral Factors and Financial Inclusion of Micro Enterprises in Kenya”. *SEISENSE Journal of Management*, 2(6), 49-64, 2019.
- Cabrita, R., & Bontis, N. (2008). Intellectual capital and business performance in Portuguese banking industry. *International Journal of Technology Management*, 43(1), 212 -237.
- Cronbach, L. J., & Shavelson, R. J. (2004). My current thought on coefficient alpha and successor procedures. *Educational and Psychological Measurement*, 64(3), 391- 418.
- Dillon, A., & Morris, M. (1996). User acceptance of new information technology: theories and models. *Annual Review of Information Science and Technology*, Medford (NJ), 31, 3-32.

- Goodhue, D. L., & Thompson, R. L. (1995). Task-technology fit and individual performance. *MIS Quarterly*, 19(2) 213-236.
- Gwalani, H. & Shilpa, P. (2014). “Financial Inclusion: Building a Success Model in the Indian Context”. *Journal of Social and Behavioral Sciences*. 13(3), 372–378.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing theory and Practice*, 19(2), 139-152.
- Hayden, R. W. (2008). A review of "applied regression analysis and other multivariate methods 4th edition by L. Kleinbaum, L. Kupper. A. Nizam, and K. E Muller. *Biopharmaceutical Statistics*, 18(4), 797 -798.
- Jansen, J. P., Fleurence, R., Devine, B., Itzler, R., Barrett, A., Hawkins, N., ... & Cappelleri, J. C. (2011). Interpreting indirect treatment comparisons and network meta-analysis for health-care decision making: report of the ISPOR Task Force on Indirect Treatment Comparisons Good Research Practices: part 1. *Value in health*, 14(4), 417-428.
- Jeong, B. K., & Yoon, T. E. (2013) “An empirical investigation on consumer acceptance of mobile banking services”. *Business and Management Research*, 2(1), 31-40, 2013.
- Jukan, M. K., & Softić, A. (2016) “Comparative analysis of financial inclusion in developing regions around the world”. *Economic Review: Journal of Economics and Business*, 14(2), 56-65, 2016.
- Kiplangat (2017) financial innovations on the financial performance of commercial banks in Kenya. *Unpublished MBA Project, University of Nairobi*.

- Kostopoulos, K., Papalexandris, A., Papachroni, M., & Ioannou, G. (2011) "Absorptive capacity, innovation, and financial performance. *Journal of Business Research*, 64(12), 1335-1343, 2011.
- Kothari, C. R. (2004). *Research methodology: methods and techniques*. (2nd, ed.) New Delhi, India: New age Publisher.
- Lamb, L. (2016) "Financial exclusion and financial capabilities in Canada". *Journal of Financial Economic Policy*, 8(2), 212-227, 2016.
- Meihui (2015) the financial inclusion from the perspective of the basic banking services and the consumer credit: a comparative study of law and regulation in the United Kingdom and China. 44(1), 212 -227.
- Mugenda, A. G. (2008). *Social science research: Theory and principles. Nairobi: Applied.*
- Musango (2018) the Mobile banking services and the financial inclusion among commercial banks in Nairobi City County in Kenya. *Unpublished MBA Project, University of Nairobi*. 44(3), 361- 438.
- Neter, J., Johnson, J. R., & Leitch, R. A. (1985). Characteristics of dollar-unit taints and error rates in accounts receivable and inventory. *Accounting Review*, 488-499.
- Ngumi (2013) the effects of the bank innovations on the financial performance of the commercial banks in Kenya. 24(1), 232 -237.
- Nunnally, J. (1978). *Psychometric theory*. New York: McGraw-Hill.
- Ozili, P. K. (2018) "Impact of digital finance on financial inclusion and stability". *Borsa Istanbul Review*, 18(4), 329-340, 2018.

Porter, M.E. (2004). *Competitive strategy. New York edition.*

Qamruzzaman (2019) the financial innovation and the financial inclusions nexus in South Asian Countries; evidence from the symmetric and Asymmetric panel investigations. *International Journal Technology management* 33(3), 212 -237.

Rogers, E.M. (2003). *Diffusion Innovation* (5th Ed.) New York: The Free Press.

Schumpeter, J. A. (1928). The instability of capitalism. *The Economic Journal*, September 1928.

Servon, L. J., & Kaestner, R. (2018) “Consumer financial literacy and the impact of online banking on the financial behavior of lower-income bank customers”. *Journal of Consumer Affairs*, 42(2), 271-305, 2018.

Sethi, D., & Acharya, D. (2018). “Financial inclusion and economic growth linkage: Some cross country evidence”. *Journal of Financial Economic Policy*, 10(3), 369-385, 2018.

Sharma, D. (2016) “Nexus between financial inclusion and economic growth: Evidence from the emerging Indian economy”. *Journal of Financial Economic Policy*, 8(1), 13-36, 2016.

Shofawati, A. (2019) “The Role of Digital Finance to Strengthen Financial Inclusion and the Growth of SME in Indonesia”. *KnE Social Sciences*, 389-407, 2019.

Siddik, M. N. A., Sun, G., Yanjuan, C. U. I., & Kabiraj, S. (2015) “Financial inclusion through mobile banking: a case of Bangladesh”. *Journal of Applied Finance and Banking*, 4(6), 109, 2015.

Singh, R., & Roy, S. (2015). “Financial Inclusion: A Critical Assessment of its Concepts and Measurement”. *Asian Journal of Research in Business Economics and Management*, 5(1), 12, 2015.

- Thairu (2016). The effects of the innovations on the financial inclusion initiatives by Banks in Nakuru town, Nakuru County. 64(3), 391- 418.
- Wokabi, V. W., & Fatoki, O. I. (2019). Determinants of Financial Inclusion in East Africa. *International Journal of Business and Management*, Vol. VII (1), pp. 125-143., 10.20472/BM.2019.7.1.009
- World Bank (2014). “Global Financial Development Report 2014: Financial Inclusion”. Washington, DC: World Bank, (2014).
- Yang, S., Ishtiaq, M., & Anwar, M. (2018) “Enterprise risk management practices and firm performance, the mediating role of competitive advantage and the moderating role of financial literacy”. *Journal of Risk and Financial Management*, 11(3), 35, 2018.
- Zhang, Meihui (2015). The financial inclusion from the perspective of the basic banking services and the consumer credit. This was a comparative study of the law and regulation within the United Kingdom and China. 54(3), 321- 428.

APPENDICES

Appendix I: List of Commercial Banks in Kenya

1. African Banking Corporation Limited
2. Bank of Africa Kenya Limited
3. Bank of Baroda (K) Limited
4. Barclays Bank of Kenya Limited
5. Bank of India
6. Charterhouse Bank Limited
7. Chase Bank (K) Limited
8. Citibank N.A Kenya
9. Commercial Bank of Africa Limited
10. Consolidated Bank of Kenya Limited
11. Co-operative Credit Bank Limited
12. Bank of Kenya Limited
13. Development Bank of Kenya Limited
14. Diamond Trust Bank Kenya Limited
15. DIB Bank Kenya Limited
16. Ecobank Kenya Limited
17. Equity Bank Kenya Limited
18. Family Bank Limited
19. First Community Bank Limited
20. Guaranty Trust Bank (K) Ltd
21. Guardian Bank Limited
22. Gulf African Bank Limited
23. Habib Bank A.G Zurich
24. I & M Bank Limited
25. Imperial Bank Limited
26. Jamii Bora Bank Limited
27. KCB Bank Kenya Limited
28. Mayfair Bank Limited
29. Middle East Bank (K) Limited
30. M-Oriental Bank Limited
31. National Bank of Kenya Limited
32. NIC Bank Kenya Plc
33. Paramount Bank Limited
34. Prime Bank Limited
35. SBM Bank Kenya Limited
36. Sidian Bank Limited
37. Spire Bank Ltd
38. Stanbic Bank Kenya Limited
39. Standard Chartered Bank Kenya Limited
40. Trans-National Bank Limited
41. UBA Kenya Bank Limited
42. Victoria Commercial Bank Limited
43. HFC Limited

Source: Central Bank of Kenya, 2020

Appendix II: Data Collection Sheet

Year	GDP	Loans and Advances	Amount moved through ATM (Kshs)	Amount moved through M-banking (Kshs)	Amount moved through Internet Banking (Kshs)	Assets (Kshs)
2015						
2016						
2017						
2018						
2019						

Appendix III: Secondary Data Collected

Name of Bank	Year	Financial Inclusion	ATMs	M-banking	Internet Banking	Firm Size
African Banking Corporation Limited	2015	0.0038	3.3526	3.0657	3.1049	4.3436
Bank of Africa Kenya Limited	2015	0.0101	3.3106	2.8605	3.3619	4.8406
Bank of Baroda (K) Limited	2015	0.0079	3.4618	3.3721	3.4804	4.8336
Absa (formerly Barclays Bank of Kenya Limited)	2015	0.0366	3.3546	3.0584	3.3957	5.3823
Bank of India	2015	0.0044	3.2539	2.6814	2.8155	4.6249
Citibank N.A Kenya	2015	0.0068	3.3681	2.8395	2.9696	4.9452
Consolidated Bank of Kenya Limited	2015	0.0025	3.4121	3.1106	3.2795	4.1503
Co-operative Credit Bank Limited	2015	0.0524	3.2540	3.2555	3.1888	5.5309
Development Bank of Kenya Limited	2015	0.0022	3.3008	3.0557	3.2244	4.2290
Diamond Trust Bank Kenya Limited	2015	0.0316	3.6766	3.5332	3.3552	5.2809
Ecobank Kenya Limited	2015	0.0076	3.3951	3.3541	3.5712	4.7196
Equity Bank Kenya Limited	2015	0.0565	3.5520	3.2637	3.4050	5.5332
Family Bank Limited	2015	0.0143	3.4075	3.1883	3.5766	4.9095
First Community Bank Limited	2015	0.0028	3.1916	2.9952	3.5129	4.1647
Guaranty Trust Bank (K) Ltd	2015	0.0032	3.3108	2.8001	3.1198	4.4680
Guardian Bank Limited	2015	0.0024	2.9149	2.8847	2.9622	4.1646
Gulf African Bank Limited	2015	0.0039	3.5835	3.2914	3.4048	4.3929
Habib Bank A.G Zurich	2015	0.0013	3.3393	3.2593	3.1774	4.1596
I & M Bank Limited	2015	0.0257	3.0868	3.2604	3.3495	5.1698
Kingdom Bank (formerly Jamii Bora Bank Limited)	2015	0.0027	3.5084	3.1225	3.2205	4.2248
KCB Bank Kenya Limited	2015	0.0798	3.3324	3.1960	3.3330	5.6700
Middle East Bank	2015	0.0010	3.6021	3.2481	3.4432	3.7542

(K) Limited						
M-Oriental Bank Limited	2015	0.0014	3.3832	2.9595	3.4344	3.9292
National Bank of Kenya Limited	2015	0.0179	4.1294	3.8002	3.6197	5.0979
Paramount Bank Limited	2015	0.0016	3.6809	3.5261	3.3485	4.0223
Prime Bank Limited	2015	0.0102	3.2435	3.1031	3.2956	4.8129
SBM Bank Kenya Limited	2015	0.0025	3.4168	3.4012	3.3240	4.1768
Sidian Bank Limited	2015	0.0033	3.2678	3.0722	3.1086	4.2812
Spire Bank Ltd	2015	0.0026	3.2274	3.1781	3.2252	4.1605
Stanbic Bank Kenya Limited	2015	0.0255	3.4172	3.0758	3.0649	5.2979
Standard Chartered Bank Kenya Limited	2015	0.0303	3.1003	3.0946	3.0632	5.3695
Trans-National Bank Limited	2015	0.0018	3.2258	3.1511	3.2637	4.0226
UBA Kenya Bank Limited	2015	0.0007	3.2451	3.0757	2.7106	3.8910
Victoria Commercial Bank Limited	2015	0.0032	2.9376	2.8741	3.3523	4.3015
HFC Limited	2015	0.0134	3.1609	2.6599	2.8981	4.8376
African Banking Corporation Limited	2016	0.0035	3.3774	3.1346	3.1662	4.3507
Bank of Africa Kenya Limited	2016	0.0087	3.3513	3.0324	3.1738	4.7482
Bank of Baroda (K) Limited	2016	0.0089	3.5337	3.4363	3.2658	4.9186
Absa (formerly Barclays Bank of Kenya Limited)	2016	0.0410	3.3843	3.1746	3.2931	5.4141
Bank of India	2016	0.0045	3.3119	2.8728	3.0673	4.6796
Citibank N.A Kenya	2016	0.0066	3.4054	3.0479	3.3220	5.0142
Consolidated Bank of Kenya Limited	2016	0.0024	3.4593	3.1584	3.1515	4.1436
Co-operative Credit Bank Limited	2016	0.0561	3.2438	3.3135	3.0970	5.5441
Development Bank of Kenya Limited	2016	0.0023	3.3322	3.1551	3.3059	4.2153
Diamond Trust Bank Kenya Limited	2016	0.0329	3.7247	3.4765	3.3998	5.3876
Ecobank Kenya Limited	2016	0.0064	3.4523	3.4591	3.6506	4.6732
Equity Bank Kenya	2016	0.0514	3.6179	3.2606	3.3043	5.5795

Limited						
Family Bank Limited	2016	0.0124	3.4505	3.2563	3.5669	4.8416
First Community Bank Limited	2016	0.0028	3.3022	3.2549	3.3132	4.1750
Guaranty Trust Bank (K) Ltd	2016	0.0031	3.3019	3.0643	3.1895	4.4716
Guardian Bank Limited	2016	0.0022	2.8579	2.9059	2.6696	4.1675
Gulf African Bank Limited	2016	0.0039	3.6159	3.2243	3.5242	4.4339
Habib Bank A.G Zurich	2016	0.0012	3.4337	3.3367	3.6060	4.2313
I & M Bank Limited	2016	0.0243	3.1464	3.2898	3.4459	5.2152
Kingdom Bank (formerly Jamii Bora Bank Limited)	2016	0.0024	3.5728	3.3740	3.3501	4.1966
KCB Bank Kenya Limited	2016	0.0867	3.4207	3.1189	3.2718	5.7031
Middle East Bank (K) Limited	2016	0.0009	3.5772	3.4172	3.4382	3.7188
M-Oriental Bank Limited	2016	0.0017	3.4428	3.2102	3.3091	3.9965
National Bank of Kenya Limited	2016	0.0160	4.1278	3.8840	3.5775	5.0611
Paramount Bank Limited	2016	0.0015	3.7132	3.5375	3.3117	3.9744
Prime Bank Limited	2016	0.0093	3.2685	3.2152	3.2562	4.8152
SBM Bank Kenya Limited	2016	0.0001	3.4724	3.3721	3.3326	3.5386
Sidian Bank Limited	2016	0.0034	3.3463	3.1149	2.9909	4.3196
Spire Bank Ltd	2016	0.0019	3.2834	3.1461	3.2156	4.1399
Stanbic Bank Kenya Limited	2016	0.0275	3.4635	3.1923	3.0866	5.3115
Standard Chartered Bank Kenya Limited	2016	0.0308	3.0504	3.2505	3.1017	5.3984
Trans-National Bank Limited	2016	0.0016	3.3631	3.1270	3.2974	4.0197
UBA Kenya Bank Limited	2016	0.0007	3.2999	2.9932	2.6082	3.7483
Victoria Commercial Bank Limited	2016	0.0036	3.0933	2.7223	3.2502	4.3503
HFC Limited	2016	0.0132	3.2222	2.7474	2.7378	4.8331
African Banking Corporation Limited	2017	0.0036	3.2938	2.7956	2.5185	4.3945
Bank of Africa	2017	0.0075	3.2816	2.9844	2.2645	4.7339

Kenya Limited						
Bank of Baroda (K) Limited	2017	0.0097	3.4776	3.0719	2.8716	4.9829
Absa (formerly Barclays Bank of Kenya Limited)	2017	0.0393	3.2836	2.9554	2.5305	5.4341
Bank of India	2017	0.0046	3.2394	2.4993	2.4334	4.7531
Citibank N.A Kenya	2017	0.0084	3.3406	2.8622	2.5036	4.9923
Consolidated Bank of Kenya Limited	2017	0.0022	3.3381	3.0300	2.6704	4.1289
Co-operative Credit Bank Limited	2017	0.0016	3.1266	3.3323	2.8394	5.5830
Development Bank of Kenya Limited	2017	0.0024	3.2184	2.8488	2.3139	4.2127
Diamond Trust Bank Kenya Limited	2017	0.0348	3.5887	3.2608	3.0658	5.4315
Ecobank Kenya Limited	2017	0.0048	3.3095	3.2507	3.3695	4.7280
Equity Bank Kenya Limited	2017	0.0492	3.5153	2.9479	2.8947	5.6090
Family Bank Limited	2017	0.0104	3.4216	2.9310	2.9704	4.8392
First Community Bank Limited	2017	0.0045	3.2463	3.0359	2.9930	4.2395
Guaranty Trust Bank (K) Ltd	2017	0.0030	3.2775	2.8771	2.6173	4.4413
Guardian Bank Limited	2017	0.0023	2.9372	2.5522	2.1438	4.1987
Gulf African Bank Limited	2017	0.0104	3.5366	2.9465	2.5099	4.4958
Habib Bank A.G Zurich	2017	0.0013	3.3840	3.0735	2.7342	4.2720
I & M Bank Limited	2017	0.0282	3.1847	3.0021	2.8641	5.2647
Kingdom Bank (formerly Jamii Bora Bank Limited)	2017	0.0022	3.5254	3.0404	0.6990	4.1089
KCB Bank Kenya Limited	2017	0.0913	3.2532	2.8439	2.9103	5.7448
Middle East Bank (K) Limited	2017	0.0007	3.3994	3.1205	3.2060	3.7094
M-Oriental Bank Limited	2017	0.0017	3.3810	2.7933	3.1967	4.0244
National Bank of Kenya Limited	2017	0.0151	4.0004	3.7459	3.0267	5.0412
Paramount Bank Limited	2017	0.0014	3.5741	3.1388	2.4984	3.9796

Prime Bank Limited	2017	0.0088	3.2334	3.0104	2.4245	4.8833
SBM Bank Kenya Limited	2017	0.0015	3.3321	3.3472	2.9538	4.0699
Sidian Bank Limited	2017	0.0027	3.3229	2.7841	2.5038	4.2856
Spire Bank Ltd	2017	0.0015	3.2085	2.8105	1.8909	4.0472
Stanbic Bank Kenya Limited	2017	0.0300	3.3529	2.9358	2.4925	5.3791
Standard Chartered Bank Kenya Limited	2017	0.0309	3.1649	2.7292	2.4955	5.4550
Trans-National Bank Limited	2017	0.0016	3.1523	2.7759	2.6415	4.0126
UBA Kenya Bank Limited	2017	0.0007	3.2292	2.7967	2.0878	3.8132
Victoria Commercial Bank Limited	2017	0.0042	3.0013	2.9135	2.4530	4.4147
HFC Limited	2017	0.0117	3.1858	2.4332	2.4219	4.7933
African Banking Corporation Limited	2018	0.0007	3.2051	2.5214	2.2079	4.4348
Bank of Africa Kenya Limited	2018	0.0055	3.1530	2.7077	2.7335	4.6909
Bank of Baroda (K) Limited	2018	0.0091	3.4345	3.0210	2.7112	5.0900
Absa (formerly Barclays Bank of Kenya Limited)	2018	0.0390	3.1495	2.7866	2.5740	5.5124
Bank of India	2018	0.0040	3.0740	2.4692	2.5080	4.7972
Citibank N.A Kenya	2018	0.0057	2.9809	2.5086	2.2740	4.9327
Consolidated Bank of Kenya Limited	2018	0.0021	3.1656	2.7877	2.4811	4.1102
Co-operative Credit Bank Limited	2018	0.0537	2.8891	2.8831	2.8049	5.6110
Development Bank of Kenya Limited	2018	0.0021	3.1328	2.8070	1.5904	4.1853
Diamond Trust Bank Kenya Limited	2018	0.0318	3.5082	3.0109	2.9959	5.4495
Ecobank Kenya Limited	2018	0.0031	2.9821	2.9607	2.8383	4.7361
Equity Bank Kenya Limited	2018	0.0482	3.4011	2.9589	2.8624	5.6420
Family Bank Limited	2018	0.0098	3.3016	2.9265	3.1559	4.8255
First Community Bank Limited	2018	0.0022	2.9436	2.7134	2.9639	4.2524
Guaranty Trust Bank (K) Ltd	2018	0.0028	3.1703	2.5262	2.6974	4.4035
Guardian Bank	2018	0.0020	2.7628	2.4202	1.7464	4.2091

Limited						
Gulf African Bank Limited	2018	0.0049	3.4021	2.8489	2.5373	4.5228
Habib Bank A.G Zurich	2018	0.0013	3.2342	2.9757	2.8847	4.3329
I & M Bank Limited	2018	0.0301	3.0903	2.6275	2.8723	5.3601
Kingdom Bank (formerly Jamii Bora Bank Limited)	2018	0.0019	3.4148	3.0072	2.6145	4.0002
KCB Bank Kenya Limited	2018	0.0906	3.1316	2.8703	2.6357	5.7936
Middle East Bank (K) Limited	2018	0.0006	3.3756	3.1967	2.8503	3.7292
M-Oriental Bank Limited	2018	0.0017	3.2242	2.6176	2.9415	4.0218
National Bank of Kenya Limited	2018	0.0138	3.8460	3.3518	3.1523	5.0612
Paramount Bank Limited	2018	0.0013	3.4815	3.0120	2.7410	3.9951
Prime Bank Limited	2018	0.0080	3.2164	2.8947	2.8415	4.9936
SBM Bank Kenya Limited	2018	0.0049	3.3389	3.0362	3.1755	4.8491
Sidian Bank Limited	2018	0.0029	3.2368	2.5595	2.2799	4.4036
Spire Bank Ltd	2018	0.0013	3.0054	2.7002	2.1787	3.9649
Stanbic Bank Kenya Limited	2018	0.0324	3.2360	2.6547	2.5261	5.4486
Standard Chartered Bank Kenya Limited	2018	0.0278	2.9601	2.3402	2.4088	5.4544
Trans-National Bank Limited	2018	0.0016	3.1305	2.7835	1.8318	4.0101
UBA Kenya Bank Limited	2018	0.0007	3.0599	2.8138	2.4753	4.1856
Victoria Commercial Bank Limited	2018	0.0048	2.8751	2.7626	2.5890	4.5097
HFC Limited	2018	0.0103	3.0232	2.4967	2.5133	4.7565
African Banking Corporation Limited	2019	0.0070	2.8972	1.8856	2.7822	4.5707
Bank of Africa Kenya Limited	2019	0.0050	2.7751	2.2660	2.8321	4.7714
Bank of Baroda (K) Limited	2019	0.0036	3.0695	2.4596	0.3511	5.3483
Absa (formerly Barclays Bank of Kenya Limited)	2019	0.0066	2.7322	1.8490	1.8339	5.3529
Bank of India	2019	0.0023	2.7066	2.1770	0.7500	4.8615

Citibank N.A Kenya	2019	0.0079	2.8824	1.9333	1.0936	4.9806
Consolidated Bank of Kenya Limited	2019	0.0055	2.7613	2.3472	2.6687	4.3596
Co-operative Credit Bank Limited	2019	0.0045	2.9027	1.8814	2.9787	5.7061
Development Bank of Kenya Limited	2019	0.0066	2.5965	1.9848	1.2723	4.4035
Diamond Trust Bank Kenya Limited	2019	0.0033	3.2363	2.8212	2.1817	5.5815
Ecobank Kenya Limited	2019	0.0089	2.9539	2.0298	1.5441	4.8093
Equity Bank Kenya Limited	2019	0.0089	2.9326	2.1397	2.2154	5.5296
Family Bank Limited	2019	0.0068	3.1534	2.3871	2.2370	4.9391
First Community Bank Limited	2019	0.0064	2.7016	2.6833	1.5077	4.5784
Guaranty Trust Bank (K) Ltd	2019	0.0047	2.7556	2.0878	2.6350	4.6563
Guardian Bank Limited	2019	0.0121	2.5261	1.0049	2.3062	4.5585
Gulf African Bank Limited	2019	0.0087	3.1487	2.3273	1.9252	4.3678
Habib Bank A.G Zurich	2019	0.0086	2.9226	1.6765	1.2405	4.0615
I & M Bank Limited	2019	0.0066	2.7918	2.2763	2.4127	5.6326
Kingdom Bank (formerly Jamii Bora Bank Limited)	2019	0.0061	3.0684	2.5551	2.5185	4.6990
KCB Bank Kenya Limited	2019	0.0141	2.8009	2.3018	2.3627	5.9646
Middle East Bank (K) Limited	2019	0.0094	2.7747	2.3023	2.7742	3.8669
M-Oriental Bank Limited	2019	0.0110	2.9629	2.1837	2.5054	4.7034
National Bank of Kenya Limited	2019	0.0076	3.3389	2.9740	0.7823	5.6182
Paramount Bank Limited	2019	0.0072	3.1734	2.3545	1.5383	3.8381
Prime Bank Limited	2019	0.0121	2.9412	2.2486	1.3617	4.8951
SBM Bank Kenya Limited	2019	0.0105	2.7916	2.6461	2.4623	4.6090
Sidian Bank Limited	2019	0.0125	2.7064	2.3754	1.1326	4.1855
Spire Bank Ltd	2019	0.0082	2.7138	2.3642	3.2333	3.6256
Stanbic Bank Kenya Limited	2019	0.0079	2.9350	2.2636	3.7896	5.2576

Standard Chartered Bank Kenya Limited	2019	0.0170	2.8089	2.1133	3.1645	5.6855
Trans-National Bank Limited	2019	0.0109	2.8223	2.2667	2.8993	4.6046
UBA Kenya Bank Limited	2019	0.0144	2.5077	1.4671	3.1947	4.8151
Victoria Commercial Bank Limited	2019	0.0085	2.4990	2.4292	2.9869	4.7947
HFC Limited	2019	0.0083	2.7067	1.8593	1.6145	4.9871

EFFECTS OF BANKING SECTOR INNOVATION ON FINANCIAL INCLUSION IN KENYA

Remove Watermark Now

ORIGINALITY REPORT

12%	11%	3%	9%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	erepository.uonbi.ac.ke Internet Source	2%
2	pdfs.semanticscholar.org Internet Source	2%
3	Submitted to Kenyatta University Student Paper	1%
4	ir.jkuat.ac.ke Internet Source	1%
5	Submitted to KCA University Student Paper	1%
6	Submitted to University of Kabianga Student Paper	1%
7	erepository.uonbi.ac.ke:8080 Internet Source	1%
8	Submitted to University of Nairobi Student Paper	1%
9	ijecm.co.uk	