EFFECT OF FINANCIAL INCLUSION ON FINANCIAL DEVELOPMENT IN KENYA

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DECLARATION

I, the undersigned, declare that this is my original work and has not been presented to any institution or university other than the University of Nairobi for examination.

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This research project has been submitted for examination with my approval as the University Supervisor.

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DEDICATION

I dedicate this work to my mom and dad Mr. and Mrs. Nelson Karanja. Your prayers and encouragement were a source of inspiration throughout the study period. To my husband Humphrey Mashedi and my children Aiden and Alayna who have been affected in every way possible by this quest, thank you very much for the love, patience and sacrifices that you have made for me. I have been forced to be away from you most of the time and at the hour of need but with your understanding, patience and prayers, we have reached this far.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
ATM	Automated Teller Machine
CBK	Central Bank of Kenya
FD	Financial Development
FGLS	Feasible Generalized Least Squares
FI	Financial Inclusion
GDP	Gross Domestic Product
GOK	Government of Kenya
IMF	International Monetary Fund
KNBS	Kenya National Bureau of Statistics
LR	Likelihood Ratio
MTP	Medium Term Plan
OIC	Organization of Islamic Countries
OLS	Ordinary Least Squares
SDG	Sustainable Development Goals
SPSS	Statistical Package for Social Sciences

ABSTRACT

Over the recent years, a lot of attention has been drawn to financial inclusion in efforts aimed on stimulating economic development sustainability and elimination of poverty, and it has become a topic of great importance. The main reason for this is the awareness that about 2 billion adults across the globe continue to lack access to financial services hence slowing down the social as well as economic development. It has been noted that lack of accessibility of financial services leads to inabilities of households to invest in activities like education and business. Henceforth the likelihood of increasing future levels of income, financial development and economic growth is lowered. This research sought to determine the effect of financial inclusion on financial development in Kenya. The independent variable for the study was financial inclusion operationalized as agency banking, mobile banking, bank branches, ATMs and number of microfinance institutions. The control variables were economic growth rate represented by economic growth rate, balance of payments represented by current account deficit and interest rates measured as the average bank lending rate on a quarterly basis. The dependent variable was financial development measured as a ratio of credit lending to the private sector to GDP. A period of 10 years between January 2010 and December 2019 was studied through gathering of secondary data. Descriptive research design was employed while multiple linear regressions model was applied in analysis of the association between the variable. The data was analyzed by use of SPSS version 23. An R-Square value of 0.740 was produced from the study results which meant that 74 percent of the disparity in financial development in Kenya can be explained by the eight independent variables while 26 percent in the disparity of financial development was related to the variables that were not part of this study. ANOVA results show that the F statistic was significant at 5% level with a p=0.000. Henceforth, the model was appropriate in explaining the relationship between the specified variables. In addition, it was revealed that bank branches, economic growth rate and balance of payments established positive and statistically significant values for this study while agency banking, mobile banking, ATMs and number of MFIs produced positive but statistically insignificant values for this study. Finally, interest rates produced negative and not statistically influence on financial development in Kenya. It is the recommendation of this study that measures be put in place to enhance bank branches, economic growth rate and balance of payments as these measures have a significant influence on financial development in Kenya.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Over the recent years, a lot of attention has been drawn to financial inclusion in efforts aimed on stimulating economic development sustainability and elimination of poverty, and it has become a topic of great importance. Over fifty national-level, policy making and regulatory bodies by the year 2013 had promised to adopt strategies of financial inclusion to stimulate their economic development (Cihak & Singh, 2013). The main reason for this is the awareness that about 2 billion adults across the globe continue to lack access to financial services hence slowing down the social as well as economic development (World Bank, 2017). It has been noted that lack of accessibility of financial services leads to inabilities of households to invest in activities like education and business. Henceforth the likelihood of increasing the future levels of income, Financial Development (FD) and economic growth is lowered (Griffith-Jones et al., 2013). Klapper (2016) contended that in achievement of the sustainability Development Goals financial inclusion plays an important role in enabling it, majorly by creation of jobs, contracting the gender gap and improved accessibility of health services that consequently lead to FD.

This research was based on various theories including the financial intermediation theory, finance led growth theory and financial inclusion theory that have sought to explain the associations between financial inclusion and FD. The theory of financial inclusion by Ramo (2013) posits that the liberalization of the financial sector promotes financial inclusion which subsequently leads to FD. The financial intermediation theory by Mises (1912) supports this study in that banks and other

financial institutions enhances financial inclusion by developing channels aimed at reaching the unbanked members of the society. The finance led growth theory is founded on the idea that financial sector acts as a catalyst to resource mobilization and enhances effective resource utilization through saving and investment. Saving and investments are perceived to be key elements of FD (Gberevbie, 2011).

Kenya's vision 2030 key elements were establishment of an international financial services' centers and deepening of capital markets as flagship projects for attainment of growth targets (GOK, 2007). The Vision 2030 for financial sectors envisages a globally competitive and vibrant financial sector fostering high levels of savings and financing the Country's investment needs. One of the specific goals have been to see a rise in the bank deposits to 80% from 44% of GDP and decrease the proportion of the population that lack access to finance from 85% to below 70%. Despite the improvements noted in the financial sector in Kenya, credit lending to private sector declined to about 14 % of GDP in 2017 (CBK, 2019). It is therefore imperative to investigate whether financial inclusion which has been on the rise has an effect on FD in Kenya.

1.1.1 Financial Inclusion

Joshi (2010) definition of Financial Inclusion (FI) as the provision of a variety of financial products at affordable cost and to all segment of the society especially the lower income earners. Triki and Faye (2013), defines FI as all initiatives which make formal financial services readily available, easily accessible and affordable to all subgroups of the population in a particular country. FI is also defined as the procedure which ensures accessibility, availability, and utilization of financial systems by members of an economy (Sarma 2008). FI entails extending affordable financial

services and products to not only member of the economy but especially to those that appear to be left out (UshaThorat, 2007).

The concept of sustainable and inclusive economic growth is multifaceted concept which considers FI as one of the key component. In order to spur a sustainable and inclusive economic growth, it is paramount to rethink how avail relevant financial instruments and services for the benefit of the poor and other less fortunate groups in the society (Triki & Faye, 2013). As a result, the importance of an all-inclusive financial system is generally acknowledged in the policy circle and has become a central factor in the formulation of financial policy in many countries.

Financial inclusion is often measured by assessing the number of people that own and utilize formal financial products (Klapper, El-Zoghbi & Hess, 2016). Demirguc-Kunt et al. (2018) used the number of adults that held accounts with financial institution in different countries across the globe to measure FI in their contribution to Global Findex Database. This study will measure FI as the number of agency banking outlets, number of Automated Teller Machines (ATMs), number of mobile banking accounts and number of bank branches over the period of the study.

1.1.2 Financial Development

According to World Bank (2012), FD is described as the advancement of the financial sector with respect to efficiency, debt, stability and accessibility (World Bank, 2012). According to Roubini and Bilodeau (2008), financial development can be defined as enabling infrastructural factors, institutions and policies whose outcome is broad and deep access to capital and financial services and effective financial intermediation. A good FD measurement is vital in assessing the advancement of financial sector and articulating its subsequent impact on poverty reduction and economic growth.

Levine et al. (2012) cites four conventional ways that could be used to ascertain FD which are; the size and market of financial institutions i.e. financial depth, the degree to which financial services are utilized by individuals i.e. access, the financial institutions' efficiency in mediation of resources and facilitation of financial transactions i.e. efficiency and the financial institutions' stability. It is on this basis that various FD parameters were established.

Ayadi, Arbak and Naceur (2013) used three FD indicators that can be used for the measurement of FD. These included: Credit to private sector (%GDP); bank deposits (% GDP); and stock market capitalization (% GDP). While Standley (2008) in measuring financial market development in Sub-Saharan Africa used five indicators to measure FD namely Deposit money- bank assets (%GDP), Value traded, Credit to private sector (% of GDP); Turnover ratio and Market capitalization (%GDP). The current study will use credit issued to the private sector by all financial institutions, banks included divided by GDP as the measure for FD.

1.1.3 Financial Inclusion and Financial Development

In the current financial times, tremendous attention has been paid to the notion of FI and its effects on FD. It has been identified that the reason why most of the countries remain under developed is due to lack of sufficient financial support from foreign companies, well-wishers, donors, foreign direct investors and government injection of money to the economy through either subsidies or granting cheap loans (Rahman & Mustafa, 2015). Globalization is among the factors which have been praised to contribute directly towards FI and FD. This has contributed to the growth of capital markets and foreign direct investment which has enabled investors to invest their

financial resources to nations of their choice leading to enhanced flow of financial resources in an economy which affect the credit available to the private sector.

With increment in FI households are able to have easier access to borrowings and savings products as a result of smoothing of consumption (& Yetman, 2015). Because output volatility is eliminated, central bank has a less work in managing price stability. Additionally, when the FI is increased it translates to a larger percentage of economic activities that depends on interest rates, resulting to the possible greater significance interest rates in monetary transmission (Mehrotra & Yetman, 2015). Henceforth the monetary policy effectiveness is enhancing, suggesting the three is increased FD.

When FI is increased on the other hand implies that there is increase in the number of transactions which are done by the same intermediaries that exists. As a result, the social cost of individual institutional imperfections can be expanded by the increased intensity of participation in the financial markets. Subsequently, social and moral hazard occurrence will possibly increase and hence jeopardize FD (De la Torre et al., 2011). Considering this, the high number of financial intermediaries to be desirable ought to be properly governed and there should be sufficient structure to regulate and supervise them. Then, a greater risk that in presented to the financial markets when there is an expansion in the local institutions number for instance rural banks or cooperatives and this makes them be at risk against occurrences of recessions and natural calamities (García & Jose, 2016).

1.1.4 Financial Inclusion and Financial Development in Kenya

Financial inclusion has been recognized to be significant in economic development and reduction of poverty in the Vision 2030 economic pillar, the Kenya economic

blueprint and financial sector medium term plan of the duration 2012-2017 (GoK, 2003). There are empirical as well as theoretical proofs that supports this positive linkage between financial inclusion and FD (Rajan & Zingales, 1998; DFID, 2004; World Bank, 2002). However, there is little literature showing how FI and FD is connected.

In 2005, the Kenya Financial Sector Deepening programme was founded with the aim of stimulating creation of wealth and reduction of poverty by improving the financial services accessibility for households with lower income and small scale enterprises. Over the last five years, many financial service providers have experience increased competitions which has led to them moving more into the low income market due to the efforts of FSDK. Additionally, introduction of agency banking as well as mobile banking by commercial banks have brought benefits as they are competing for the mass market space. Moreover, the government has played a major role in coming up with suitable regulations aimed of facilitating banking for low income and strengthening microfinance institutions. All these have improved FI in the country which is hypothesized to improve FD (CBK, 2018).

A report from the Central Bank of Kenya (2015) states that the country's financial sector has experienced significant growth both in size and complexity which has greatly boosted the economy's overall growth. The sector mainly constitutes of banking, insurance, capital markets, credit and savings cooperatives and pensions. Other key players consist of forex exchange bureaus, money remittance companies, microfinance institutions and development finance institutions. Safety nets and resolution organizations additionally exists and incorporate policyholders' compensation funds for the insurance industry, for commercial microfinance bank the

Kenya deposits insurance and finally for the Capital Markets we have the investor compensation fund. These are backed by CIS platforms through Financial Markets Infrastructure (FMI) systems and CRB and a vibrant consisting trading, custodial services platforms and payments and settlements. The total assets not including capital markets were responsible for 83.27% in 2017 whereas equities' market capitalization accounted for 32.93% of nominal GDP.

1.2 Research Problem

Many researchers are becoming more interested to conduct studies on the determinants of FD. "King and Levine (1993), Shaw (1973), McKinnon (1973), Gurley and Shaw (1955) and Goldsmith (1969), Ghani (1992), Levine and Zervos (1996) and DeGregorio and Giudotti (1995) support the preposition of the supply leading hypothesis that FD is influenced by economic growth and in effect favorable macro-economic environment. FI is perceived as the procedure which marks the improvement of financial intermediary services in terms of quality, quantity as well as efficiency that aids in fostering opportunities, improving lives and strengthening economies. FI additionally promotes saving among locals which consequently lead to FD (Babajide et al., 2015).

Kenya's vision 2030 key elements were establishment of international financial services' centers and deepening of capital markets as flagship projects for attainment of growth targets (GOK, 2007). The Vision 2030 for financial sectors envisages a globally competitive and vibrant financial sector leading to high levels of savings and financing of investment needs of Kenya. One of the specific goals have been to increase bank deposits to 80% from 44% of GDP and decrease the share of population that lack financial access from 85% to below 70%. Despite the improvements noted in

the financial sector in Kenya, credit lending to private sector declined to about 13% of GDP in 2019 while FI has been on the rise (CBK, 2019). It is therefore imperative to examine the effect that FI has of the FD in Kenya.

International studies in this area have mainly concentrated on the influence of FI on economic growth or other related indicators. Le, Chuc and Hesary (2019) looked on the influence of FI on financial efficiency and sustainability in Asia and found that financial efficiency is negatively affected by increased FI whilst it influences financial sustainability positively. Kim et al. (2018) studied the linkage between FI and economic growth for Organization of Islamic Cooperation (OIC) countries and found out that FI has a major role in improving the growth of the economy and there are common causalities amongst the two variables. Sharma (2016), investigated the connection existing between the different FI dimensions and the economic growth in India which is an emerging economy over the timeframe 2004 to 2013. Bank services availability, banking penetration and usage of banking services were the three main FIs dimensions that were looked at. Most of the FI dimensions were found to be positively connected to economic growth in the investigation.

Locally, existing studies have mainly focused on other determinants of FD without considering how FI influences FD. Ndiang'ui (2019) focused on the influence of macro-economic variables on FD in Kenya and found that interest rates positively and significantly influence FD while government domestic borrowing negatively and significantly affects FD. Ochieng' (2018) focused on effect of government local borrowing on the Kenyan financial sector development and concluded that government domestic debt has a significant negative influence on FD. Mogaka (2017) studied on the influence of government domestic debt on development of the

development of financial market at the East African Community and found that government domestic debt has a significant positive effect on development of the East African Community financial market. This research focused on the effect of FI on FD in Kenya by answering the research question: What is the effect of FI on FD in Kenya?

1.3 Research Objective

To determine the effect of financial inclusion on financial development in Kenya

1.4 Value of the Study

The study's results will be used as a reference point by academicians, researchers and students that wish to conduct studies in this or related areas. More so, scholars and researchers will benefit as this study will help them identify other areas of future studies through listing associated topics which needs further studies and gaps that need to be bridged.

The government and its bodies like CBK, Capital Markets Authority will benefit in the formulation and implementation of policies and regulations that governs operations in the financial system. Good policies in terms of macroeconomic factors and other variables that will be found to have an influence on FD will add into the advancement of FD and advancing of the economy as a whole.

The study’s findings will also be beneficial to investors in the financial markets as they will get a deeper understanding on the part performed by FI on FD and take the necessary actions to maximize their returns. Furthermore, the survey shall make contributions to theory in terms of FI and FD.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section seeks to review theories that this study is based on. The section further provides a discussion of empirical studies carried prior to the current research topic and areas related. Determinants of FD are also discussed in the section and finally a conceptual framework is presented to show how the study variables relates to each other.

2.2 Theoretical Framework

Theoretical framework provides a foundation for understanding the theoretically expected relationship among the study variables and in this case FI and FD. The theories selected for this research are the financial inclusion theory, financial intermediation theory and the finance led growth theory.

2.2.3 Financial Inclusion Theory

Ramo (2013) came up with this theory, which posits that the liberalization of the financial sector promotes financial inclusion, which subsequently leads to financial development. The financial inclusion concept is often used to describe an atomized financial system, with no financial repression. It results from adopting appropriate policies, such as comparing real rates of returns to real finance stock. In contrast, shallow systems results from the challenges faced in the relative financing process. The growth of intermediation contributes to financial inclusion (Yao, Wu, & Kinugasa, 2015). Huang, Shi and Wu (2018) contend that an improved monetary system has the potential to create opportunities for institutions to make profits and from bill dealers to industrial banks and insurance firms. Financial inclusion

positively influences growth through the improvement potential of investments. This link further confirms the positive role that financial liberalization had on growth.

It has been found that a sound and proper financial sector functioning contributes to a variety of improvements in economic results, as demonstrated by Abosedra and Fakih (2017), then by Demirguc Kunt and Levine (2009), a lot of literature exists that shows the positive outcomes that nations with positive financial inclusion attain. The proponents of the theory of financial inclusion, Yao et al. (2015), noted the major role that the banking system played in economic development that was free from controls on rates of interest and quantities common at the time. In addition, Karimo and Ogbonna (2017), another proponent of theory of financial inclusion, indicates that the need for high economic growth is what triggers demand in the financial sector. According to this view, the economic improvements drive the demand for use of money high, which subsequently promotes financial inclusion. This is to say that the development and progress of financial markets occurs as a result of the demand for services from the real sector.

The theory of financial inclusion is used to explain the role of financial deepening in financial inclusion. Financial deepening facilitates financial inclusion which addresses the basic issue of growth with equity (David-West, 2015). Financial inclusions across the world empower the underprivileged population who are a major driver of social and financial development. Some of the financial inclusions include money mobile agents who act as financial intermediaries or banks branches since they have enough balance of payments to meet customer’s need for cash deposit and withdrawal services. This collection of agents have the ability to expand the mobile operator‘s reach to the rural areas thereby increasing financial penetration to the unbanked

population in areas without a physical bank presence, hence creating a branchless system of payment, different from the conventional bank-led business structure.

2.2.2 Financial Intermediation Theory

This theory was proposed by Mises (1912) and it contends that financial institutions, particularly the banks performs an important role in financial intermediation. The intermediation role of the bank involves collection of funds from customers who have surplus funds and issues these funds to borrowers who lack enough money and charges interest as the cost of lending to them. This relationship enables banks to create a state of balance of payments as money is obtained from customers who have short term maturity funds and lends to customer with long term maturity basis. (Dewatripont, Tirole & Rochet, 2010). Mises (1912) maintains that the position of banks as credit dealers is defined by lending the funds borrowed.

The primary role of the banks can thus be said to be financial intermediation where they lend and borrow funds. As indicated by Mises (1912), banks participation in financial intermediation denies them the chance to create money whereas withdrawing from the process gives them an opportunity to create money. Conversely, Allen and Santomero (2001) critique the theory on the basis that they see risk management as a developing factor in the financial sector and put the concept of costs of participation at the forefront.

The financial intermediary model's contribution to this research is that it highlights the role played by monetary intermediaries including banks, the share market and other financial firms that act as agents to community members and bridge the balance of payments gap. The financial intermediaries further, play a critical role in FI

through circulation of financial resources leading to financial deepening and consequently FD.

2.2.3 Finance Led Growth Theory

Finance led growth theory was first introduced by Schumpeter in 1911 when the financial sector was limited to its activities. Previously the theory was known as the finance-led growth hypothesis, pointed out that progress and expansion in the financial sector as a whole performs a critical part in a nation's economic growth (Schumpeter, 1911). The theory was founded on the idea that financial sector acts as a catalyst to resource mobilization and financial sector mobilizes financial resources and enhances effective resource utilization through saving and investment. Saving and investments are perceived to be key elements of FD (Gberevbie, 2011).

This theory's proponents include Choonget al. (2010), who claim that comprehending the association around FI and FD is a key factor in promoting a nation's economy. The study however identified that in relation to the recent global and national financial crisis; the governments should play a significant role in developing relevant policies which regulate money circulation in the economy. Inflation and other harmful activities in the economy are prone to arise when the financial sector is fully controlling the economy. For this analysis, this concept is important as it describes the connection between FI and FD.

2.3 Determinants of Financial Development

There are various variables that influence FD in a given country. Majority of these factors have an effect on the economy which then has a spiral effect on the financial system and in essence FD. The main variables expected to affect FD are discussed in

this section and they include; FI, economic growth, balance of payments and interest rates (Athanasoglou, Brissimis & Delis, 2005).

2.3.1 Financial Inclusion

With increment in financial inclusion, households are able to have easier access to borrowings and savings products as a result of smoothing of consumption (& Yetman, 2015). Because output volatility is eliminated, central bank has a less work in managing price stability. Additionally, when the FI is increased it translates to a larger percentage of economic activities that relies on interest rates, resulting to the possible greater significance interest rates in monetary transmission (Mehrotra & Yetman, 2015). Henceforth the monetary policy effectiveness is enhancing, suggesting increased FD.

When FI is increased alternatively implies that there is increase in the number of transactions which are done by the same intermediaries that exists. As a result, the social cost of individual institutional imperfections can be expanded by the increased intensity of participation in the financial markets. Subsequently, social and moral hazard occurrence will possibly increase and hence jeopardize FD (De la Torre et al., 2011). Considering this, the high number of financial intermediaries to be desirable ought to be properly governed and there should be sufficient structure to regulate and supervise them. Then, a greater risk that in presented to the financial markets when there is an expansion in the local institutions number for instance rural banks or cooperatives and this makes them be at risk against occurrences of recessions and natural calamities (García & Jose, 2016).

2.3.2 Economic Growth

Economic growth is the increment in the inflation-adjusted market value of commodities produced in a nation over a given time frame (IMF, 2012). Ideally, it is measured by determining the percent rise in real GDP and this is done on an annual basis. The economic growth rate refers to geometric annual growth rate in GDP at the beginning and end of a financial period. Undisputedly, this rate of growth is the average trend in GDP output across the period, which ideally neglects GDP fluctuations within the trend.

A scholarly article by Patrick (1966) depicts a dual causal links between economic growth and financial sector development. The components of granger functioned simultaneously. He labeled the two associations as supply-leading and demand following hypotheses. The demand-following approach however posited a causal association from economic growth and financial growth thus providing more evidence on the association. Economic growth grew and increased need for financial services boosted the financial sector's growth. According to demand-following hypothesis, the financial markets developed and advanced due to higher demand for their services accruing from the expanding real economy. The development of financial markets was perceived as a mere response to an economy that is growing. The expansion and growth of the real sector generates new set of demands from the financial markets which in turn increases new financial services' demand thus increasing pressures to establish more sophisticated and large financial institutions to upcoming demands for the services that make financial deepening a growth component in the economies' real sector.

2.3.3 Balance of Payments

Balance of payments greatly influences globalization in the modern world which thereafter leads to FD. Liberalized trade together with capital flows is a big incentive for financial and industrial incumbents to drive towards FD (Rajan & Zingales, 2004). This was attributed with the decline of the government's role in the financial sector which resulted in unregulated openness. This forced the financial and industrial incumbents to seek finance from unrestricted foreign markets for funding. Incumbents advocated for FD since it attracted new opportunities from open financial markets thus generating higher profits that diluted the effects intensified competition. They therefore posit that trade openness is positively correlated with FD.

Trade liberalization, which is allowing the domestic markets access of foreign goods can influence FD. Through this, as pointed by Zingales and Rajan (2004) in their article Saving Capitalism from the Capitalists, political power of entrenched business interest which may block instistutional changes can be weakened. Trade liberalization lowers the capital base of firms and increases firms' competitiveness thus increasing access from the external sources of capital. Therefore, they embrace the reforms that facilitate more efficient and deeper financial system. This coincides with the findings that a positive association exists between a deeper financial sector and trade openness (Svaleryd & Vlachos, 2002; Rajan & Zingales, 2004). Financial deepening is also promoted free trade as corruption practices are minimal. Corruption prevails during high tariffs since importers exhibit incentives for payment of customs officials to evade tariffs through smuggling.

2.3.4 Interest Rates

The government in the developing countries is the one which spearheads investment and real interest rate is the key factor which influences investment. Interest rates might affect the financial growth that subsequently might lower the growth rate. In the event of high interest rates in the financial markets, many people feel discouraged from getting loans for investments and other development activities will be stagnated (Quinn & Toyoda, 2008).

However, no logical conclusion has been derived from studies on the association between interest rate, finance development and growth in most developing nations (Obstfeld, 2009; Kose et al., 2009; Quinn & Toyoda, 2008). These diverse findings have mainly been attributed to differences in the type of interest rate measure, country coverage, the sample period, and methodologies employed.

2.4 Empirical Review

Although there are many empirical studies done locally as well as globally on FD of an economy, most of the studies have concentrated on the influence of FD on the economic growth or other determinants of FD without focusing on how FI influence FD. The studies that address this relationship have been carried out in varying contexts and their results cannot be assumes to be the same in the local context.

2.4.1 Global Studies

Khalfaoui (2015) undertook an investigation to find the main FD determinants in growing economies. The findings identified institutional variables (financial and banking sector) and the degree of human and economic development as the core determinants while the core determinants of FD in growing nations were identified as legal framework, economic stability and other components of the institutional

framework. FD was measured using the level of lending advanced to the private sector while the variables employed for banking and financial sector included financial structure, inflation, non-performing loans, broad money, legal framework, market capitalization, trade openness, index for credit information and current account deficit.

Sharma (2016) investigated the connection existing between the different FI dimensions and the economic growth in India which is an emerging economy over the timeframe 2004 to 2013. Banking services availability, banking penetration and usage of banking services were the three main FI's dimensions that were looked at. Most of the FI dimensions were found to be positively connected to economic growth in the investigation. Granger causality analysis revealed that a causal relationship amongst economic development and geographic outreach and a unidirectional causality with a number of deposits/loan accounts to GDP was also revealed.

Ibrahim (2017) studied on the influence that FD had on the economic growth in Sub-Saharan Africa. The conclusion of the study development of the financial sector was anticipated to have notable contribution to economic growth by providing enhanced quantity and quality of financial services and that higher level of finance leads to long run growth and so is human capital and overall income level. The study signifies the importance of FD in changing how the economy should operate for economic growth to be realized.

Kim et al. (2018) investigated the connection amongst FI and the economic growth for OIC countries. In measuring the main factors of FI, five variables were used which included; bank branches per 100,000 adults, automated teller machines per 100,000 adults, borrowers and deposits account from commercial banks per 1000 adults, and

the volume of life insurance premium volume compared to GDP. From the outcomes of the analysis on the 55 OIC countries, it was revealed that FI plays a major part in promotion of economic growth and there are common causalities amongst the two variables.

Le et al. (2019) investigated the FI trend in Asia and how it affects financial sustainability and financial efficiency. 31 Asians were used as a sample in the study and the period of study was 2004 to 2016. The trend was found to be fluctuating around countries and no strong relationship was established in most circumstances. The outcomes were strong to various standardization practices. Additionally, the study employed Feasible Generalized Least Squares (FGLS) in analyzing the effect of FI on financial sustainability and financial analysis. From the outcomes it was revealed that FI affects financial efficiency negatively whilst it positively affected financial sustainability. Similar results were revealed in all the samples and also in the two subsamples of countries that had varying levels of income.

2.4.2 Local Studies

A study by Aduda, Murayi and Chogii (2014) explored the impact of capital market development on Kenya's FD. The study's goal was to access the impact of extension of money related improvements by the Capital Market in Kenya. The exploration proposed five autonomous effects for extension of money by capital market extension and one factor for FD. The research annulled that three out of the cited factors had a positive association with GDP and was therefore an asset showcase depicting a major impact on Kenya's monetary advancement. The discoveries were however rather unfulfilling and linking them with previous studies resulted to financial improvement.

The scrutiny depicted a strong association between financial advancement injections of funds into the capital markets for potential investors.

Mogaka (2017) explored the impact of domestic public debt on financial market development in the EAC Countries. The survey used secondary data collected for a 10-year period ranging 2007 to 2016 from World Bank website, Central banks websites, national treasuries and the Kenya Bureau of Statistics. The survey employed the descriptive research design. The results revealed that domestic public debt had a significant effect on the financial market development of the East Africa Countries.

Ochieng (2018) aimed on determining the influence of government domestic borrowing on FD in Kenya. Secondary data was used in the study that was gathered for a 10 years done on a quarterly basis for the period ranging January 2008 to December 2017. In analyzing the relationship of the variables descriptive research design together with multiple linear regression was applied. The results established that independently, interest rates, economic growth, trade openness and inflation rates are insignificant determiners of FD in Kenya whereas government domestic borrowing has a significant effect on FD.

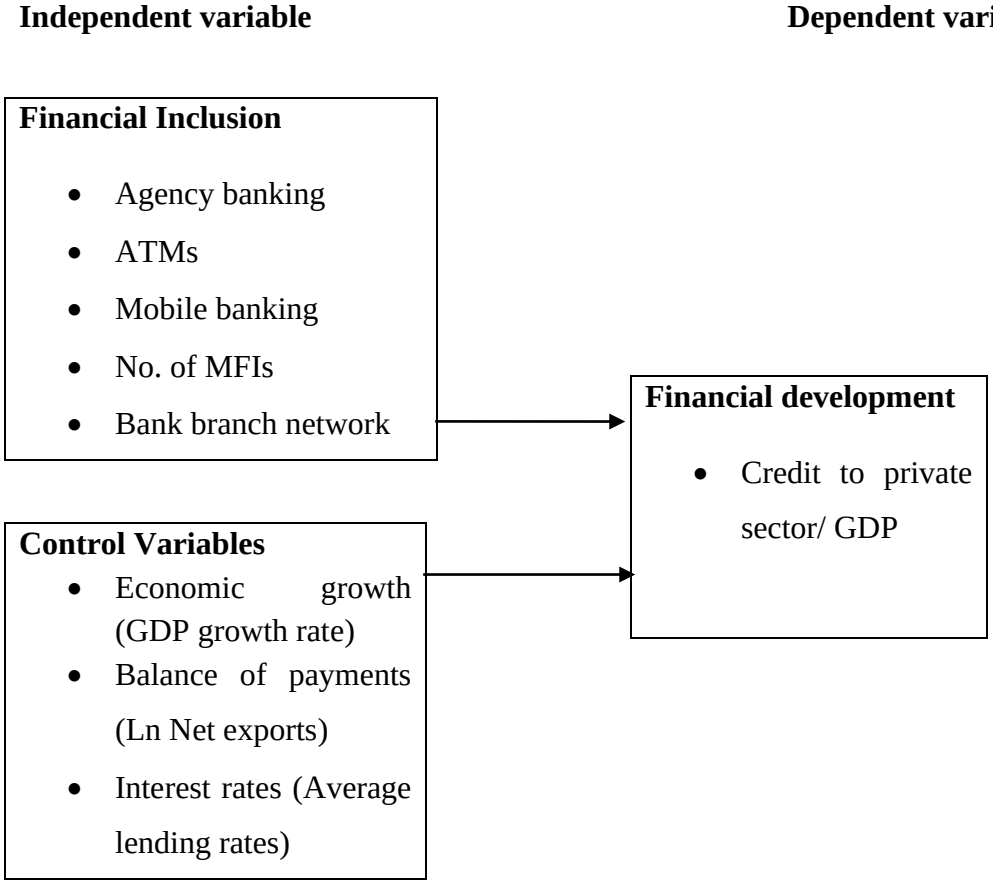
Midigo (2018) explored the role of investment banking on FD in Kenya. 21 investment banks in Kenya form the population of study. The study applied secondary data of 10-year quarterly basis period during the timeframe January 2008 to December 2017. In analyzing the variables relationship, multiple linear regression together with descriptive cross sectional research design was used. The results revealed that only corporate finance service is a statistically significant determinant of FD in Kenya.

Ndiang'ui (2019) centered on determining the effect of selected macro-economic variables on FD in Kenya. Secondary data was used in the study that was gathered for a 10 years done on a quarterly basis for the period ranging January 2009 to December 2018 on a quarterly basis. In analyzing the relationship of the variables a descriptive research design together with multiple linear regression was applied. The results revealed that individually interest rates both positively and significantly influence the Kenyan FD while government domestic borrowing significantly and negatively influences the Kenyan FD.

2.5 Conceptual Framework

The expected association between the study variables is best explained using a conceptual model. The conceptual model developed below shows how FI and FD in Kenya are related. The independent variable is FI with five measures namely; agency banking, ATMs, mobile banking, microfinance institutions and branch network. The control variables are economic growth as represented by real GDP growth rate, balance of payment as measured by natural logarithm of exports minus imports and interest rates as represented by the average bank lending rates. The dependent variable that the research seeks to explain is FD as characterized by the ratio of credit issued to the private sector by financial institutions divided by GDP on a quarterly basis.

Figure 2.1: The Conceptual Model



Source: Researcher (2020)

2.6 Summary of the Literature Review

In this chapter the theories which anchors this study has been discussed and they comprise of; financial inclusion theory, financial intermediation theory and finance led growth theory. Also, the determinants of FD have also been discussed in this section. Literature review has additionally looked into the previous studies undertaken in the same or related areas in the empirical review section. From the empirical review, it is apparent that no local research has been done to explore the effect of FI on FD in Kenya and this is the research gap the researcher leveraged on.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In determining the effect of FI on FD, the study ought to have a research methodology which layout the procedure through which the research was be conducted. Four sections are incorporated in this chapter that includes the research design, the procedure of collecting data, the diagnostics tests to validate the data and lastly the technique of analyzing the data.

3.2 Research Design

A descriptive research design was utilized in this study to investigate the effect of FI on FD in Kenya. The research used a descriptive research design as it enables one to obtain the state of affairs as the actually exists (Khan, 2008). The researcher is well familiar with the area under scrutiny but wish to learn more with respect to the nature of relationship amongst the study variables hence this research design was the most suitable. More so, the aim of descriptive research is provision of an authentic and correct representation of the study variables and this aided when it comes to responding to the research questions (Cooper & Schindler, 2008).

3.3 Data Collection

Secondary sources of data were utilized. The secondary data for the study was retrieved from KNBS publications and from the CBK website. The quantitative data collected included total private credit on a quarterly basis, central bank lending rate, number agency banking outlets in the country, number of ATMS, number of mobile banking accounts in the country and number of bank branches which were collected from CBK website. Data on GDP, GDP growth rate, imports and exports, were

collected from KNBS on a quarterly basis while data on number of microfinance institutions was collected from Sacco society regulatory authority. The secondary data was collected for a period of 10 years from January 2010 to December 2019 on a quarterly basis.

3.4 Diagnostic Tests

In order to ensure that no violation of the classical linear regression model assumptions before proceeding to estimation of the equations, diagnostic tests are performed. The violation of classical regression model's assumptions leads to arriving at biased and inefficient parameter estimates. The diagnostic tests conducted on the data were Multicollinearity, autocorrelation, normality and heteroskedasticity.

3.4.1 Multicollinearity

In the study multicollinearity was ascertained with the aid of correlation matrix where the threshold for optimum multicollinearity will be 0.8 (Gujarati, 2013; Cooper & Schindler, 2013). Failure to account for multicollinearity results to infinite standard errors and indeterminate regression coefficients emerge thus leading to large standard errors. This affects the accuracy to reject or fail to reject the null hypothesis. The severity of the multicollenarity matters lack of it during the estimation. Therefore, a correlation coefficient exceeding 0.8 implies severe multicollinearity. If the data failed the test, any multicolinear variable would have been dropped from the study and a new measure selected and substituted with the variable which exhibits co-linearity.

3.4.2 Autocorrelation

This research utilized the Wooldridge test for serial correlation to establish the existence of autocorrelation. Serial autocorrelation often emerges during the analysis

of panel data and should be addressed so as to attain the correct model specification. Wooldridge (2012) argues that ignoring serial correlation results to inefficient parameter estimates and biased standard errors. This test's null hypothesis states that no serial autocorrelation exists. The FGLS estimation approach was employed when any serial autocorrelation was noted in the data. In case the assumption was violated the study would have employed robust standard errors in the model.

3.4.3 Heteroskedasticity

Heteroskedasticity is a CLRM assumption that should be tested and fully accounted for if it exists. The CLRM that the error term has a constant variance. The data is said to be homokeskedastic in the event that the error variance is not constant. Executing a regression analysis before testing for heteroskedasticity would result parameter estimates being unbiased and invalid standard errors. Likelihood Ratio (LR) test invented by Wiggins and Poi (2011) was used to measure the panel level of heteroskedasticity in this study. This tests's null hypothesis was that there exists an homoscedastic error variance. Rejection of the null hypothesis implies that there is heteroskedasticity in the study data and this was factored for by testing the FGLS model. In case, the data failed the assumption of homogeneity of variances the study would have used robust standard errors in the model.

3.4.4 Normality Test

Normality tests for the assumption that the response variables' residual are normally distributed around the mean. Shapiro-wilk test and Kolmogorov-Smirnov test were used in determining it. In the case where one of the variables is not normally distributed it was transformed and standardized using the logarithmic transformation method.

3.5 Data Analysis

After the data was collected from the numerous sources, it was arranged in way that could assist to address the research objective. The SPSS computer package version 23 was applied in analyzing the data. The descriptive statistics calculated the measures of central tendency as well as dispersion together with standard deviation for each variable. Inferential statistics on the other hand entailed correlation and regression analysis. Correlation analysis involved establishing the degree of relationship amongst the study variables whereas regression analysis entailed knowing the cause and effect between the variables. A multivariate regression analysis was utilized in determining the association between the dependent variable (FD) and independent variables: agency banking, ATMs, mobile banking, bank branches, MFIs, economic growth, balance of payments and interest rates.

3.5.1 Analytical Model

To determine the relative significance of each of the explanatory variables with respect to FD in Kenya, a multivariate regression model was applied.

The study employed the following multivariate regression model;

$$Y= \alpha+ \beta_1X_1+\beta_2X_2+\beta_3X_3+ \beta_4X_4+ \beta_5X_5+\beta_6X_6 +\beta_7X_7 +\beta_8X_8+\varepsilon$$

Where:

Y = FD as measured by total credit issued to the private sector divided by GDP on a quarterly basis.

$ß_0$ = the regression constant (parameter of the function)

$ß_1$, $ß_2$, $ß_3$, $ß_4$, $ß_5$, $ß_6$, $ß_7$ and $ß_8$ = the coefficients of independent variables which measures the change in dependent variable as a result of a unit change in a given dependent variable

X_1 = agency banking as measured by natural logarithm of the number of agency banking outlets on a quarterly basis

X_2 = mobile banking as measured by natural logarithm of the number of mobile banking accounts on a quarterly basis

X_3 = ATMs as measured by natural logarithm of the number of ATMs on a quarterly basis

X_4 = microfinance institutions as measured by natural logarithm of the number of microfinance institutions on a quarterly basis

X_5 = branch network as measured by the number of bank branch network on a quarterly basis

X_6 = economic growth as measured by GDP growth rate on a quarterly basis

X_7 = balance of payments as measured by natural logarithm of total exports minus imports on a quarterly basis

X_8 = interest rates as measured by average bank lending rates on a quarterly basis

$\acute{\varepsilon}$ = the error term which shows how the observed data differs from the actual population data

3.5.2 Tests of Significance

Parametric tests were conducted in order to determine the statistical significance of the overall model as well as individual parameters statistical significance. The F-test obtained from ANOVA was applied in establishing the overall model statistical significance while that of the individual variables was obtained from the t-test.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND FINDINGS

4.1 Introduction

This chapter presents the analysis of the data acquired from CBK, KNBS and SASSRA to establish how financial inclusion influence financial development in Kenya. Using descriptive statistics, correlation and regression analyses, the research findings were presented on tables.

4.2 Descriptive Analysis

Measures of central tendency and dispersion statistics were used. Central tendency measured the extent to which the data on each variable were concentrated at a central point while dispersion measured the degree to which the data were spread out from the convergent point. The central tendency was measured by the mean while dispersion was measured by the standard deviation. The analysis was extracted from SPSS software for the period of 10years (2010 to 2019) on a quarterly basis. Table 4.1 shows the minimum, maximum, mean and standard deviation of each variable.

Table 4.1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Financial development	40	.2099	.3427	.297338	.0354340
Agency banking	40	25956	225843	124420.275	62756.7531
Mobile banking	40	9707920	57564434	28864410.85	11667484.67
ATMs	40	1754	2623	2384.375	248.1366
MFIs - DT SACCO	40	172	215	191.425	19.6324
Interest rate	40	5.83	18	9.6937	2.83345
Bank branches	40	1022	1597	1367.475	179.0989
Balance of payments	40	-558090	33.9	-229038.513	214219.4345
GDP growth rate	40	3.50	11.6	5.8425	1.38469
Valid N (listwise)	40				

Source: Research Findings (2020)

4.3 Diagnostic Tests

Linear regression assumes insignificant association between between pairs of independent variables. The data on financial inclusion components, interest rates, economic growth and balance of payments were tested for significant Multicollinearity. Variance inflation factors (VIFs) were used in this diagnosis. Table 4.2 shows the VIF test results.

Multicollinearity is a characteristic in data that cannot be eliminated but only ought to be as low as possible. According to Cooper and Schindler (2013) VIF values above 10.0 demonstrate significant multicollinearity between pairs of variables. Table 4.2 shows that the variance inflation factors were 2.841, 2.778, 2.551, 1.548, 2.513, 2.577, 2.660 and 2.604 for agency banking, mobile banking, ATMs, bank branches, MFIs, economic growth, balance of payments and interest rates respectively. This shows that there was no significant multicollinearity between the variables since none of them was above 10.0.

Table 4.2: Multicollinearity Test for Tolerance and VIF

	Collinearity Statistics	
Variable	**Tolerance**	**VIF**
Agency banking	0.352	2.841
Mobile banking	0.360	2.778
ATMs	0.392	2.551
Bank branches	0.646	1.548
MFIs	0.398	2.513
Economic growth	0.388	2.577
Balance of payments	0.376	2.660
Interest rates	0.384	2.604

Source: Research Findings (2020)

Linear regression assumes normal distribution of data. Shapiro-wilk test and Kolmogorov-Smirnov test were used. The null hypothesis for the test was that the secondary data was not normally distributed. The researcher would reject it if the p-value recorded was more than 0.05. Shown in Table 4.3 are the results of the test.

Table 4.3: Normality Test

Financial development	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Agency banking	.178	40	.300	.881	40	.723
Mobile banking	.173	40	.300	.918	40	.822
ATMs	.176	40	.300	.892	40	.784
Bank branches	.173	40	.300	.918	40	.822
MFIs	.175	40	.300	.874	40	.812
Economic growth	.174	40	.300	.913	40	.789
BOP	.176	40	.300	.892	40	.784
Interest rates	.173	40	.300	.918	40	.822

a. Lilliefors Significance Correction

Source: Research Findings (2020)

Both Shapiro-Wilk and Kolmogorov-Smirnov tests revealed that the research data was normally distributed by recording p-values greater than 0.05 and hence rejecting the null hypothesis. The data was consequently considered fit to be used in conducting parametric tests like Pearson's correlation, regression analysis and ANOVA.

Autocorrelation exists where variable measures are influenced by its historical values which makes modelling complex. Autocorrelation is equally referred to as first order serial correlation. In this study, the Durbin Watson test was used for testing autocorrelation. A durbin-watson statistic of 2.222 was within the acceptable range between 1.5 and 2.5 implied that the variable residuals were not serially correlated.

Table 4.4: Autocorrelation Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.860[a]	.740	.673	.0202777	2.222

a. Predictors: (Constant), Interest rate, Balance of payments, GDP growth rate, ATMs, MFIs, Mobile banking, Bank branches, Agency banking
b. Dependent Variable: Financial development

Source: Research Findings (2020)

The study checked for panel level heteroskedasticity by use of the Likelihood Ratio (LR) as indicated in the Table 4.5. This test used the null hypothesis that the error variance was homoscedastic. A chi-square value of 32.36 was produced by the likelihood-ratio test with a 0.0000 p-value. The chi-square value was statistically significant at 1 percent level and in this manner the invalid speculation of consistent fluctuation was rejected meaning the nearness of homoskedasticity in the examination information as suggested by Poi and Wiggins (2001).

Table 4.5: Heteroskedasticity Test

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of Financial development

Chi2(1) = 32.36
Prob > chi2 = 0.0000

Source: Research Findings (2020)

4.4 Correlation Analysis

Correlation analysis measures the relationship that exists between the variables. The study undertakes a Pearson correlation that measures the linear relationship of variables. A correlation of 1 show a perfect positive correlation while of 0 or value close to zero shows no relationship or weak relationship respectively. -1 value, shows a negative perfect relationship and values close to it have strong negative relationship. Table 4.6 shows the value of Pearson correlations for the variables.

In the table, our interest is on how the dependent variable relates to the independent variable. The correlation of agency banking against financial development is 0.559 implying that agency banking exhibits a strong positive association with financial development. The association is also significant as shown by a p value of 0.000. Mobile banking has a strong positive correlation with financial development. This means that the more the transactions carried out through mobile banking, the more the financial development.

Bank branches and ATMs also exhibited a strong positive and significant association with performance as shown by 0.594 and 0.691 respectively. The association is significant as the P values are less than 0.05. Number of MFIs exhibited a moderate positive and significant association with financial development as evidenced by 0.454 and a p value less than 0.05.

Economic growth rate and interest rates exhibited positive and significant association with financial development in Kenya as evidenced by positive correlation coefficients and p values less than 0.05. Balance of payments however did not have a significant association with financial development as evidenced by a p value greater than 0.05. The correlation results further reveal that although the independent variables are related to each other, the association is not strong enough to cause Multicollinearity. This is evidenced by the fact no correlation between the independent variables exceeded 0.7.

Table 4.6: Correlation Analysis

		Financial development	Agency banking	Mobile banking	ATMs	MFIs	Bank branches	GDP growth rate	BOP	Interest rate
Financial development	Pearson	1								
	Sig. (2-tailed)									
Agency banking	Pearson	.559**	1							
	Sig. (2-tailed)	.000								
Mobile banking	Pearson	.450**	.350*	1						
	Sig. (2-tailed)	.004	.000							
ATMs	Pearson	.691**	.227*	.259*	1					
	Sig. (2-tailed)	.000	.000	.000						
MFIs	Pearson	.454**	.269*	.255*	.201**	1				
	Sig. (2-tailed)	.003	.000	.000	.000					
Bank branches	Pearson	.594**	.280*	.218*	.306*	.294**	1			
	Sig. (2-tailed)	.000	.000	.000	.000	.000				
GDP growth rate	Pearson	.583**	.366*	.306	.228*	.248	.391*	1		
	Sig. (2-tailed)	.000	.020	.054	.006	.123	.013			
BOP	Pearson	.276	.273*	.260*	.376*	.373*	.209*	.202	1	
	Sig. (2-tailed)	.085	.000	.000	.000	.000	.000	.212		
Interest rate	Pearson	.369*	.096	.082	.267	.064	.110	.362*	.004	1
	Sig. (2-tailed)	.019	.557	.615	.096	.694	.498	.000	.979	

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
c. Listwise N=40

Source: Research Findings (2020)

4.5 Regression Analysis

So as to assess the effect of financial inclusion on financial development in Kenya, the below model was used.

$Y= \alpha+ \beta_1X_1+\beta_2X_2+\beta_3X_3+ \beta_4X_4+ \beta_5X_5+\beta_6X_6+ \beta_7X_7+\beta_8X_8 + \varepsilon$

A regression analysis was undertaken that had findings as stipulated below.

Table 4.7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.860[a]	.740	.673	.0202777	2.222

a. Predictors: (Constant), Interest rate, Balance of payments, GDP growth rate, ATMs, MFIs, Mobile banking, Bank branches, Agency banking
b. Dependent Variable: Financial development

Source: Research Findings (2020)

In the regression model summary table, the coefficient of determination that is denoted by R square is given as 0.740. It shows the strength in which the model is able to forecast the dependent variable. The value indicates that 74% of the variations in financial development can be described by the model. The other 26% can only be described by other factors that are not in the model. The R value of 86% denotes the relationship between the selected predictor variables and financial development.

Table 4.8: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.036	8	.005	11.011	.000[b]
	Residual	.013	31	.000		
	Total	.049	39			

a. Dependent Variable: Financial development
b. Predictors: (Constant), Interest rate, Balance of payments, GDP growth rate, ATMs, MFIs, Mobile banking, Bank branches, Agency banking

Source: Research Findings (2020)

The significance of the model is established by matching the p value with the alpha value. The model is said to be insignificant when the value of p is higher than that of the alpha while the vice versa is true. The regression analysis is undertaken at 95 degrees of freedom which means the alpha value is 0.05. According to table 4.8, the p value is shown as 0.000 which shows that it is less than the alpha value. We therefore conclude that the relationship between the independent variables and financial development in Kenya is statistically significant.

In order to determine whether to reject or not to reject the null hypothesis we compare the F statistic and the calculated value of F as shown in the table 4.8. If the calculated value is higher than the F statistic, the null hypothesis will be rejected. According to the topic under study, the null hypothesis states that there is no effect of the selected independent variables on financial development in Kenya. The calculated value of F is 11.011 while the F statistic at an alpha of 0.05 and 8, and 40 degrees of freedom is 3.6. The calculated value is higher than the F statistic which means we reject the null hypothesis. We therefore conclude that there is a statistically significant effect of selected variables on financial development in Kenya.

Table 4.9: Model Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2.104	.923		-2.279	.030
	Agency banking	.044	.033	.795	1.333	.192
	Mobile banking	.015	.033	.177	.458	.650
	ATMs	.112	.092	.383	1.211	.235
	Bank branches	.354	.111	1.328	3.188	.003
	MFIs	.037	.072	.115	.512	.612
	GDP growth rate	.007	.003	.287	2.344	.026
	Balance of payments	.006	.000	.389	2.506	.018
	Interest rate	-.002	.002	-.001	-.008	.994

a. Dependent Variable: Financial development

Source: Research Findings (2020)

The coefficients β_0, $ß_1$, $ß_2$, $ß_3$, $ß_4$, $ß_5$, $ß_6$, $ß_7$ and $ß_8$ are given by; -2.104, 0.044, 0.015, 0.112, 0.354, 0.037, 0.007, 0.006 and -0.002 respectively. The model therefore becomes

$$Y = -2.104 + 0.044X_1 + 0.015X_2 + 0.112X_3 + 0.354X_4 + 0.037X_5 + 0.007X_6 + 0.006X_7 - 0.002X_8$$

Where,

Y = Financial development

X_1 = agency banking

X_2 = mobile banking

X_3 = ATMs

X_4 = microfinance institutions

X_5 = branch network

X_6 = economic growth

X_7 = balance of payments

X_8 = interest rates

This model may therefore be used to show the effect of any of the independent variables on financial development, when the variable is increased by 1 unit and all other variables are kept constant.

4.6 Discussion of Research Findings

The study undertook a linear regression model on data collected in determining how financial development in Kenya is influenced by financial inclusion. Diagnostic test were first conducted on the data in order to determine presence of collinearity or presence of residuals in autocorrelations. Collinearity test undertaken showed that all variables had VIF values of less than 10 and therefore there was no collinearity

among the variables. The Durbin Watson value was 2.222 which is less than 2.5 and therefore there were no residuals or autocorrelations that would imply error in the model.

The Pearson correlation showed that the correlation of agency banking with financial development was 0.559 implying that agency banking exhibits a strong positive association with financial development. The association is also significant as shown by a p value of 0.000. Mobile banking has a strong positive correlation with financial development. Bank branches and ATMs also exhibited a strong positive and significant association with performance as shown by 0.594 and 0.691 respectively. Number of MFIs exhibited a moderate positive and significant association with financial development as evidenced by 0.454 and a p value less than 0.05. Economic growth rate and interest rates exhibited positive and significant association with financial development in Kenya as evidenced by positive correlation coefficients and p values less than 0.05. Balance of payments however did not have a significant association with financial development as evidenced by a p value greater than 0.05.

Regression analysis undertaken discovered that the model would predict 74% of variations in financial development in Kenya. The other 26% however would be as a result of factors not in this model. The analysis showed that p value was less than the alpha value and therefore the relationship was significant. The calculated value of F was higher than F statistic making the null hypothesis to be rejected. In conclusion the findings of the study were that there is a significant effect of the selected independent variables on financial development in Kenya.

The findings of the study support a study done by Khalfaoui (2015) who undertook an investigation to find the main FD determinants in growing economies. The findings

identified institutional variables (financial and banking sector) and the degree of human and economic development as the core determinants while the core determinants of FD in growing nations were identified as legal framework, economic stability and other components of the institutional framework. FD was measured using the level of lending advanced to the private sector while the variables employed for banking and financial sector included financial structure, inflation, non-performing loans, broad money, legal framework, market capitalization, trade openness, index for credit information and current account deficit.

The findings are in contrast with Ochieng (2018) who aimed on determining the influence of government domestic borrowing on FD in Kenya. Secondary data was utilized in the study that was gathered for a 10 years done on a quarterly basis for the period ranging January 2008 to December 2017. In analyzing the relationship of the variables descriptive research design together with multiple linear regression was applied. The results established that independently, interest rates, economic growth, trade openness and inflation rates are insignificant determiners of FD in Kenya while government domestic borrowing has a significant effect on FD. The study by Ochieng (2018) had weaknesses in that the data violated the assumptions of regression analysis such as Multicollinearity, which was not addressed.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This section presents a summary of the results from the previous chapter, conclusion, limitations encountered during the study. It also recommends policies that policy makers can use to improve the expectations of Kenyan financial sector in regards to the achievement of financial development. Additionally, the chapter gives recommendations for future researchers.

5.2 Summary

The regression analysis undertaken by the study showed that there was a significant effect of selected independent variables on FD in Kenya. The regression model that was used was also strong as it predicted 74% of financial development in Kenya. Of the five measures of financial inclusion, only bank branches exhibited positive and statistically significant influence on financial development in Kenya. Mobile banking, agency banking, ATMs and number of MFIs had a positive but insignificant effect on financial development in Kenya.

The other independent variables in the regression model were economic growth rate, balance of payments and interest rates that were the control variables. Economic growth rate had a significant effect on financial development implying that an increased economic growth rate leads to FD. Balance of payments was also found to have a positive and significant effect on financial development in Kenya while interest rates was found to have a negative but not statistically significant influence on financial development in Kenya.

The study showed that the p value was below the alpha value of 0.05 at 0.000 implying that the overall model was statistically significant. The F statistic was also less than the calculated value of F at 11.011 as the critical F value was at 3.6. The results were applied to determine the significance of the relationship between the variables and whether or not to reject or accept the null hypothesis.

5.3 Conclusion

From the findings of the study, various conclusions are made. Of the five measures of financial inclusion adopted for this study, only the number of bank branches has a significant positive effect on FD in Kenya. Although agency banking and mobile banking has a positive effect on financial development in Kenya, the effect is not statistically significant and therefore cannot be used to enhance financial development in Kenya. Number of ATM transactions and number of MFIs in Kenya exhibited a positive but not statistically significant influence on FD in Kenya implying that although ATM transactions and number of MFIs has a positive influence on FD, the influence is not statistically significant.

The regression model had a coefficient of determination (R Squared) of 74%, which means that the model could explain up to 74% of the variations in financial development in Kenya. Other variations in the financial development represented by 26% are explained by other factors outside the model. The model was found to be statistically significant and we can therefore conclude that the model is fairly good in predicting financial development in Kenya.

Number of bank branches was found to have a significant influence on financial development implying that the more the bank branches there is in the country, the more the number of individuals who can access them and this leads to financial

development. Economic growth also exhibited a positive and significant association with financial development and this implies that as a country records growth in GDP, financial development increases.

The study also concludes that balance of payments significantly affects financial development in Kenya. This implies that when the country increases its exports as compared to the imports, this will lead to improved financial development as evidenced in this study. This can be explained by the fact that increased exports implies that Kenyans will be received foreign inflows and this gives them the ability to access loans in the domestic market.

This study concurs with Le et al. (2019) who investigated the FI trend in Asia and how it affects financial sustainability and financial efficiency. 31 Asians were used as a sample in the study and the period of study was 2004 to 2016. The trend was found to be fluctuating around countries and no strong relationship was established in most circumstances. The outcomes were strong to various standardization practices. Additionally, the study employed Feasible Generalized Least Squares (FGLS) in analyzing the effect of FI on financial sustainability and financial analysis. From the outcomes it was revealed that FI affects financial efficiency negatively whilst it positively affected financial sustainability. Similar results were revealed in all the samples and also in the two subsamples of countries that had varying levels of income

5.4 Recommendation for Policy and Practice

The study revealed that financial development in Kenya is positively and significantly influenced by number of bank branches in the country. This implies that a country with more bank branches is likely to record higher financial development compared to countries with a low bank branch network. Therefore, the study recommends that

policy makers such as the CBK and other government agencies should come up with policies that make it easy for banks to open branches in different parts of the country as this will have a significant positive contribution on financial development in the country.

The study revealed that there exists a positive and significant influence of balance of payments on financial development in Kenya. Thus, an increase in balance of payments would on average result to an improvement in financial development in Kenya. This study recommends that government and other policy makers should come up with policies that promote local production and makes it easy for locals and other firms in Kenya to export their products. This will lead to increased balance of payment position and in effect financial development.

The study results revealed that there is a positive influence of economic growth on financial development in Kenya. The influence is also statistically significant. The study recommends the need to come up with measures that can boost economic growth as this will have an effect on the financial development. Such measures would include boosting infrastructure development, creating a conducive environment for doing business and ensuring political stability.

5.5 Limitations of the Study

This research study scope was ten years ranging 2010-2019. It is not guarantee that the study findings would be the same for a period longer than 10 years. More so, it is not guaranteed that the findings would extend beyond 2019. A period longer than ten years would add on to the reliability of the findings since it would consider most economic dynamics such as recessions and booms.

Another limitation of this study is the data used. It is difficult to conclude whether the outcomes presented in this study are the reality of the circumstances. The data utilized is only assumed to be accurate. The metrics used may continue to vary year to year depending on the conditions prevailing. Also as opposed to primary data which is usually firsthand information, the current study used secondary data in the public domain. Lastly this study did not exhaust all factors that affect financial development but instead centered on determinants of financial development largely because of the challenge in obtaining data.

To undertake data analysis, this study utilized a multiple regression model. Because of the deficiencies arising from use of regression model for instance misleading and erroneous findings when the value of the variables changes, it is not possible for the researcher to generalize the findings with confidence. The hypothesized association amongst the variables might change as more data continue to be added in the regression model.

5.6 Suggestions for Further Research

Since the current study used secondary data in studying financial inclusion and financial development in Kenya, this study recommends that a further study be conducted which considers primary data collected by use of interview guides or questionnaire and broaden the context to include various players in the financial sector so as to complement this study.

The study did not exhaust the independent variables influencing financial development in Kenya and a recommendation is given that more studies be carried out to factor other variables such as political stability, technological advancement, money supply, educational levels among other variables. By determining how each

variable affect financial development it will aid policy makers in controlling financial development.

This study covered the last ten years 2010-2019 because this was the latest available data. This study suggests that further study be done covering more years for example from 1963 to data so as to complement or disapprove the current study findings. Also future studies might broaden the context to include countries in East Africa community or Africa instead of Kenya alone. To conclude, because of the deficiencies of regression model, same study may be done but use other models for example Vector Error Correction Model (VECM).

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APPENDICES

Appendix I: Research Data

Year	Quarter	Financial development	Agency banking	Mobile banking	Interest rate	ATMs	MFIs - DT SACCO	Bank branches	Balance of payments (Ksh in Million)	GDP growth rate
2010	1	0.2183	25,956	9,707,920	7%	1,754	215	1,022	33.91	7%
	2	0.2264	30,836	10,536,700	7%	1,818	215	1,032	(14,816.34)	8%
	3	0.2157	34,071	14,427,767	6%	1,886	215	1,056	(17,026.56)	8%
	4	0.2314	38,220	16,085,300	6%	1,948	215	1,063	(22,234.62)	12%
2011	1	0.2617	34,913	17,016,067	6%	2,021	215	1,082	(22,777.18)	8%
	2	0.2859	39,545	17,942,700	6%	2,060	215	1,122	(31,291.72)	7%
	3	0.2827	44,858	18,604,200	7%	2,097	215	1,140	(36,376.40)	6%
	4	0.2883	49,146	19,286,900	15%	2,116	215	1,161	(30,878.43)	4%
2012	1	0.3120	53,909	18,955,134	18%	2,163	215	1,167	(26,994.49)	4%
	2	0.3177	59,029	19,673,300	18%	2,207	215	1,200	(26,543.61)	4%

Year	Quarter	Financial development	Agency banking	Mobile banking	Interest rate	ATMs	MFIs - DT SACCO	Bank branches	Balance of payments (Ksh in Million)	GDP growth rate
	3	0.2911	64,969	19,556,667	15%	2,246	215	1,225	(39,159.97)	5%
	4	0.3029	74,370	20,443,334	12%	2,285	215	1,272	(27,592.74)	5%
2013	1	0.2099	89,051	21,849,900	10%	2,322	215	1,274	(29,017.54)	6%
	2	0.3146	100,023	23,412,834	9%	2,354	215	1,288	(24,498.15)	8%
	3	0.3229	108,220	24,036,667	9%	2,396	215	1,313	(37,328.27)	6%
	4	0.3315	112,592	24,885,434	9%	2,415	215	1,342	(37,902.89)	4%
2014	1	0.3185	115,106	26,027,067	9%	2,468	181	1,356	(26,001.12)	5%
	2	0.3262	118,390	25,961,167	9%	2,543	181	1,384	(1,743.77)	6%
	3	0.3379	123,783	26,286,334	9%	2,490	181	1,416	(55,932.51)	5%
	4	0.3421	124,610	25,397,234	9%	2,509	181	1,443	(54,052.63)	6%
2015	1	0.3214	127,202	25,514,334	9%	2,527	181	1,444	(540,169.43)	6%
	2	0.3271	130,238	26,368,834	9%	2,569	176	1,452	(558,090.03)	6%
	3	0.3359			12%		176			6%

Year	Quarter	Financial development	Agency banking	Mobile banking	Interest rate	ATMs	MFIs - DT SACCO	Bank branches	Balance of payments (Ksh in Million)	GDP growth rate
			136,054	27,033,300		2,579		1,472	(153,009.46)	
	4	0.3427	142,315	28,081,900	12%	2,578	176	1,523	(454,348.34)	6%
2016	1	0.3298	148,893	29,760,867	12%	2,618	175	1,527	(378,075.91)	5%
	2	0.3149	157,526	31,373,334	11%	2,623	175	1,530	(321,362.02)	6%
	3	0.3192	171,526	32,842,667	11%	2,601	175	1,536	(327,861.13)	5%
	4	0.3046	169,935	34,425,000	11%	2,611	175	1,541	(353,133.44)	7%
2017	1	0.3111	155,104	33,517,667	10%	2,615	174	1,524	(458,430.32)	5%
	2	0.3029	163,287	34,223,000	10%	2,590	174	1,526	(487,135.98)	4%
	3	0.3072	168,203	35,149,334	10%	2,583	174	1,516	(516,615.27)	4%
	4	0.3262	176,616	36,592,734	10%	2,575	174	1,518	(525,858.47)	5%
2018	1	0.2813	192,050	38,533,434	10%	2,569	175	1,515	(500,205.73)	6%
	2	0.2790	200,490	41,532,700	9%	2,551	175	1,513	(485,567.70)	6%
	3	0.2795	202,071	43,481,367	9%	2,538	175	1,512	(459,439.08)	7%

Year	Quarter	Financial development	Agency banking	Mobile banking	Interest rate	ATMs	MFIs - DT SACCO	Bank branches	Balance of payments (Ksh in Million)	GDP growth rate
	4	0.2730	208,006	46,454,934	9%	2,524	175	1,505	(452,269.18)	7%
2019	1	0.277	213,515	46,898,434	9%	2,515	172	1,516	(406,200.30)	6%
	2	0.276	225,843	50,348,034	9%	2,518	172	1,519	(390,156.36)	5%
	3	0.275	223,175	54,787,500	9%	2,531	172	1,555	(386,984.84)	5%
	4	0.275	223,165	57,564,434	9%	2,462	172	1,597	(444,492.72)	6%