BRANCHLESS BANKING AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA

BY

GIFT KIMONGE DZOMBO

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other University.

Signature: Kimunge

Date: 20/04/2018

Kmonge Gift Dzombo (D86/CTY/PT/25224/2011)

Department Accounting & Finance
Kenyatta University

We confirm that the work reported in this thesis was carried out by the candidate under our supervision.

Signature: Dr. James M. Kilika

Date: 20/04/2018

Department of Business Administration
Kenyatta University

Signature: Dr. James Maingi

Date: 20/04/2018

Department of Economic Theory
Kenyatta University
DEDICATION

This work is dedicated to my late father and mother who first taught me the value of education and to my wife Berryl, my son Trevor and daughter Tracy for their support, patience and prayers during this course.
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OPERATIONAL DEFINITION OF TERMS

A banking Agent- is a retail or postal outlet contracted by a financial institution or a mobile network operator to process clients’ transactions of behalf of a licensed financial institution. Banking agents can be pharmacies, supermarkets, convenience stores, lottery outlets, post offices, and many more.

Agency banking- is the provision of banking services by a third – party agents to customers on behalf of a licensed financial institution such as a bank or any other deposit taking institution.

Bottom Line- Refers to a company's net earnings, net income or earnings per share (EPS). Bottom line also refers to any actions that may increase/decrease net earnings or a company's overall profit.

Branchless Banking- is the use of alternative delivery channels such agency banking and electronic banking (mobile banking, internet banking, ATMs and POS channels) in the distribution of financial services.

Breakeven Point- is the point at which total cost and total revenue are equal. There is no net loss or gain, and one has "broken even," though opportunity costs have been paid and capital has received the risk-adjusted, expected return

Commercial Banks- also referred as high street banks are banks that provide all services the public associates with banking, such as ATM withdrawals/deposits, cheque, current accounts, other deposit accounts, overdraft facilities, mortgage advances leasing, installment credit advances and so on. Commercial banks also enable customer payments via other payment methods such as Automated Clearing
House (ACH), Wire transfers or telegraphic transfer, EFT, POS, and automated teller machine (ATM).

**Cost-efficiency** - Cost-efficiency ratio is a measure of relationship between income and overhead costs. Cost Income Ratio is used as a proxy of cost efficiency. This is a ratio of the costs involved in running a business and the income the business produces.

**Customer Acquisition Rate** - The rate at which new customers are acquired by respective banks expressed in terms of new funded accounts opened per period.

**Customer Attrition Rate** - The rate at which existing bank customers are leaving the bank expressed in terms of number of account closures per period.

**Deposits Market Share Ratio** - is the percentage of an industry or market's total customer deposits that is held by a particular bank at a particular time. Market share is calculated by taking the bank’s deposits at a particular point in time and dividing it by the total deposits of the industry at the same time. This metric is used to give a general idea of the size of a company to its market and its competitors.

**Electronic banking** - this refers to conducting banking transactions through computerized systems including internet banking, mobile banking automated teller machines (ATMs) and Point of Sale terminals.

**Euro Bond** - is a bond that is issued in a currency other than the currency of the country where it is issued.

**Financial Inclusion** - or inclusive financing is the delivery of financial services at affordable costs to sections of disadvantaged and low-
income segments of society, in contrast to financial exclusion where those services are not available or affordable.

**Financial Intermediation** - is a process which involves surplus units depositing funds with financial institutions who then lend to deficit units. A financial intermediary is an institution that accepts deposits and makes loans directly to borrowers.

**Investment in Agency Banking** - this refers to investment expenditure by banks to set up and support agency banking model

**Investment in Electronic banking** - this refers to investment expenditure by banks to set up and support electronic banking model

**Negative Jaws** - demonstrates that a trading entity is effectively generating more expenses over time than it is generating income, thereby potentially decreasing its profitability, and profitability growth rate

**Point of Sale (POS)** - is the place where a transaction occurs in exchange for goods or services. The point of sale often refers to the physical electronic cash register or dedicated POS hardware used for checkout.

**Profit** - is the surplus remaining after total costs are deducted from total revenue, and is the basis on which income tax and dividend is paid. It’s the best known measure of success in a business.

**Return on Assets (ROA)** - is an indicator of how profitable a company is relative to its total assets. ROA gives an idea as to how efficient management is at using its assets to generate earnings. Calculated by dividing a company's annual earnings by its total assets, ROA is displayed as a percentage. Sometimes this is referred to as "return on
investment”. The formula for return on assets is: Net Income/Total Assets.

**Shareholders' Equity** - represents the net value of a company, or the amount that would be returned to shareholders if all the company's assets were liquidated and all its debts repaid.

**Synergy** - the combined effects produced by two or more parts, elements or individuals. Simply stated, synergy results when the whole is greater than the sum of the parts.

**Total Assets** - refers to the total amount of assets owned by a person or entity. Assets are items of economic value, which are expended over time to yield a benefit for the owner. If the owner is a business, these assets are usually recorded in the accounting records and appear in the balance sheet of the business.
ABBREVIATIONS & ACRONYMS

ATM: Automated Teller Machine
AML: Anti Money Laundering
CBK: Central Bank of Kenya
CGAP: Consultative Group to Assist the Poor
CIR: Cost Income Ratio
CFT: Combating the Financing of Terrorism
DV: Dependent Variable
EAC: East African Community
GII: Gross Interest Income
IMF: International Monetary Fund.
IV: Independent Variable
KBA: Kenya Bankers Association
MV: Mediating Variable
NBFI: Non-Banking Financial Institutions.
NII: Net Interest Income
NIM: Net Interest Margin
POS: Point of Sale
ROA: Return on Assets
SSA: Sub-Saharan Africa
ABSTRACT
The Banking sector acts as the life blood of modern trade and economic development. Banks do influence, facilitate and integrate the economic activities like resources mobilization, poverty elimination, production, and distribution of public finance. The financial performance of commercial banks has great implications in the financial sector and the country at large, and will still remain an important subject of concern by all the stakeholders in the banking industry. In order to improve financial performance, commercial banks both globally and locally have invested heavily in technology based modes of banking like branchless banking which involves the use of agency banking and electronic banking channels in the distribution of banking product and services. However, despite this massive investment, it is still difficult to ascertain the payoffs associated with these technology based modes of banking. The early adopters of branchless banking in Kenya had to rely on studies from South America whose geographical and social context was different from Kenya. Moreover the available literature in the Kenyan context has either considered branchless banking channels in isolation, used research designs and models that limit generalization of findings and have not considered the effect of financial inclusion and government policy in the relationship between branchless banking and financial performance of commercial banks in Kenya. This study was heavily anchored on the financial intermediation theory. The study purpose was to evaluate the effect of branchless banking on the financial performance of commercial banks in Kenya. The specific objectives of the study were to analyse the effect of agency banking and electronic banking channels on the financial performance of commercial banks. The study also aimed at determining the mediating effect of financial inclusion and also the moderating effect of government policy on the relationship between branchless banking and financial performance of commercial banks in Kenya. The study adopted an exploratory non experimental research design. A survey of all the 42 licensed commercial banks in Kenya was done. Both primary and secondary data on branchless banking and financial performance of banks was obtained from the individual commercial banks and Central Bank of Kenya Banking annual supervision reports respectively. Return on Assets (ROA) was used as the main indicator of financial performance of commercial banks and was obtained from CBK annual supervision reports. The amount of investment in agency and electronic banking was used as indicators for agency and electronic banking. Deposit Market Share, Branchless banking accounts and value of transactions were used as indicators of financial inclusion. This data was obtained from the respective commercial banks through a questionnaire. Statistical data analysis was done using SPSS and STATA statistical software. Descriptive statistics, diagnostic tests and tests of hypothesis were done. Data was presented using tables and charts. Study findings indicated that when used in isolation; both agency and electronic banking had a significant negative effect on financial performance. However when agency and electronic banking channels were used together as a multichannel strategy, they had a significant positive effect on financial performance at 5% significance level. Study findings also point to the direction that the strength of the relationship between branchless banking and financial performance in Kenya depends on financial inclusion. Findings also indicate that government policy partially moderates the relationship between agency and electronic banking and financial performance and the effect is significant at 5 percent significance level. The study recommends that for positive returns, commercial banks should invest in both agency and electronic banking as a multichannel strategy since these channels are complimentary to each other. Secondly, the government should come up with policies to foster financial inclusion within the banking industry in order for the industry to achieve maximum returns from branchless banking. Lastly, the government should review the policies around branchless banking in order to make them more effective in addressing the risks and opportunities associated with the branchless banking model of banking in Kenya.
CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

In any economy, the banking sector is the engine that drives economic growth through efficient allocation of financial resources to other productive activities. Banks play a very important role in the economy of a country and Kenya is no exception. Banks have three principal activities: taking deposits, making loans, and investing in securities. To do this they use labour (skilled and unskilled), physical capital, and financial capital (IMF, 2010). The Kenyan Banking Act (2010) defines a “Bank” as a body corporate or other body of persons, carrying on, whether on their own behalf or as agent for another, banking business within the meaning of the Banking Act whether in Kenya or elsewhere. It also defines “banking business” as; (a) the accepting from members of the public of money on deposit repayable on demand or at the expiry of a fixed period or after notice; (b) the accepting from members of the public of money on current account and payment on and acceptance of cheques; and (c) the employing of money held on deposit or on current account, or any part of the money, by lending, investment or in any other manner for the account and at the risk of the person so employing the money.

According to Faure (2013), commercial banks –also referred as high street banks are banks that provide all services the public associates with banking, such as ATM withdrawals/deposits, cheque, current accounts, other deposit accounts, overdraft facilities, mortgage advances leasing, installment credit advances and so on.
Commercial banks also enable customer payments via other payment methods such as Automated Clearing House (ACH), Wire transfers or telegraphic transfer, EFT, POS, and automated teller machine (ATM). The essential functions of commercial banks are to lend money to firms and individuals and to serve as a riskless repository for the short-term funds of firms and individuals. Generally, commercial banks have two income streams namely interest based income and non-interest income.

Academics have given a lot of attention to lending activity that generates interest income due to the link of this traditional activity to bank performance (Bush & Kick, 2009). Historically, profitability from lending activities has been cyclical and dependent on the needs and strengths of loan customers and the stage of the economic cycle. Transactional fees and financial advice charges are the non-interest based component. Fees and financial advice constitute a more stable revenue stream and banks have therefore placed more emphasis on these revenue lines to smooth their financial performance. Banks therefore derive their income from earning on their loans (Interest income) and fees charged for their services, as well as opportunistic profits from financial market dealing. Their costs are comprised of interest payments on deposits and short term loans, and costs associated with running the bank (Faure, 2013).

Bhan (2014) observed that financial services in Africa are experiencing a moment of exciting change. Many companies are taking advantage of development in technology to steer emerging African economies toward a mobile-driven, cashless (or cash lite) future by introducing new products, services, and business models. Banks globally have invested in enterprise mobile and online financial service
solutions to deliver banking services and reduce the overall cost of operations (Capgemini, 2012). According to CGAP (2008) technology can enable banks and their customers to have an interaction in a trusted way through existing local retail outlets. The key challenge for banks is to justify the high costs of branch banking on one hand and achieving branch-driven revenue growth on the other.

Rosen (2013) observed that the Kenyan financial environment has changed significantly over the last decade as a result of changes in market structure, and especially, as a result of the emerging branchless banking. One of the main contributors to this transformation is the technological progress that has been taking place in Kenya in the past 10 years allowing financial institutions to provide their customers with financial tools such as mobile banking Capgemini (2012) argues that the ever changing regulatory environment and heightened competition for retail deposits are putting pressure on banks’ profitability, forcing them to reduce their overall transactions costs. While consumers in United States of America are just being introduced to Apple Pay, mobile money services like MPesa and MTN Money have been flourishing in African markets (Bhan, 2014). More people have mobile money accounts than bank accounts in at least nine African countries, up from four in 2012. And the Africa continent as a whole leads the world in the adoption of financial services on the mobile platform (Bhan, 2014).

1.1.1 Branchless Banking

Branchless banking involves the delivery of financial services outside conventional bank branches, using retail agents or other third-party intermediaries as the principal interface with customers, and use of technologies such as card-reading point-of-sale
POS) terminals and mobile phones to transmit transaction details (CGAP, 2011). Banks are being innovative, largely due to intense competition and they are therefore at the forefront of new developments, not only in banking but also in wider financial markets (Faure, 2013). Branchless banking concept began in South America specifically in Brazil and Mexico (CGAP, 2008). In Kenya branchless banking was initially intended to improve access to financial services and products for a much larger number of Kenyan households. Due to strong competition in the banking industry, actors within the formal sector are now realizing the benefits of adopting new ways of delivering banking to the low-income and rural individuals (FSD, 2011, 2012).

FSD Kenya (2009) observed that almost half (45 percent) of the adult population in Kenya is registered for M-PESA, which is twice the number of those with a bank accounts (23 percent). Secondly, use of mobile phone financial services more than doubled from 28% in 2009 to 62% in 2013 (FSD, 2013). According to CGAP research from 2007 at least 75 percent of Brazilians use branchless banking retail agents, compared to 43 percent who operate a bank account (Siedek, 2007). Branchless banking also has great potential to extend the distribution of financial services to poor people who are not served by traditional bank branch networks. This is because it lowers the cost of delivery, including costs both to banks of building and maintaining a delivery channel and to customers of accessing services like travel or queuing times (CGAP, 2008). The major branchless banking channels currently in use in the Kenyan banking sector are agent banking, mobile banking, and electronic banking (online/internet banking, POS and use of ATMs).
According to CBK (2010) an agency bank is a company/organization that acts in some capacity on behalf of another bank, it thus, cannot accept deposits or extend loans in its own name as it acts as an agent for the parent bank. An agent is a retail outlet contracted by a financial institution or a mobile network operator to process clients’ transactions. Rather than a branch teller, it is the owner or an employee of the retail outlet who conducts the transaction and lets clients deposit, withdraw, and transfer funds, pay their bills, inquire about an account balance, or receive government benefits or a direct deposit from their employer.

Agency banking in Kenya is a relatively new concept. According to CBK (2012) agency banking model was intended to address financial inclusion which was too low (32% as per the fin Access survey of 2009). Agent Banking Guidelines were issued in April 2010 to take effect from 1st May 2010. In February 2011, the Central Bank of Kenya (CBK) released regulations to govern a new Agency Banking model. Since 2011, the numbers of agents and agent’s transactions have significantly increased. Between 2007 and 2012, Safaricom, rolled out more than 40,000 mobile payment agents nationwide (Cracknell, 2012). As at 30th September 2015, there were 17 commercial banks in Kenya that had contracted 39,871 agents which had facilitated over 193.4 million cumulative transactions valued at over Ksh. 1.0 trillion (CBK, 2015). According to FSD (2013) agent banking was cited as a very popular channel despite of it being relatively new. The Fin Access 2013 survey results reveal that the proportion of the adult population totally excluded from financial services has reduced to 25.4% in 2013 from 31.4% in 2009 (FSD, 2009).
Electronic banking refers to the use of electronic and telecommunication networks and devices to deliver a wide range of value added bank products and services to bank customers (Steven, 2002). Banking industry in Kenya cannot do without information systems because they play a critical role in current banking system (Aduda & Kingoo, 2012). Mobile money has emerged as a competitive tool in the Kenyan banking industry (Okiro & Ndungu, 2013). Mobile banking in Kenya has significantly grown with the total transaction averaging approximately 15 percent of the total GDP as at the end of 2013 (CBK, 2013). According to the Safaricom’s half year results for 2013-2014, M-PESA was reported to have 18.2 million active customers (Nyaga, 2014).

Since this innovation, most Kenyan banks have now interlinked customers deposit accounts in the various banks with mobile money transfer. This e-banking has made banking more convenient and cost-effective to both customers and banks (Mbugua, et.al, 2013). The mobile network providers took advantage of the fact that there was an access gap in terms of safe and affordable services that allow one to send, withdraw and deposit money through the mobile phone. The fact that most Kenyans owned a basic mobile phone created an opportunity to use mobile-based financial services that only required having a phone with short messaging service function (Jack et.al, 2011).

Bank customers responded positively to local access to financial services, with more than 41 million mobile payment transactions per month, and more than 20% of Equity Banks transactions occurring through its agency banking network (Cracknell, 2012). According to Mbugua et.al (2013) the monthly value of person-to-person
transfers by December 2009 was over KSh 26 billion (approximately U.S. $330 million). Recent survey data shows that 52 percent of Kenyan adults transacted through mobile banking in a 30 day reference period. Other East African countries, Tanzania and Uganda seem to be closing the gap with 24 percent and 15 percent of adults conducting a mobile money transaction (Kendall & Maurer 2012).

Pikkarainen, et.al (2004) defines online or internet as banking as an internet portal, through which customers can use different kinds of banking services ranging from bill payment to making investments. With internet banking, individuals can check their account balances and make payments without having to go to the bank hall. This is gradually creating a cashless society where consumers no longer have to pay for their purchases of goods and services with hard cash. Bank customers can pay for airline tickets and subscribe to initial public offerings by transferring the money directly from their accounts and pay for various goods and services by electronic transfers of credit to the sellers account (Aduda, et.al 2013). The users can conduct financial transactions anywhere - as long as they have a computer and a modem (Corocher, 2012). With the implementation of an internet banking system, the banks maintain a direct relationship with the end users via the web and are able to provide a personal characterisation to the interface, by offering additional customised services (Cronin, 1998).

According to Malhotra (2009) internet /online banking has emerged as a strategic resource for the banks. Banks have used internet banking as a tool for achieving higher efficiency, control of operations and reduction of operation costs by replacing paper based and labour intensive methods with automated processes thus leading to
higher productivity and financial performance. Muraleedharan (2009) further observed that most current e-banking applications use the internet. The advantages of internet banking include providing convenience and flexibility to customers, allowing customers to get up to date account balances at any time. Other advantages include immediate account enquires/online statements of their transactions. This convenience to customers will obviously increase their patronage and loyalty to the bank and hence lead to increased income both through interest and transaction fees.

According to Muraleedharan (2009) banks must fully understand and appreciate the fact that the banking industry is now interconnected and exists in a global village. They must therefore strive to provide local and global banking services using the infrastructure of the global village. Malhotra (2009) further observed that the widespread availability of internet banking is expected to affect the combination of financial services produced by banks, the manner in which banks produce and distribute these services and the resulting financial performances of these banks. Whether or not this farthest view proves correct and whether banks take advantage of this new technology will depend on their appraisal of the financial performance of such a delivery system for their services.

In its simplest form, Automated Teller Machines (ATMs) and deposit machines now allow consumers carry out banking business outside banking hours (Aduda, et.al 2013). Barclays and Standard Chartered Bank deployed the first ATMs in the early 1990s. Since then most banks have followed suit (FSD Kenya, 2007). ATM banking is one of the most popular alternative banking channels in Kenya according to a study conducted by Nyangosi and Arora (2008). Findings from this study indicate
that 92% of Kenyan customers prefer to transact through ATM banking. The study revealed that ATM technology is the most available technology in user’s banks. Branches and call centers have the highest average per-transaction cost ($4.0 and $3.8 respectively), with ATMs having an average per transaction cost of $0.9 (Capgemini, 2012).

According to FSD Kenya (2007), Point of Sale terminals (POS) are currently one of the lowest-cost channels that can be deployed by banks. International benchmarks indicate the cost to a bank of POS to be as low as Ksh 5 per transaction and the capital cost of the POS machine can be as low as $ 250 (FSD Kenya, 2007). The relatively low cost of running POSs make them best channels in low-transaction environments that can be effectively be used to complement the other branchless banking channels. Kumar (2011) observed that in today’s busy world, customers prefer to use plastic money (Debit, Credit and Prepaid Card) for shopping. It gives convenience, safety, easiness and style with minimum time consumption.

POS emerged as a tool of low cost deposit and used to capture the merchant business, commonly known as Merchant Acquiring Business. The POS is the innovative tool totally based on technology and offer cashless transaction at merchant location. Kumar (2011) further explains that POS machines are of different types; Physical, GPRS, PC-based, IVRS etc which can be designed as per merchant convenience considering all security measures. To enhance security banks are now providing biometric card and pay by touch machines to avoid fraudulent transactions.
1.1.2 Financial Inclusion

This refers to the use of formal financial services such as credit, savings, insurance and remittances (CGAP, 2008). According to Siedek (2008), there exists empirical evidence indicating that branchless banking leads to greater access to financial services especially by the rural and unbanked population. Poor clients may be more at ease banking at their local merchant, in part because rural clients—10 percent according to CGAP’s customer research in Brazil are uneducated and need assistance in conducting and understanding their financial transactions. Many of these customers have long-standing relationships with local merchants. In contrast, banks in many Latin American countries have a reputation of being costly, and branches and their staff are often seen as unapproachable and unfriendly.

According to CGAP (2008), only about one-quarter of households in developing countries have any form of financial savings with formal banking institutions. Research indicates that only 10 percent in Kenya, 20 percent in Macedonia, 25 percent in Mexico, 32 percent in Bangladesh have some form of financial savings with formal banking institutions. But in the same way that access to clean water is more than being able to buy a bottle of water, access to finance is more than being able to get the occasional loan. Ignacio (2008) in the paper titled ‘The Early Experience with Branchless Banking” also observed that branchless banking has great potential to extend the delivery of financial services to poor people who are not served by traditional bank branch networks.

Capgemini (2012) argues that as branch networks typically comprise around 75% of a banks’ total distribution costs, the key challenge banks face today is to give
justification for the high branch-operating costs at a time of lower branch-driven income growth. Financial intermediation under traditional banking is limited to the population that could afford the expensive banking services. Birken (2012) argues that traditional banking practices emphasize the fact that those practices are skewed to profit the banks, rather than the client. According to FinAccess 2006 and FinAccess 2009 household surveys, conducted by the Financial Sector Development Trust Kenya jointly with the Central Bank of Kenya, a large percentage of the Kenyan population has no access to financial products and services. The survey observed that there is a general tendency for access to services from formal and semi-formal providers (banks, SACCOS, and MFIs) to decrease as one goes from urban to rural, from high-income to low-income, and from better-educated to not educated. Although the percentage of the population that is served is similar in urban and rural districts, the mix of those services is different (FSD, 2009).

Based on early experiences, branchless banking has made a significant contribution towards financial inclusion in developing countries. Most financial service providers collaborate and use partnerships with businesses that have a substantial local retail presence as a key competitive strategy (CGAP, 2008). One of the main obstacles to financial inclusion is the cost involved in servicing low-value accounts and extending physical infrastructure to remote rural areas, and the cost -in money and time- incurred by customers in far-away areas to reach bank branches (KBA, 2012). Ignacio (2009) observed that agency banking allows the rollout of a much more widespread distribution network without incurring the large fixed setup and operational costs of conventional branch networks. Finacle Infosys (2012) observed that agency banking rationalised banks’ operational spending and reduced cost to
clients, while enabling wider reach. Capgemini (2012) also argues that the mobile channel addresses customer requirements for convenient and numerous transactions, while reducing the overall channel operating costs.

Access to finance really involves being linked to a nationwide payments system, much like the national electricity network (CGAP, 2008). For majority of Kenya’s population, especially those living in rural areas, access to banking products and services has been almost absent. With the introduction of Mobile banking and Branchless banking services in Kenya’s financial industry, inexpensive and convenient banking services continue to be provided to the large unbanked masses (Vutsengwa, et.al 2013). According to a study conducted by Fin Access in 2009, financial exclusion – that is people without access to any form of financial product and services – has declined from 38.4 percent of the population in 2006 to 32.7 percent of the population in 2009. It is believed that mobile banking has made a contribution to this achievement.

1.1.3 Government Policy

In Kenya, the Central Bank (CBK) is responsible for regulation and supervision of banks. Over the past decades, there have been many revisions to the Banking Act, Central Bank of Kenya Act and prudential guidelines aimed at reinforcing CBK’s supervisory role. The Banking Act has been reviewed and revised over time to give more legal powers to the regulatory authority and to expand the responsibilities and coverage of regulating institutions. The first comprehensive review was made in 1985 following the rapid growth of NBFI s that was attributed to among other factors weakness in the regulatory framework. In addition, there was a change in the
licensing procedures for banks that introduced a clearer scope and mandate for the Central Bank in the licensing process (Beck et.al, 2009)

Beck et.al, (2009) observed that further amendments of the Banking Act were made in 1995 1998 and 2000 aimed at further strengthening supervision of the banking industry. Prudential guidelines were revised to push for industry’s self-regulation and covered codes of conduct for directors, chief executives and other employees; duties and responsibilities of directors, chief executives and management; duties and responsibilities of external auditors; and the classification of bad and doubtful advances and loans. In 1998 the Central Bank increased capital requirements to avoid a repeat of the banking crises experienced in the mid-1980s and early 1990s. The gearing ratio was also raised to 7.5% from 5%. In 2000, the Central Bank adopted the Basel I standards on capital adequacy. This development led to the introduction of additional capital adequacy ratios of 8% and 12% for core capital and total capital to risk weighted assets respectively.

There is also increasing pressure from the government and the customers for the banks to lower the interest rates charged on loans. Banks are also required to declare to customers the total cost of credit. According to KBA (2014) the total cost of credit disclosure empowers the borrowers to comprehensively compare different loan products from different financial services providers on a like-for-like basis, based on the total cost of the facility; and therefore make better informed borrowing decisions. Increased regulation in line with Basel II requirements has also had a significant impact on bank lending activities. Waithaka (2013) observed that the risk weighted assets decreased from 26% between 2008 and 2009 to 15% between
2011 and 2012 indicating stressed growth on Kenyan banks assets on implementation of Basel II requirements.

Since 2007, several policy frameworks have been established to regulate and control branchless banking. In November 2009, Kenya amended the Banking Act to include provisions on financial institutions’ use of retail agents to provide banking services (CGAP, 2011). The fast growth in mobile money has added urgency to the requirement for an effective and strong legal and regulatory framework in the EAC. Since mobile money is a relatively new model globally regulators in East Africa couldn’t rely on the rest of the world for guidance (Nyaga, 2014). Before the 2009 amendment, the Banking Act did not specifically address the issue of banks using retail agents to offer banking services, nor were there any regulations clearly governing the outsourcing of banking services by banks. Instead, CBK approved such arrangements on a case-by-case basis. The regulations prescribed how the banks would engage with retail banking agents and specifically how issues to do with security and AML/CTF will be handled, the scope of products and services to be handled under this channel and issues to do with customer data integrity (CGAP, 2011). Similar regulations have also been established for electronic banking.

Nyaga (2014) further observed that mobile money transactions have also presented regulatory challenges that could hinder their potential benefits. This is because, firstly, mobile money blurs the conventionally distinct and independent sectors of regulation – most notably, the telecommunications and financial sectors. It often involves an overlap of the roles of multiple ministries and government agencies, thus adding to the complexity in the nature of oversight required. According to
Cracknell (2012) there are seven different regulatory bodies covering the financial sector in Kenya. The Central Bank of Kenya, the SACCO Societies Regulatory Authority (SASRA), the Capital Markets Authority (CMA), the Retirement Benefits Authority, the Insurance Regulatory Authority, the Communications Commission of Kenya and the Competition Authority. The associated government Ministries, the Ministry of Finance, and the Ministry of Cooperatives are also important.

Cracknell (2012) further observed that regulatory bodies regularly meet collectively, but more interaction occurs between regulators when there is an emerging need. For example there were multiple levels of interaction between the Ministry of Finance, the Communications Commission of Kenya and the Central Bank of Kenya in the development of supervision of mobile payments. CGAP (2011) observed that some regulators may perceive that financial services delivery through branchless channels and nonbank providers is higher risk than conventional banking. The temptation is always there to insist on the central nature of banks in the distribution of banking products and services. As such branchless banking regulation was aimed at mainly protecting customer’s funds held as electronically stored value, ensuring safety and reliability of services, reducing risks for agent deception and other harmful conduct, ensuring clear and effective disclosure, protecting clients’ personal data and ensuring clients have information and knowledge on how to access solutions to their complain. Similar view is shared by Ehrbeck & Tarazi (2011) who observed that banking regulators in most countries are as expected not comfortable with non-banks offering conventional banking services.
1.1.4 Financial Performance of Commercial Banks in Kenya

Globally the banking practices in SSA are the most cost-inefficient notwithstanding the concentration of branches in a small number of urban centres. Banking systems in most of Sub-Saharan Africa remain underdeveloped as compared with other developing regions. As a consequence, interest rate spreads and service fee levels are comparatively high (European Investment Bank, 2013). Munyambonera (2013) observed that despite financial sector reforms in Africa since the 1990s with an aim of improving profitability, efficiency and productivity, commercial banks’ performance has remained poor with substantial gaps in service delivery to private agents as indicated by low private sector credit. There is sufficient empirical evidence showing that commercial banks performance has not been optimal and this is reflected by low bank performance indicators including: high levels of credit risk to private agents, poor quality loans, limited and or inadequate capitalization, operational inefficiencies, higher incidences of non-performing loans, higher levels of liquidity risk; among others. The increasing interest in Kenyan banking sector by regional and global banking brands is likely enhance competition especially through product diversification (CBK, 2012)

Some studies have shown that commercial banks in Sub-Saharan Africa (SSA) are more profitable than the rest of the world with an average Return on Assets (ROA) of 2 percent over the last 10 years significantly higher than bank returns in other parts of the world (Flamini et.al, 2009). One of the major reasons behind high return in the region was investment in risky ventures. The other possible reason for the high profitability in commercial banking business in SSA is the existence of huge gap between the demand for bank service and the supply thereof. This is especially
true in East Africa where the few government owned banks take the lion's share of the market. Munyambonera (2013) also observed extensive information gap on commercial banking in SSA.

For decades after independence from Britain in 1963, Kenyan banking industry was dominated by local units of international banks such as Barclays or Standard Chartered. Even though foreign-owned banks dominate the sector, these have been challenged in recent years by home-grown institutions targeting the lower end of the market (BTI, 2012). According to European Investment Bank (2013), Kenya has the most developed banking and financial system in the East Africa region. Its banking sector is the fourth largest in sub-Saharan Africa, behind South Africa, Nigeria and Mauritius. There are 44 commercial banks, of which 13 are foreign, and have set up 1,161 branches across the country. Kenya is the only country in the East Africa region with significant investment of banking activities abroad, mainly in the neighbouring countries.

The banking industry is the largest sector in the Kenyan financial sector. With a limited and less developed capital market, the banking industry plays pivotal role in financial intermediation (Kamau, 2011). Unlike most other countries in the region, Kenya has a variety of financial institutions and markets including banks, insurance companies, stock and bond markets which provide an array of financial products (World Bank, 2010). By African standards and in comparison with other East African economies, Kenya’s banking sector has for many years been credited for its relatively huge size and diversification. Foreign based banks also account for roughly 40% of the commercial banking sector’s core capital (BTI, 2012).
According to CBK (2015), the overall commercial banks performance remains uneven among banks despite strong growth in profitability, assets base, return on assets and return on equity. There is a significant difference gap between the top five banks and the bottom five banks across the key performance indicators. In 2014, the bottom five banks had negative return on assets and return on equity compared to the top five banks, whose ratios were strong and positive. The industry’s profit before tax declined by 1.6 per cent to KSh. 69.9 billion in December 2014 from KSh. 71.0 billion in June 2014. Three banks had cumulative losses of KSh. 1.01 billion as at December 2014 compared to KSh. 0.57 billion reported in June 2014 (CBK, 2015). There is also increasing pressure from the government and the customers for the banks to lower the effective interest rates charged on loan products. Banks are also required to declare to customers the total cost of credit. According to KBA (2014) the total cost of credit disclosure empowers the borrowers to comprehensively compare different loan products from different lenders on a like-for-like basis, based on the total cost of the facility; and therefore make better informed borrowing decisions.

In the last few years there has been tremendous growth in both the number and value of branchless banking transactions. According to CBK (2014) the banking agents had undertaken over 106.1 million transactions valued at Ksh 571.5 billion as at June 30, 2014. A survey by FSD - Kenya indicates that agency banking had significantly increased access to banking services with 52 percent of country's population being within three kilometers of a banking agent in 2013 as compared to only 22 percent in 2009. Similar trend is being experienced in mobile money strategy around the globe (FSD, 2014). Brigham and Gapenski (1997) consider that
“financial performance is the net result of various policies and managerial decisions, and the financial performance rates represent the net operating result of the combined effects of liquidity, asset management and debt management”. According to Ongore and Kusa (2012) the determinants of banks profitability can be classified as internal and external factors. Internal determinants are bank specific while external determinants are macroeconomic.

According to CGAP (2008) the strategic benefits of branchless banking are four fold. Firstly one of the strategic benefits of branchless banking is decongesting branches. Others are creating a new customer segment, expansion of geographical coverage and increasing cost efficiency. All the four benefits above have the overall effect of improving the financial performance of commercial banks. According to Capgemini (2012) branchless banking concept gives banks an opportunity to identify channels that are most important to their customers, and provide a positive experience across them.

Banks are shifting their customers from high-cost to lower-cost channels, thus reducing their total cost-to-serve. A low value high volume strategy has strategic benefits of economies of scale and is a sure way of generating sustainable income from low income urban population. This is the approach Lemon Bank has followed in Northeast Brazil: it has 5,700 agents and not even a single branch (CGAP, 2008). Capgemini (2012) further argue that this will help banks leverage their distribution networks by offering the right products and services to the right customer segment through a desired channel, resulting in overall cost savings and an enhanced customer experience. Findings by a study done by CBK in 2012, revealed that banking sector salaries and wages as a ratio of income decreased from 20.5% in
2011 to 16.7% in 2012 reflecting improved efficiency as banks adopt ICT to offer increased banking services without an equivalent increase in staff costs. This proves the fact that branchless banking models have an effect of reducing cost income ratio and hence improving the commercial banks bottom line.

1.2 Statement of the Problem

Banks globally have heavily invested in enterprise mobile financial service products and services to deliver more technology based banking products and services and reduce the overall cost of operations (Capgemini, 2012). This heavy investment in technology based modes of conducting business has been done in order to drive revenue through the technology based distribution systems and also to adapt to the changing customer tastes and preferences (Frei et.al 1998). Using the case of the banking industry in the U.S, it has been observed that large banks spend approximately 20% of their non-interest expense to invest in information technology. It is predicted that this trend is likely to continue with banks shifting from traditional to modern banking facilitated by technology. In Kenya, research data indicates that the average investment in branchless banking at bank level in each year for the period 2010 to 2014 has been in excess of Kes 70 million (Author 2016). However, Accenture (2013) observed that despite the massive investment in technology, it is still difficult to ascertain the returns associated with these technology based modes of banking.

In Kenya, research data indicates that there has been a progressive decline in the average Return on Assets (ROA) for the industry from 3.7 in 2010 to 2.96 in 2014 (CBK, 2015). It is against this backdrop that the Kenyan banking industry has taken
advantage of the opportunities availed by branchless banking to improve financial performance. However, according to CGAP (2008) branchless banking concept began in South America specifically in Brazil and Mexico and was relatively a new concept in Kenya in the current decade. To inform their investment decisions on branchless banking, banking institutions in Kenya had to initially rely on studies from countries in South America whose geographical, social and economic context was different from Kenya. This was due to lack of documented local experiences which the banks could rely on to inform their investment decisions.

Previous studies in the banking sector seeking to explain financial performance have several weaknesses. Firstly, empirical studies reviewed have considered the various branchless banking strategies in isolation. This is inspite of the complementary nature of the various forms of branchless banking coupled with the banks’ attempts to achieve a seamless multi-channel integration in order to maximise on the benefits of branchless banking. Some of these studies include Okiro and Ndungu (2013), Ritho and Jagongo (2015), Aduda and Kingoo (2012), Rosen (2013), Mwangi (2012) and Musau and Jagongo (2015). Secondly, the related studies reviewed have not considered government policy and its effect on the financial performance of commercial banks and also the aspect of financial inclusion which is a major goal of government policy in supporting the move towards branchless banking.

Thirdly most of the related empirical studies reviewed have used research designs and models that limit the extent of generalization of the findings within the Kenyan context. These include Okiro and Ndungu (2013), Gakure et.al 2013), Mugo, et.al (2012), Musau and Jagongo (2015) and Mwangi (2012). The above studies utilized
descriptive research design only hence did not relate the components of branchless banking with financial performance. Therefore, the relationship or influence of branchless banking on financial performance has not been assessed in Kenya through inferential analysis. Therefore, there is need for more research in this sector to inform financial management decisions on branchless banking using both primary and secondary data while integrating financial inclusion and government policy to explain the effect of branchless banking on financial performance of commercial banks in Kenya.

The current study has addressed the above weaknesses by utilizing both agency and electronic banking channels as a multichannel strategy in line with the banks’ attempts to achieve a seamless multi-channel integration in order to maximise on the benefits of branchless banking. The study has also considered the mediating effect of financial inclusion and moderating effect of government policy on the financial performance of commercial banks. The study surveyed all the Kenyan commercial banks, utilized both primary and secondary data sources and used both descriptive and inferential analysis to form conclusions and generalizations. Therefore the purpose of this study was to evaluate the effect of branchless banking on the financial performance of commercial banks in Kenya.

1.3 Objectives of the Study

1.3.1 General Objective

The study aimed at evaluating the effect of branchless banking on the financial performance of commercial banks in Kenya.
1.3.2 Specific Objectives

i. To analyze the effect of agency banking on the financial performance of commercial banks in Kenya

ii. To analyze the effect of electronic banking on the financial performance of commercial banks in Kenya

iii. To determine the mediating effect of financial inclusion on the relationship between branchless banking and financial performance of commercial banks in Kenya.

iv. To determine the moderating effect of government policy on the relationship between branchless banking and financial performance of commercial banks in Kenya

1.4 Research Hypotheses

In order to achieve the specific objectives of the study, the following null hypotheses were postulated;

Ho1: Agency banking has no significant effect on the financial performance of the Kenyan commercial banks.

Ho2: Electronic banking has no significant effect on the financial performance of commercial banks in Kenya.

Ho3: Financial inclusion does not have a mediating effect on the relationship between branchless banking and financial performance of commercial banks in Kenya.
Ho4: Government policy does not have a moderating effect on the relationship between branchless banking and financial performance of commercial banks in Kenya.

1.5 Significance of the Study

This study is beneficial to scholars/academicians in financial management, policy makers in the national and county governments, the shareholders and senior executives of commercial banks and the customers. To the scholars/academicians the study will go a long way in adding to the body of knowledge in the area of financial performance of commercial banks. Empirical evidence clearly shows that empirical studies focusing on Kenyan financial sector are still scanty. Most of the evidence regarding financial performance of commercial banks in Kenya largely focused on the developed economies and the conclusions of may not be useful for Kenyan financial sector planning. Moreover there exists very scanty literature specifically on modern banking practices and more specifically branchless banking. This study will go a long way in enriching the available literature on the subject.

Management is mainly concerned with the effective funds management in the business. For Bank managers to maximize profits and shareholder value creation, they must come up with innovative and efficient management practices. Empirical evidence clearly shows that studies focusing on Kenyan financial sector are still scanty and limited. Most of the evidence in regard to commercial banks’ performance largely focus on the developed economies and the conclusions of may not be useful for Kenyan financial sector planning.
This study is also important to the government as it will help in influencing financial sector regulations around financial inclusion and cost-effectiveness and it will go a long way in shaping policy around distribution of financial services. Moreover branchless banking models can be some of the tools that the various county governments can use to promote a saving culture among rural, marginalized and unbanked population in order to spur regional development and also foster financial inclusion in the counties and integrate the rural and unbanked populations into the financial system. It can be very effective tool for resource mobilization at county level.

The banking industry in Kenya has become very competitive and banks are increasingly finding new and efficient ways of doing business in order to increase shareholder wealth creation. The competition within the industry has become so stiff with limited customer base against many banks offering almost similar product propositions. The branchless banking model can be embedded in the market penetration and cost management strategies leading to more efficiency especially by the smaller banks. To the customers especially those who use the banking facilities for small transactions, branchless banking is one of the most economical channels. It is also convenient for the customers who live in rural areas and remote locations where conventional banking facilities are not well developed.

1.6 Scope of the Study

The study covered all the commercial banks in Kenya (Appendix iii). The period under study was from year 2010 to 2014. This is because this is the period when there has been a lot of activity in terms of adoption of branchless banking channels.
For example agent Banking Guidelines were issued in April 2010 to take effect from 1st May 2010 (CBK, 2012). The period also saw emergence of Mobile banking and online banking. To achieve research objectives, the researcher specifically evaluated the effect of agency banking, mobile banking, online banking, use of ATMs and POS terminals as these are the channels that were mostly in use in the Kenyan financial sector at that point in time.

1.7 Organization of the Study

This thesis is structured as follows; chapter one provides the research background including the main concepts and variables, the context of the study, the statement of the problem, the research objectives, significance of the study and scope and limitations of the study. Chapter two presents theoretical literature of the key theories and concepts, the empirical literature review on financial performance of commercial banks in general and the effect of branchless banking on the financial performance of commercial banks in Kenya and the conceptual framework of the study. Chapter three dealt with the methodology employed in order to achieve the research objectives. Chapter four presents the actual data analysis and interpretation and discussion of the study findings. Finally chapter five presents the summary of the research findings, conclusions and recommendations. References and appendices are contained in the last part of this thesis.
CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviewed the theoretical as well as empirical literature on branchless banking and financial performance, and a detailed empirical review of the literature regarding the main concepts used in this study. Specifically, the section examined the theories and concept of branchless banking and financial performance and the historical development of branchless banking globally, the development and current status of branchless banking in Kenya and the relevant studies in that have been done in financial performance of commercial bank in general and branchless banking in particular. The conceptual framework and summary of the gaps to be filled by the study forms the last part of this chapter.

2.2 Theoretical Literature

This section reviewed the relevant theories related to branchless banking and commercial bank’s financial performance. These include the theory of financial intermediation, contemporary banking theory, the theory of the firm, diffusion of innovation theory and the branchless banking theories.

2.2.1 The Theory of Financial Intermediation

This theory was postulated by Douglas (1984). According to the theory, commercial banks and other financial intermediaries are the main sources of external funds to firms. Faure (2013) argues that financial intermediaries exist not only because of the
divergence of requirements of lenders and borrowers, but for specialised services they provided such as insurance services (insurance companies), retirement fund products (retirement funds, investment products (unit trusts) and overdraft and deposit facilities (banks) and so on. Financial intermediaries provided more than 50 percent of external funds in the period between 1970 and 1985 in the United States (Faure, 2013).

Financial intermediation theory also argues that information asymmetry arises in the financial system and markets between borrowers and lenders because borrowers generally know more about their investment projects than lenders do (Claus & Grimes, 2003). According to the theory, financial intermediaries act as middlemen hence leading to net cost savings. The model provides strong predictions about the contracts used by financial intermediaries and thus provides a setting to analyze important issues in banking policy. According to Brigham and Gapenski (1993) financial intermediaries do not only transfer money and securities between firms and savers- they also create new financial products. Brigham and Gapenski (1997) further argue that since the financial intermediaries are generally huge, they create economies of scale in analyzing the credit worthiness of potential borrowers, in processing and collection of loan facilities and in pooling of risk and thus helping individual savers diversify.

In recent years, fundamental economic forces have affected the traditional role of banks in financial intermediation between borrowers and lenders. Edwards, et.al (1995) observed that as a source of funds for financial intermediaries, deposits have steadily declined in importance. In addition, the financial performance driven by
traditional banking activities such as business lending has declined in recent years. As a result, banks have increasingly changed their business models to new non-traditional financial activities in order to maintain their position as financial intermediaries. Brigham and Gapenski (1997) further observed that financial intermediaries have historically been heavily regulated. The primary purpose of this regulation is to ensure the safety of the institutions and thus to protect depositors.

As argued by Ongore and Kusa (2012), for sustainable financial intermediation, banks need to be profitable. The Kenyan financial industry is one of the key contributors to GDP. According to Kenya National Bureau of Statistics (2015) financial intermediation and insurance activities contributed 7% of the total GDP in 2014. The role of banks remains central in financing economic activity in general and different market segments in particular. A sound and profitable banking sector is better able to comfortably withstand negative shocks and contribute to the stability of the financial system (Panayiotis et.al, 2008). Branchless banking solutions are therefore being adopted by Kenyan commercial banks in order to improve financial inclusion and financial performance.

This study is heavily anchored on the financial intermediation theory. The theory has been used to inform the independent variables agency and electronic banking, dependent variable financial performance of commercial banks in Kenya and also the mediating variable financial inclusion and moderating variable government policy. Branchless banking has provided an avenue for banks to change their business models to new non-traditional financial activities in order to maintain their position as financial intermediaries. The theory also explains the importance of
financial intermediation to financial inclusion and financial performance and also the importance of regulation to sustainable growth of financial institutions and safety of depositor’s funds.

2.2.2 Contemporary Banking Theory

This theory was postulated by Bhattacharya and Thakor (1993). The theory was an extension of the financial intermediation theory discussed in section 2.2.1. Contemporary banking theory suggests that commercial banks and other financial intermediaries are necessary in order to efficiently allocate capital resources in the economy. The theory suggests that financial intermediaries benefit the economy as they help to reduce the transaction costs for services ranging from brokerage to attribute transformation. Bhattacharya and Thakor (1993) further observed that given significant information asymmetries between borrowers and lenders, bank lending is special in that it signals quality in a way that other forms of credit do not. This theory is centered on the concept of information asymmetry, which is an assumption that “different economic agents possess different pieces of information on relevant economic variables, in that agents will use this information for their own profit” (Freixas and Rochet 1988).

Asymmetric information normally leads to the problem of adverse selection and moral hazard. Asymmetric information normally occurs way before the transaction occurs and refers to the lack of information on the part of the prospective borrowers about the characteristics of the loans and the lenders. This is referred as adverse selection. Moral hazard takes place way after the transaction had occurred and is related with incentives by the lenders to behave in an opportunistic way. This theory
contributes immensely to the independent variable branchless banking and the dependent variable financial performance of commercial banks. Branchless banking has enabled clients to have easy access to information on the banking products and services without going through the traditional bank branches which was the primary point of contact between the bank and the bank clients in the past. Easy access to information on bank products through agency and electronic banking channels has helped in improving financial inclusion and consequently financial performance.

2.2.3 The Theory of the Firm

Initial work on the theory of the firm was begun by Ronald Coase (1937). The theory of the firm states that the objective of the firm is to maximize profits. In order to do this the firm must decide what quantities of a good to produce given costs, technology and demand. A competitive market a firm is a price taker. In this case the market price is equivalent to Marginal revenue (MR), Average revenue (AR) and demand. Given the fact that the firm incurs some costs in production, then, to maximize profit, the firm will produce at the point whereby MR = MC whereby Marginal cost is the cost of producing one extra unit of the product.

The objective of the management of any bank is profit maximization. The Total costs of the banks will include fixed costs and variable costs and in the traditional branch banking the fixed cost component is quite significant. Some of these fixed costs incurred have to be capitalised for many periods. Normally fixed costs would be incurred whether the bank makes sales or not and deny the banks the flexibility in controlling costs. According to Accenture (2008) taking a balanced approach to cost reduction requires banks to develop an operating model that is not only cost
efficient, but can respond quickly to unforeseen market changes such as further decline or an increasing trend. As a result, banks will have no choice but to industrialize their operations to combine low costs with high flexibility. Banks are therefore moving towards a business model where costs are relatively variable and costs are incurred only where there is business. This gives banks some flexibility in influencing their costs and target revenues and consequently their financial performance and branchless banking is being considered as one of the strategies to help banks achieve this.

The banking industry in Kenya is oligopolistic in nature given that the industry is highly concentrated with the tier 1 banks commanding a bigger market share. Each firm has enough market power to prevent its being a market price-taker, but each firm is subject to enough inter-firm rivalry to prevent it considering the market demand curve as its own (Lipsey, 1993). Moreover, there is a lot of inter-bank rivalry and competition for the limited market share with the banks operating on similar market niches.

Unlike other market organizations oligopolists require strategic thinking. Under oligopoly, a seller is big enough to affect the market. Each lender must respond to your rivals’ choices, but your rivals are responding to your choices and strategies. This would lead to more product innovation in order to have a competitive edge as the current scenario in the Kenyan banking industry. Branchless banking is one such innovation. Lipsey (1993) argues that oligopoly may be very effective in producing very long term adaptations that develop both new products and cost-reducing methods.
The theory of the firm contributes to both the independent and dependent variables of the study. The theory explains why branchless banking has been adopted by banks to maximize profitability by enhancing flexibility in costs management strategies. Accenture (2008) argues that banks must continue to reduce costs and increase revenues in highly uncertain economic times. The actions they take now to optimize their cost base and enhance their flexibility to respond quickly and effectively to market changes will shape their ability to achieve high financial performance in the future. To maintain competitiveness over the long term, banks need to move progressively from a substantially fixed-cost base to a more variable-cost base. Branchless banking has been adopted by banks to maximize profits by maximizing the vertical distance between TR and TC. This has been achieved by reducing the fixed costs element which forms a significant portion of the Total Cost.

2.2.4 Diffusion of Innovation Theory

Diffusion of innovations theory was postulated by Everett Rogers in 2003. The theory seeks to explain how, why, and at what rate new ideas and technology spreads. According to Rodgers (2003) diffusion is the process by which an innovation is communicated over time among the participants in a social system. Rogers (2003) further argues that diffusion determines the adoption of new technologies. He suggested five attributes in the Theory of Innovation. The first attribute, Relative advantage, indicates the extent of technological innovation over previous innovations. These benefits can be seen from the viewpoint of technical, economic, prestige, comfort and satisfaction. If people feel that a technological innovation provides high relative advantage, then they will accept the technology.
The second attribute, compatibility is the suitability of a technological innovation with the adopter value, adopter experience, and adopter needs. According to Rogers (2003) the third attribute, complexity refers to the level of complexity of understanding and use of a technological innovation. The more complex and sophisticated the technology innovation, the more difficult it is to be adopted. Rodgers (2003) further explains that the fourth attribute, trialability is the degree to which a technological innovation can be tried and tested. The last attribute is observability. This attribute is related to the extent to which the results of adoption of technological innovations can be observed and communicated.

Diffusion of innovation theory further argues that adoption of a new idea, behavior, product or innovation does not happen simultaneously in a social system; rather it is a process whereby some people take on the innovation earlier than others. There are five established adopter categories. These include innovators, early adopters, early majority, late adopters, and laggards. Studies have found that the early adopters of technology have different characteristics than the late adopters. This theory has been used to explain how branchless banking model has been adopted within the Kenyan banking industry. A review of literature indicates that the adoption of branchless banking model was not uniform in the banking industry. At a global level branchless banking concept began in South America specifically in Brazil and Mexico (CGAP, 2008) and the Banks in South America may be considered as the innovators as far as branchless banking model is concerned. In the last few years branchless banking was adopted at different times in the Kenyan banking industry. Currently African continent as a whole leads the world in the adoption of financial services on the mobile platform (Bhan, 2014).
2.2.5 Bank-led Theory

Bank-led Theory was developed by Cameron in 1972. In the bank-led theory of branchless banking, a licensed financial institution distributes financial services and products through a retail agent. According to CGAP (2006), the bank develops financial products and services and distributes them through retail agents who handle all or most of the customer interaction. The principal bank is the eventual provider of financial services and it is the institution in which customer’s accounts are maintained. Retail agents have face-to-face interaction with customers and perform cash in/cash-out functions, the same way a branch-based teller would take deposits and process cash withdrawals (Owens, 2006). In some countries retail agents also handle all account opening procedures and even identify and service loan customers. Virtually any outlet that handles cash and is located in close proximity to customers could potentially serve as a retail agent. Whatever the establishment, each retail agent is equipped to communicate electronically with the bank for which it is working for. The equipment may be a mobile phone or an electronic point-of-sale (POS) terminal that reads cards.

This model promises the potential to substantially increase the outreach of financial services by using a different delivery channel (retailers/ mobile phones). A different trade partner (Chain Store) having experience and target market distinct from traditional bank may be significantly cheaper than the bank based alternatives. In this model customer account relationship resides with the bank (Tomašková, 2010). This theory contributes to the independent variable in the study since it explains how commercial banks develop financial products and services and distributes them.
through retail agents who handle all or most of the customer interaction. It also contributes to the mediating variable financial inclusion because of the ability of the bank led model to increase the outreach of financial services to the existing and potential bank customer’s hence increasing financial inclusion.

2.2.6 Non Bank Led Theory

Nonbank-led theory was developed by Kumar in 2006. Under the nonbank led theory, customers do not deal with a bank or maintain a bank account. Instead, they deal with a nonbank firm either a mobile network operator or prepaid card issuer and retail agents serve as the point of customer contact. In this model customers exchange their cash for e-money stored in a virtual e-money account on the nonbank’s server, which is not connected to a bank account in the individual’s name (Kumar, et al. 2006). This model is more risky as the regulatory environment in which these nonbanks outlets operate might not give much importance to issues related to customer due diligence which may lead to significant Anti-Money Laundering and Counter-Terrorism Financing (AML/CFT) risks. However, this model becomes feasible after regulators have gained sufficient understanding in mitigating agent related risks using bank led model and need to think about mitigating only e-money related risks (Kapoor, 2010). E-money risks are characteristic of this model and more stringent regulation is required to mitigate this.

Non-bank led agents are required to meet some specific standards of transparency, financial strength and liquidity. There should be clear and well-defined limits on nature, type and volume of business that such entities can carry out (Mwando, 2013). To avoid insolvency, these entities may be compelled to deposit their net e-
banking excess funds with scheduled banks meeting certain minimum rating criteria (State Bank of Pakistan, 2011). The Non bank theory has been applied in the study to inform the independent variables agency banking and electronic banking because it explains how a nonbank firm either a mobile network operator or prepaid card issuer and retail agents can be used to distribute banking products and services to clients without dealing with a bank. However non bank led agents are not currently popular in the Kenyan financial sector because of the risks involved.

2.2.7 Bank Focused Theory

Under the bank-focused theory, a conventional bank uses non-traditional inexpensive delivery channels to provide banking services to its existing customers. Examples range from use of automatic teller machines (ATMs) to internet banking or mobile banking to provide certain limited banking services to bank customers. This theory was developed by Kapoor in 2010. Use of ATMs is complementary in nature and may be seen as a modest extension of conventional branch-based banking. This offers advantages such as more control and branding visibility to the concerned financial institutions. However there are concerns with the experience, protection of identity and transactions, consistency and accessibility of service and extent of personalization allowed.

Financial institutions address these issues and concerns by providing a branchless banking service with a simple and easy to use interface. The security is further strengthened with the help of multi-factor authentication and other technology, capable of running continuously and uninterrupted 365 days a year (Kapoor, 2010). The non-bank led agent banking has been used extensively by banks in Kenya. Both
the bank led and bank focused theories are relevant to this study as they are concerned with the use of retail agents and non-traditional low-cost delivery channels like ATMs, internet banking or mobile banking solutions to provide banking services to its existing customers. This theory contributes to the independent variables agency banking and electronic banking since it explains how commercial banks use non-traditional inexpensive delivery channels to provide banking services to its existing customers.

2.3 Empirical Literature

2.3.1 Effect of agency banking on the financial performance of commercial banks in Kenya

In a growing number of countries, banks and other commercial service providers are finding new ways to make money by delivering financial services and products to the unbanked people. Apart from using bank branches and their own field officers, they offer banking and payment services through postal and retail outlets including grocery shops, pharmacies, seed and fertilizer retailers and petrol stations among others (CGAP 2006). Policy makers and regulators are demonstrating a keen interest in branchless banking, although in most countries excessive regulation continues to restrain the emergency of branchless banking. Where regulation allows, existing new branchless banking initiatives are being developed by a number of market participants (Neil & Leishman, 2010). Whereas there is enormous empirical literature on branchless banking as a financial inclusion strategy, little empirical literature exists on branchless banking channels and their effect on financial performance of commercial banks in Kenya.
Banking agents are being used by banks to increase cost efficiency and ultimately improve financial performance. This is because they are relatively cheap to set up and are typically compensated on a per-transaction basis, so their cost to the provider is largely variable (Ignacio, 2009). The fixed cost element which is in many cases a higher percentage of the overall costs of the bank are usually excluded in this model. By using mobile phones and point-of-sale terminals as the technology platforms, financial service providers do not even have to incur equipment costs for each new retail outlet opened. And, by paying the outlet a commission per transaction rather than paying salaries to tellers, service costs are incurred only if there is business. Veniard et.al (2010) used confidential cost and revenue estimations provided by three service providers in Africa, one in Asia, and three in Latin America. They found that agent banking does help improve the economics for these institutions compared with branches, especially for high-transaction, low-balance accounts that is a common feature among poor financial services users.

Mwangi (2012) investigated the role of agent banking as a diversification strategy by commercial banks in Kenya. She used descriptive research design. The study found that agent banking was extremely useful as a diversifying strategy among banks. This is because banks used agent banks to expand geographical coverage and promote their products and services because they provide time savings and they are more efficient than branches. The study recommended that agent banking be implemented in all the commercial banks in Kenya and agent channels made accessible to customers. The study also recommended that the agent banking infrastructure needs to be improved. However, the study used only one form of branchless banking hence limiting the scope of generalization of the findings.
Musau and Jagongo (2015) analysed the utilization of agency banking on performance of selected banks in Nairobi County. The study adopted a descriptive research design. The study targeted 4 banks that offer agency banking services in Kenya. Findings of the study point to the fact that liquidity availability in the outlets affected banks performance in addition to leading to frustrated customers. The study also found out that some of the agency regulations included board of directors and executive management, accountability and quality control. The study also found out that agency infrastructure cost and security was a major influence to banks performance. The study was based on descriptive research design only and only focused on only 4 banks and the findings may not be generalized to the entire banking industry.

Mosoti and Mwaura (2014) investigated the factors influencing slow adoption of agent banking services by customers as a financial inclusion tool by commercial banks in Kenya. The study was conducted in Roysambu Constituency. They used a descriptive research design with a questionnaire as the main tool of data collection. According to the findings of the study, some of the factors that influenced the slow adoption of agent banking services were the agent banking charges which were also not transparent. Transportation was also an issue especially to those respondents whose bankers did not have wide network coverage. Other factors include trustworthiness of the bank agent and security and infrastructure challenges such as system and power failure and liquidity of the agents. Some of the shortcomings of this study are that it investigated agency banking channel in isolation yet research has shown that the main branchless banking channels, agent banking, mobile
banking, internet banking and POS channels are complementary to each other. Secondly the study was carried on only one constituency hence limiting the scope of the generalization of its findings.

2.3.2 Effect of electronic banking on the financial performance of commercial banks

From a banks perspective, using the internet was found to be a more efficient than other distribution strategies as observed by Sadeghi and Farokhian (2011). Malhotra and Singh (2009) in their study on the impact of internet banking on bank performance and risk also found out that on average internet banks are bigger, more profitable and are more operationally efficient. They also found that internet banks have better asset quality and are better managed to reduce the capital expenses and that online banks in India depend substantially on deposits. Rosen (2013) investigated whether the use of mobile banking and agent banking can live up to the promise of lifting the welfare of low-income earners in Kenya. Findings from this study suggest that mobile banking and agent banking have facilitated the delivery of financial services to population which was previously excluded from financial services and the result is the uplift of the economic conditions of these individuals and improvement in their overall welfare. The study did not establish cumulative effect of the various branchless banking strategies on performance.

Okiro and Ndungu (2013) sought to determine the impact of mobile and internet-banking on performance of financial institutions in Kenya. The study also sought to identify the extent of usage of mobile and internet banking in financial institutions in Kenya. The study investigated 30 financial institutions. The study found that
commercial banks in Kenya had the highest usage rate of internet banking among the financial institutions sampled. During the study period, SACCOS were slowly adopting internet banking, while micro finance institutions had not yet adopted internet banking.

Aduda and Kingoo (2012) analysed the relationship between e-banking and performance of Kenya banking system. Specifically, the study established whether there is relationship between performance and bank’s investments in e-banking. The study used both descriptive and inferential statistics in collecting and analyzing of the data. Findings reveal that there exists strong positive relationship between e-banking and bank performance. However, the study did not holistically cover all forms of branchless banking such as mobile and agency banking.

Gakure, et.al (2013) examined the Influence of bank innovations on income of commercial banks in Kenya. They used descriptive survey research design. Their findings indicate that bank innovations have a moderate influence on the financial performance of commercial banks in Kenya. They recommended that banks should continue investing in innovation delivery channels as this will improve their cost control strategies and hence improvement in the bank’s financial performance. The main shortcoming to this study is that conclusions were based on primary data only limiting scope of generalization.

Mbithi, et.al (2011) analysed how M-Pesa is used in Kenya as well as its economic impacts. They analyzed data from two waves of individual data on financial access in Kenya. Findings suggest that increased use of M-Pesa lowers the tendency of
people to use informal savings solutions such as ROSCAS, but raises the likelihood of them being banked. They found little evidence that people use their M-Pesa accounts to store wealth. Findings also suggest that M-Pesa improves individual outcomes by promoting banking culture and increasing transfers. Both the studies failed to incorporate all the branchless banking channels hence could not measure the overall effect of branchless banking on financial performance of commercial banks.

Acharya, et.al (2008) examined the impact of online banking intensity on the financial performance of community banks. Study results indicate that the increasing use of internet as an added channel of marketing banking services and products had significantly improved the financial performance of community banks. These results show that online banking improves the financial performance and community banks should adopt new information technologies and offer targeted online services. However, the study used only one form of branchless banking hence limiting the scope of generalization of the findings. Simpson (2002) suggested that e-banking is driven largely by the prospects of minimization operating costs and maximizing operating revenues. A comparison of online banking in developed and emerging markets revealed that in developed markets lower costs and higher revenues were more noticeable. This study considered only internet banking in isolation yet research shows that banks are trying to use more than one branchless banking channel to improve financial performance as observed by Capgemini (2012).
2.3.3 Branchless Banking and Financial Inclusion

According to FinAccess 2013 survey report agent banking was cited as a very popular channel despite being relatively new. Of the respondents interviewed 53.2% of the respondents admitted that they were aware of agent banking. 12.2% of the respondents admitted having used the services of a banking agent in the past (CBK, FSD 2013). This proves the fact that agent banking is currently a very popular branchless banking channel. Mobile banking ownership has also been on a rising trend in both rural and urban areas since 2006. According to FinAccess survey 2013 report conducted by FSD and CBK, mobile banking ownership has increased to 83.8% and 61.5% in 2013 in urban and rural areas respectively from 53% and 19.2% respectively in 2006. In line with this growth in the ownership use of mobile money for domestic remittances increased to 91% and 60% in rural and urban areas respectively. This increase has been phenomenal considering the fact that in 2006 the idea of domestic remittances using mobile money was non-existent (FSD, 2013).

Fin Access survey 2013 report further cited mobile banking agents as the nearest financial providers by 76.4% and 75.5% of the respondents in rural and urban areas respectively. 85.8% of the adults in urban areas can walk to the nearest mobile money agent and 60.4% to the nearest bank retail agent (CBK, FSD 2013). These figures emphasize the growing importance of the branchless banking channels (specifically mobile banking and agency banking) due to their accessibility and convenience to the masses. The impact of branchless banking strategies on financial inclusion indicates that branchless banking channels can work as a bridge between the institutions and the excluded, given that the right kind of financial tools are provided in order for opportunities to be created through financial inclusion.
The financial development in Kenya has been dominated by the great expansion of mobile banking and this might not have been possible without the great expansion of mobile phone users in recent years (FSD Kenya, 2011). Mobile banking service that has gained most attention within the banking industry in Kenya since the invention of the successful mobile-based money transferring system M-PESA, provided by Vodafone and its Kenyan affiliate Safaricom in 2007. Since mobile money was pioneered in 2007, linkages and integration of mobile banking payment platforms with financial institutions to distribute financial services and products have taken place (CBK, 2013). Such interfaces make the provision of financial services provision more accessible for clients and cost efficient for financial institutions.

Rosen (2013) examined whether the use of mobile banking and agent banking can live up to the promise of lifting the welfare of low-income earners in Kenya. Potential welfare gains were identified and these gains were later explored in a household survey. The survey examined the effects from these non-conventional channels on low-income individuals based on their ability to save, to invest and to consume as well as the effects on their overall wellbeing in terms of food security and health. Findings from this study suggest that mobile banking and agent banking have facilitated the delivery of financial services the population in Kenya that was previously excluded and the result is an economic lift in overall wellbeing.

Anderson (2010) explored the implications of mobile banking for competitive dynamics between competing firms and the related issues for regulatory authorities. One of his findings is that mobile banking has the potential to bring basic banking and electronic transactions services to the previously unbanked consumers in
developing markets. Cracknell (2012) conducted an investigation to the policy innovations to improve access to financial services in developing countries with specific reference to Kenya. The paper also examined the capability of replicating the innovations in other countries, and the extent to which the innovations meet the principles for expanding access to finance. The study was based on a case study of 4 institutions in Kenya (Safaricom, Equity Bank, Kenya Post Office Savings Bank and Musoni DTM). The main shortcoming of this study is the fact that it was based on a case study of only 4 institutions hence the findings may not be representative of the entire financial services industry.

Ndungu and Njeru (2014) conducted a study to assess some of the factors that contribute to the adoption of agency banking in Kajiado Sub County of Kenya. Three independent variables were considered namely customer service, convenience and quality of agents. Some of the results indicated that availability of system contributes to reliability of the service. High reliability increases the adoption and use of agency banking. Complaints resolution time does not affect the adoption and use of agency banking. Agency banking is delivering convenience in form of extended hours of banking and by bringing the banking service closer to the customers leading to increased adoption and use of agency banking. The main shortcomings of the study is that it considered agency banking only and also conducted a case study of only one county hence the results are representative.
2.3.4 Regulation of branchless banking and financial performance of commercial banks

According to CBK (2015) effective financial markets require regulations that bring certainty, foster competition, sustain innovation, and promote ethical and responsible business conduct that upholds the rights of customers. When regulators embrace a leadership role in developing the market, they become innovative and take reasonable risks inherent to making the changes needed to create a more inclusive financial sector. Due to technological nature of branchless banking there is a danger of the legislative framework not evolving as fast which brings the questions of whether the regulators have the technical capacity and competence to regulate effectively. Nyaga (2014) further observed that mobile money transactions have presented regulatory challenges that could potentially hinder maximum development benefits. This is because firstly, mobile money blurs the traditionally distinct and independent sectors of regulation most notably, the telecommunications and financial banking sectors. It often involves an overlap between multiple ministries and Government agencies, thus adding to the complexity of oversight needed.

Gutierrez and Singh (2013) sought to explain statistically what factors contribute to mobile banking usage, with a particular focus on the regulatory framework. They constructed an index that measures the existence of laws and regulations that support mobile banking activity for 35 countries. They used variations in regulatory environments across these countries and armed with newly released data on mobile banking use by approximately 37,000 individuals in the 35 countries. The analysis found that a supportive regulatory framework is associated with higher usage of mobile banking for the general population as well as for the unbanked. The study
focused only on mobile banking hence not conclusive. Panjwani (2011) argues that despite being celebrated as one of the most promising solutions to financial inclusion in the world, today’s branchless banking systems seem to fall short of providing good security guarantees to their beneficiaries. He strongly believes that security issues are particularly a concern here because of the massive cash flows these systems tend to generate and, at the same time, the limited educational background and negotiating power of the users they serve who are mostly the rural poor.

According to Nyaga (2014) mobile money sits at the intersection of a number of important policy issues. These issues include interoperability in relation to ICT networks, interconnection issues among ICT service providers, sector competition issues, lack of legislative and regulatory harmonization, and convergence of the ICT and financial sectors. Each issue is complex in its own right, and is often associated with a different regulatory domain. This complex overlap of issues creates the very real risk of coordination failure across regulators. Frame and White (2014) argue that regulation can curtail innovation and at the same time promote others, in an attempt to bypass the regulation. Gutierrez and Singh (2013) concluded that that a supporting regulatory framework is necessary in order to promote higher usage of mobile banking for the general and unbanked population and also to address the security challenges posed by this mode of banking. According to Brigham and Gapenski (1997) financial intermediaries have historically been heavily regulated with the primary purpose of this regulation to ensure the security of the institutions and thus to protect depositors.
2.3.5 Financial performance of commercial banks in Kenya

Financial performance is measured in a number of ways. Profitability is one of the most commonly used financial performance measures. Some of the key performance indicators of Bank’s profitability include; Return on Assets (ROA) calculated as net profit/total assets. ROA shows the ability of the management to acquire deposits at a reasonable cost and invest them in profitable investments (Ahmed, 2009). This ratio indicates how much net income is generated per £ of assets. A higher ROA value indicates higher profitability. Return on Equity (ROE) is another performance indicator. This is net profit/total equity. ROE is the most important indicator of a bank’s profitability and growth potential from the shareholders/investors perspective. It is the rate of return to shareholders/investors or the percentage return on each £ of equity invested in the bank (Ahmed, 2009).

Hagel J. et.al (2010) observed that most Wall Street analysts and investors tend to focus on return on equity as their primary measure of company performance. Many executives focus heavily on this metric as well, recognizing that it is the one that seems to get the most attention from the investor community. They further argue that ROE can be used divert attention from business fundamentals and lead to nasty surprises. Companies can resort to financial strategies to artificially maintain a healthy ROE for a while and hide deteriorating performance in business fundamentals. They therefore conclude that ROA is a better metric of financial performance as it explicitly takes into account all the assets used to support business activities. Using ROA as a key performance metric quickly focuses management attention on the assets required to run the business.
Another performance indicator is the Cost to Income Ratio (C/I). This is calculated as total cost /total income. It measures the income generated per £ cost. That is how expensive it is for the bank to produce a unit of output. A lower the C/I ratio indicates more cost efficiency and a higher C/I ratio indicates low cost efficiency. Higher C/I ratio implies that the operations are cost- inefficient. Brigham and Gapenski (1997) consider that "profitability is the net result of various policies and managerial decisions, and the profitability rates represent the net operating result of the combined effects of liquidity, asset management and debt management”. For this study ROA was used as a measure of financial performance of commercial banks since it takes into account all the assets used to support banking business.

Ongore and Kusa (2012) argue that profitability analysis of commercial banks has been a subject of great interest to academic scholars since the Great Depression in the 1940’s. Commercial banks have to generate enough income to cover their operational cost they incur in the due course of their operations. For sustainable and effective intermediation, banks need to be profitable. Financial performance of commercial banks has also been a subject of interest by shareholders, investors, financial analysts, bank managers and government institutions. Management efficiency is one of the key determinants of banks profitability. Some of the key financial statements ratios act as proxy for management efficiency.

Odunga, et.al (2013) studied the effect of bank specific performance indicators including credit risk capital adequacy on the operating efficiency of commercial banks in Kenya. The study adopted an explanatory research design and analysed the panel data using Fixed Effects Regression. The results of the study indicated that the previous year operational efficiency and risk based capital ratio positively and
significantly affected the bank’s operating efficiency in the current year. This implies that the history of a firm’s performance will absolutely influence how a firm moves forward in an effort to rationalize its operational strategies. Banks should seek mechanisms to improve their risk based capital ratio in order to improve operating efficiency and remain competitive in the market.

According to Ongore and Kusa (2012), the financial performance of banks has significant implications for economic growth of the entire country. Good financial performance rewards the shareholders for their investment. This in turn encourages further investment and brings about economic development. On the other hand, poor banking performance can lead to banking failure crisis which has negative repercussions on the economic growth. Studies have revealed that commercial banks in Sub-Saharan Africa (SSA) are more profitable than the rest of the world with an average Return on Assets (ROA) of 2 percent over the last 10 years. This rate of return is significantly higher than bank returns in other parts of the world (Flamini et.al, 2009).

Ongore and Kusa (2012) further examined the determinants of financial performance of commercial banks in Kenya. They used the CAMEL approach to check up the financial health of commercial banks in Kenya. They found out that capital adequacy, asset quality and management efficiency significantly affect the performance of commercial banks in Kenya. They also observed that financial performance of commercial banks in Kenya is determined mainly by board and management decisions while macroeconomic factors had inconsequential contribution. The study failed to capture any form of branchless banking but rather
concentrated on economic factors and management skills as the key determinants of financial performance of commercial banks.

Mugo, Wanjau and Ayodo (2012) investigated competitive intelligence practices of banks in Kenya with a specific focus on Equity bank. The study adopted a case study design. The study established that for greater financial performance of banks in Kenya, the competitive intelligence practices that should be applied are mainly product differentiation strategies, market intelligence, technology intelligence and strategic alliance. All these strategic intelligence practices lead to superior financial performance and also cost reduction for the banks, with technology intelligence being the highest contributor. However, the study used case study of only one bank. This may not be generalizable of the entire banking industry as the financial and efficiency metrics within the industry are not homogeneous.

Kamau (2011) conducted a study to investigate the intermediation efficiency and productivity in the banking sector in the post liberalization period in Kenya. The study was motivated by the fact that although the banking sector constitutes a large part of the financial system in Kenya, little information is available about its intermediation efficiency and productivity position. The study adopted a non-parametric Data Envelopment Analysis (DEA) to analyze intermediation efficiency in the banking sector and Malmquist Productivity Index (MPI) to measure the productivity gains of banks in Kenya. She observed that though the banks were not fully well-organized in all respects, they performed fairly well during the period under study.
She also observed that banks still have the rationale and scope to improve performance by improving their technology, skills and enlarging their operational scale so as to be fully efficient. The study recommends policies encouraging competition, products diversification to advance loans, risks minimization through increased capital regulation and privatization of some banks. The shortcoming of the study is that it used DEA (Data Envelopment Analysis) which benchmarks against the best performance in the industry and may not be the most suitable model to analyze intermediation efficiency. Other estimation methods like OLS would have produced findings which are more representative of the industry.

Kebede (2010) investigated the effect of corporate governance on performance of 37 commercial banks in Kenya over the financial years 2005-2009. The main findings were that the large board size tends to negatively impact performance, existence of independent board of directors tend to enhance performance of the banks. The study observed that CEO duality or otherwise has no impact on the performance of commercial banks in Kenya. The study therefore recommended that Kenyan commercial banks need to check the size of their board of directors and also increase the number of independent directors for sustained financial performance.
2.3.6 Summary of key Studies done in the Area of Study and their Shortcomings.
Table 2.1 below presents a summary of the key studies done in the area and their shortcomings.

Table 2.1: Summary of key studies done in the area of study and the shortcomings.

<table>
<thead>
<tr>
<th>Author</th>
<th>Title of the study</th>
<th>Objectives</th>
<th>Methodology</th>
<th>Findings</th>
<th>Shortcomings of the study</th>
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<tr>
<td>Okiro and Ndungu (2013)</td>
<td>The impact of mobile and internet banking on performance of financial Institutions in Kenya</td>
<td>To establish the impact of mobile and internet banking on the performance of financial institutions in Kenya. To establish the extent of use of mobile and internet banking in financial institutions in Kenya</td>
<td>Descriptive research design Open ended and closed questionnaires</td>
<td>Commercial banks had the highest rate of usage of internet banking among the financial institutions sampled. SACCOS are slowly adopting internet banking, while micro finance institutions have not yet adopted internet banking.</td>
<td>Study utilized only 2 channels of branchless banking hence it was not comprehensive. Only descriptive statistics were done. Study focused heavily on the utilization of mobile and internet banking and didn’t link to utilization to the performance of financial institutions.</td>
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<tr>
<td>Ritho and Jagongo (2015)</td>
<td>Mobile Banking and Financial Performance of Commercial Banks in Kenya</td>
<td>To investigate the mobile banking effects on financial performance of Commercial Banks in Kenya.</td>
<td>Descriptive research design Questionnaires were used to carry a survey on all the 43 commercial banks</td>
<td>Prices of M-banking services had a high positive influence on the financial performance of commercial banks in Kenya. M-Banking helped to promote efficiency and confidence in the financial system thus winning public trust</td>
<td>The major shortcoming of the study is that it considered only mobile banking channel in isolation. Study would have been more complete if other electronic banking channels which are complementary to mobile banking were utilized in the study.</td>
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<tr>
<td>Author</td>
<td>Research Question</td>
<td>Methods</td>
<td>Conclusion</td>
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<td>Rosen (2013)</td>
<td>Branchless banking in Kenya. Does mobile banking and agent banking have the potential to lift the welfare of low-income individuals</td>
<td>What are the potential welfare gains from using branchless banking in Kenya? Can branchless banking live up to the promise of lifting the welfare of low-income earners in Kenya</td>
<td>Study used only one form of branchless banking. Not yet established cumulative effect of the various branchless banking strategies on performance.</td>
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<td>Gakure (2013)</td>
<td>Influence of bank innovations on the performance of commercial banks in Kenya</td>
<td>To determine the influence of bank innovations on the income of commercial banks in Kenya.</td>
<td>Conclusion based on only primary data limiting scope of generalization.</td>
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<td>Aduda and Kingoo (2012)</td>
<td>Relationship between e-banking and performance of commercial banks in Kenya</td>
<td>To establish the relationship between e-banking and performance of commercial banks in Kenya</td>
<td>The study did not holistically cover all forms of branchless banking such as mobile and agency banking.</td>
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<td>Mwangi (2012)</td>
<td>Agent banking as a diversification strategy by commercial banks in Kenya</td>
<td>To evaluate use of agent banking as a diversification strategy among the Kenyan banks</td>
<td>The study used only one form of branchless banking hence limiting the scope of generalization of the findings.</td>
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<td>Ram, et.al (2008)</td>
<td>Impact of online banking intensity on the financial performance of community banks</td>
<td>To examine the impact of online banking intensity on the financial performance of community banks</td>
<td>The study used only one form of branchless banking hence limiting the scope of generalization of the findings.</td>
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Musau and Kangogo (2015) | An analysis of the utilization of agency banking on performance of selected banks in Nairobi County, Kenya | To assess the utilization of agency banking on the performance of Kenyan banks | Descriptive research design | (i) Liquidity availability in the outlets affected banks performance. (ii) Agency infrastructure cost and security was a major influence to banks performance. | The study used only one form of branchless banking hence limiting the scope of generalization of the findings

Ongore and Kusa (2012) | The determinants of financial performance of commercial banks in Kenya | The overall objective of this study was to examine the effects of bank specific factors and Macroeconomic factors on the performance of commercial banks in Kenya. | CAMEL approach to check up the financial health of commercial banks | Financial performance of commercial banks in Kenya is driven mainly by board and management decisions, while Macroeconomic factors have insignificant contribution. | The study failed to capture any form of branchless banking but rather concentrated on economic factors and management skills as the key determinants of financial performance of commercial banks

Mugo, et. al (2012) | An investigation of competitive intelligence practices of Kenyan Banks with a specific focus of Equity | To investigate the competitive intelligence practices adopted by Kenyan Banks | Case study | Competitive intelligence practices lead to greater financial performance and cost reduction for the bank | The study used case study of only one bank. This may not be representative of the banking industry as the financial and efficiency metrics within the industry

Source: Author (2016)

This study has addressed the weaknesses highlighted from the previous studies on the subject in a number of ways. Firstly the study has considered most of the branchless banking channels currently in use in the Kenyan banking industry. This is because the various branchless banking channels are complementary to each other. For example the agency banking agents use POS channels to process agency banking customer transactions and mobile banking and ATMS use the internet to operate. Secondly the study utilised both the primary and secondary data and covered which is a more comprehensive approach. The study has also used a census approach and which included observations from the entire population of banks and also the entire country to form conclusions and generalizations. To ensure
completeness the study also included both descriptive and inferential analysis and compared the results of descriptive and inferential analysis for consistency.
2.4 Conceptual Framework

The conceptual framework in figure 1 below shows the relation between the independent variables, dependent variables, mediating variable and moderating variable distilled from the literature review by the researcher.

Figure 2.1: Conceptual Framework.

Source: Author (2016)
The conceptual framework for this study is made up of various Branchless banking distribution channels like agency banking and electronic banking (Mobile banking, online/internet banking, ATM banking and POS channels) which were the independent variables for the study. It is premised that bank’s investment in agency banking may have an effect on the dependent variable financial performance of commercial banks (indicated as ROA) but this effect is mediated by financial inclusion and moderated by government policy as described in the literature review in chapter two. The conceptual framework is a graphical representation of how these constructs of interest are interconnected and is depicted in figure 2.1 above.

The presumed interrelationships between the study variables is decomposed into 4 sub models. The first proposed model depicts the direct effect of agency banking (independent variable) on the financial performance of commercial banks (dependent variable). The main indicator for agency banking is the amounts invested in agency banking by banks. The main indicator of commercial bank’s financial performance is Return on Assets (ROA). According to Hagel J. et.al (2010), ROA is a better measure of financial performance as it explicitly takes into account all the assets used to support business activities and using ROA as a key performance metric quickly focuses management attention on all the assets required to run the business. In this study ROA was used as a measure of performance since it takes into account all assets used to generate income for the business. The second sub model depicts the direct effect of electronic banking (independent variable) on ROA (dependent variable). Just like in the first sub model the main indicator for electronic banking is the amounts invested in electronic banking by banks.
The third sub model depicts the mediation effect of financial inclusion on financial performance of commercial banks (indicated as ROA). Deposits market share, number of accounts and value of transactions were used as indicators for financial inclusion. Through the mediating effect of financial inclusion, the principal banks are able to reach a new customer segments and previously unbanked population hence increasing their deposits market share and consequently improving their financial performance. The last sub model summarises the effect of government policy on the relationship between independent and dependent variables. In this study government policy in terms of regulation of branchless banking is conceptualised to have an effect on the relationship between branchless banking and financial performance. The indicators for government policy were extent of regulation, forms of regulation and adequacy and effectiveness of regulation. Regulation of branchless banking activities may act as a driver or a constraint to the branchless banking movement hence government regulation may promote or negatively affect the branchless banking movement.
CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter focused on the methodology that was used to carry out the study. This included the research design, the empirical model, target population, data collection tools used, data collection techniques, data analysis and presentation and how the issues of validity and reliability of the research instruments were addressed in the study.

3.2 Research Philosophy

According to Saunders and Thornhill (2009) research philosophy is important in the development of the research background, research knowledge and its nature. Research philosophies vary on the goals of the research and the way to achieve these goals. Johnson and Christensen (2008) are of the opinion that research philosophy is the independent approach undertaken by the individual researcher taking cognizance of the underlying principles of design, implementation, and evaluation and assuring that a particular problem will motivate the researcher to investigate and develop a temporary or permanent solution. It is strongly recommended that when undertaking research, the researcher needs to take into account the different research philosophies, since these parameters describe perceptions, beliefs, assumptions, nature of reality and truth and individual values of the researcher.
The study heavily relied on objective data collection and analysis in order to make conclusions and recommendations. It therefore adopted the positivist philosophy (Saunders, 2009). Positivist philosophy claim that reality is stable and therefore can be observed and described from an objective point of view without bias, by using standardized research instruments without interfering with the phenomenon being studied. Positivism is based upon values of reason, truth and validity and there is a focus purely on evidence, gathered through direct observation and experience and measured empirically using quantitative methods, surveys and experiment and statistical analysis (Blaikie, 1993; Saunders, Lewis and Thornhill, 2009). Positivism philosophy is commonly used in natural science because it is an objective based method. This study adopted multiple linear regression technique to measure analyze data collected in order to determine the various effects in the study (direct, mediated and moderated) in order to make conclusions and generalizations. The general aim of the study was to evaluate the effect of branchless banking on the financial performance of commercial banks in Kenya. The study also entailed interpreting the research findings in the context of the relevant theoretical and empirical literature described in chapter two of this thesis.

3.3 Research Design

The research design is a plan and structure of investigation to be used to obtain answers to research questions (Creswell, 1994). This study adopted an exploratory non experimental research design. This is because the study involved tests to determine the effects of the independent, mediator and moderator variables on the dependent variable. The study tested the effect the independent variable (branchless banking) on the dependent variable (financial performance of commercial banks).
and also the effect of the mediating variable (financial inclusion) and moderating variable (government policy) on the relationship between the independent and dependent variables.

### 3.3.1 Empirical Model

The empirical model was based on panel data. However, the econometric analysis of panel data is dynamic given the heterogeneity of the individual variables. Both the one way error component model and the two way error component models were necessary. It was expected that each bank has unobservable individual bank’s specific effects that impact on bank’s financial performance other than branchless banking. To account for individual effects and the time – specific affects both the one – way and the two- way error components models were therefore inevitable.

The general empirical model was as follows:

\[ y_{it} = \alpha + \beta x_{it} + u_{it} \]

*Baltagi (2010)*

Where \( i \) denoted the individual commercial bank and \( t \) denoted time aspect. \( y_{it} \) was the dependent variable, \( x_{it} \) was a vector of explanatory variables, \( u_{it} \) was the error term, \( \alpha \) and \( \beta \) are the model parameters to be estimated. The one – way error component regression model assumed that the error term can be composed into two components such that:

\[ u_{it} = \mu_{it} + v_{it} \]
Where: \( \mu_{it} \) is the unobserved individual bank’s – specific effects which are not included in the model. \( \nu_{it} \) is the remainder disturbances. We note that \( \nu_{it} \) is further assumed to be in such that \( \nu_{it} \sim (0, \sigma^2_v) \) implying that \( \nu_{it} \) has a white noise distribution. On the other hand, the two – way error component regression model assumes that the error term can be decomposed into three components such that:

\[
u_{it} = \mu_{it} + \lambda_{ti} + \nu'_t, \quad \lambda_{ti} \sim \mathcal{N}(0, \sigma^2_{\lambda}), \quad \nu'_t \sim \mathcal{N}(0, \sigma^2_{\nu'})
\]

Where; \( \mu_{it} \) is the unobserved individual bank’s – specific effects which were not included in the model. \( \lambda_{ti} \) is the time – specific or the individual – invariant effect which are not included in the model. \( \nu_{it} \) is the remainder disturbances. By symmetry as in the one – way error component regression model \( \nu_{it} \) is a white noise distribution.

In addition to running the one – way and the two – way error component regression models, specification on whether to run the fixed effects or the random effects model was done. A lot of debate exists as to which of the two is preferred to the other. Analysis of literature underlying panel data posit mixed stands on whether fixed or the random effects model should prevail. Specifically, Mundlak (1961) and Wallace and Hussain (1969) are in favor of fixed effects model while Balestra and Nerlove (1966) advocate for the random effects model. The outcome of the Hausman specification test informed the decision on whether to use fixed or random effects model.

From model 3.1 above the research models were defined as follows:
\[ \text{ROA}_u = \alpha + \beta_1 \text{AGBO}_u + \beta_2 \text{ELBO}_u + u_u \] .................................................3.4

Source: Baltagi (2010)

Where,

Model 3.4 above sought to estimate the dependent variable (ROA) on all other explanatory variables

ROA refers to Return on Assets. This was used as a proxy for Commercial Bank’s financial performance

\( \alpha = \) intercept/constant term

\( \text{AGBO} = \) Agent banking

\( \text{ELBO} = \) this refers to electronic banking which comprises of Mobile banking, Automatic Teller Machines, online banking and point of sale terminals.

Betas \( (\beta) \) were the coefficients of the models to be estimated

\( u_u = \) the error term. It includes other factors outside the model that may also have effect on bank’s financial performance.

3.3.2 Model with Mediating Variable

Equations 3.6.1, 3.6.2 and 3.6.3 were joint regression models between the independent variable, the mediating variable and the dependent variable.

\[ \text{ROA}_u = \alpha + \beta_1 \text{AGBO}_u + \beta_2 \text{ELBO}_u + M + u_u \] .................................................................3.5.1
Where

\[ M = \alpha + \beta_3 FI + u_i \] \hspace{1cm} \text{3.5.2}

Source; Baltagi (2010)

Where;

\( FI \) = Represents financial inclusion which was a composite value of the banks deposit market share, number of accounts opened through branchless banking and value of transactions conducted through branchless banking. A geometric mean procedure was used to compute the composite value from the 3 sub variables. One of the advantages of geometric mean procedure is that it helps to reduce the effect of outliers and also normalize the research data (Vandesompele et al., 2002; Wu & Ye, 2009). The formula for geometric mean is expressed as:

\[ \mu = (X_1.X_2.X_3……X_n)^{1/n}, \]

Where;

\( X_1, X_2, X_3, \ldots \ldots X_n \) are the scores for the respective sub variables up to nth sub-variable

(Vandesompele et al., 2002; Wu & Ye, 2009).

3.3.3 Model with Moderating Variable

Equations 3.6.1 and 3.6.2 represent a joint regression model between the independent variable, the moderating variable and the dependent variable.

\[ ROA_i = \alpha + \beta_1 AGBO_i + \beta_2 ELBO_i + Mo + u_i \] \hspace{1cm} \text{3.6.1}
Where

\[ Mo = \alpha + \beta_1 GP + u \]

Source: Baltagi (2010)

Where

GP is represents the government policy which was measured in terms of regulation of branchless banking. To obtain a single indicator government policy, a composite value of the results of the 5 main questions used as indicators for government policy was obtained (Vandesompele et al., 2002; Wu & Ye, 2009).

3.3.4 Test for Mediating Effect

To test for the mediating effect, a model proposed by Baron and Kenny (1986) was used. This involved a four step approach in which several regression analyses are conducted and significance of the coefficients was examined at each step.

In this case X is the IV (Branchless Banking), Y is the dependent variable (ROA) while M is the moderating variable (Financial Inclusion)
### Analysis

**Step 1** Conduct a regression analysis with Branchless Banking (X) predicting Financial Performance of commercial banks (Y) for path c alone -

\[ ROA_i = \alpha + \beta_1 AGBO_i + \beta_2 ELBO_i + u_i \]

**Step 2** Conduct a simple regression analysis with Branchless Banking (X) predicting Financial Inclusion (M) to test for path a -

\[ FI_i = \alpha + \beta_1 AGBO_i + \beta_2 ELBO_i \]

**Step 3** Conduct a simple regression analysis with Financial Inclusion (M) predicting Financial Performance (Y) to test the significance of path b alone -

\[ ROA_i = \alpha + \beta_3 FI_i + u_i \]

**Step 4** Conduct a multiple regression analysis with Branchless Banking (X) and Financial Inclusion (M) predicting Financial Performance of commercial banks (Y) -

\[ ROA_i = \alpha + \beta_1 AGBO_i + \beta_2 ELBO_i + \beta_3 FI_i + u_i \]

*Source: Baron & Kenny (1986)*

The purpose of Steps 1-3 is to establish that zero-order relationships among the study variables exist. If one or more of these relationships are insignificant, researchers usually conclude that mediation is not possible or likely. Assuming there are significant relationships from Steps 1 through 3, one proceeds to Step 4. In the Step 4 model, some form of mediation is supported if the effect of M (path b) remains significant after controlling for X. If X is no longer significant when M is controlled the finding support full mediation. If X is still significant (i.e., both X and M both significantly predict Y), the finding support partial mediation (Baron & Kenny, 1986).

#### 3.3.5 Test for Moderating Effect

To test for the moderating effect, a model in 3.3.3 above proposed by Baron and Kenny (1986) was used. This involved a four step approach in which several regression analyses were conducted and significance of the coefficients generated examined at each step. The final step involved testing for the difference between the coefficients.
for the model estimated without the moderating variable and the coefficients for the model estimated with the moderating variables. If the difference was significant, then the moderating variable is said to have significant effect on the dependent variable. The model involved a four step approach in which several regression analyses are conducted and significance of the coefficients is examined at each step.

In this case X is the IV (Branchless Banking), Y is the dependent variable (Financial Performance of Commercial Banks) while Mo is the moderating variable (Government policy).

<table>
<thead>
<tr>
<th>Step</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Conduct a regression analysis with Branchless Banking(X) predicting Financial Performance of commercial banks(Y) for path c alone - ( ROA_{it} = \alpha + \beta_1 AGBO_{it} + \beta_2 ELBO_{it} + u_{it} )</td>
</tr>
<tr>
<td>2</td>
<td>Conduct a simple regression analysis with Government Policy(Mo) predicting Financial Performance(Y) - ( ROA_{it} = \alpha + \beta_4 GP_{it} + u_{it} )</td>
</tr>
<tr>
<td>3</td>
<td>Conduct a multiple regression analysis with Branchless Banking (X) and Government Policy(Mo) predicting Financial Performance of commercial bank(Y) - ( ROA_{it} = \alpha + \beta_1 AGBO_{it} + \beta_2 ELBO_{it} + \beta_4 GP_{it} + u_{it} )</td>
</tr>
</tbody>
</table>

Source: Baron & Kenny (1986)

The purpose of Steps 1-2 is to establish that zero-order relationships among the variables exist. If one or more of these relationships were insignificant, researchers usually concluded that moderation was not possible or likely. Assuming there are significant relationships from Steps 1 through 3, one proceeds to Step 4. In the Step
4 model, some form of moderation is supported if the effect of Mo (path c’) remains significant after controlling for X. If X is no longer significant when Mo is controlled, the findings support full moderation (Baron & Kenny, 1986).

### 3.4 Operationalization /Measurement of Variables

**Table 3.1: Operationalization and Measurement of the Variables**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type of variable</th>
<th>Operationalization</th>
<th>Indicators</th>
<th>Measurement in the research instruments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Bank’s financial performance</td>
<td>Dependent</td>
<td>Proportion of total bank’s Net profit as percentage of Total Assets</td>
<td>Ratio of Net Income/Assets</td>
<td>Data collection worksheet (Appendix III)</td>
</tr>
<tr>
<td>Return on Assets (ROA)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agency Banking</td>
<td>Independent</td>
<td>Amount of overall bank investment in agency banking</td>
<td>Amount of commercial bank’s annual investment in agency banking</td>
<td>Research Questionnaire(Appendix II) Section 2.1 Question 3</td>
</tr>
<tr>
<td>Electronic Banking</td>
<td>Independent</td>
<td>Amount of overall bank investment in electronic banking</td>
<td>Amount commercial bank’s annual investment in electronic banking</td>
<td>Research Questionnaire(Appendix II) Section 2.1 Question 3, Data collection worksheet(Appendix III)</td>
</tr>
<tr>
<td>Financial inclusion</td>
<td>Mediating</td>
<td>Composite of deposits Market share of the commercial banks, accounts opened through branchless banking and value of transactions conducted through branchless banking</td>
<td>Deposits Market share of the commercial banks, accounts opened through branchless banking and value of transactions conducted through branchless banking</td>
<td>Research Questionnaire (Appendix II) Section 2.3 question 10 Data collection worksheet(Appendix III)</td>
</tr>
<tr>
<td>Government Policy</td>
<td>Moderating</td>
<td>Branchless banking regulation</td>
<td>Extent of regulation, forms of regulation used and adequacy and effectiveness of regulation</td>
<td>Research Questionnaire (Appendix II) Question 6,7,8 and 9</td>
</tr>
</tbody>
</table>

*Source: Author (2016)*
3.5 Target Population and Sampling

The target population is the specific population from which information is desired. According to Saunders, *et al.* (2003) population is the full set of cases from which a sample is taken. The study targeted all the licensed commercial banks in Kenya (appendix VI). The study adopted a census approach hence there was no need for sampling. Study was conducted on all the 42 licensed commercial banks in Kenya. The adoption of branchless banking was not uniform across the industry, and not all the 42 banks had adopted branchless banking by end of financial year 2014. The study therefore adopted an unbalanced panel to take care of missing data at for some periods. 2 commercial banks (Dubai Bank Limited and Imperial Bank Limited) were placed under receivership during the study period and were therefore excluded from the study.

Questionnaires were delivered to the head offices of all the 42 commercial banks in Kenya hence a total of 42 questionnaires were delivered- one questionnaire for each commercial bank. The unit of analysis was the individual commercial banks which were analyzed to determine the effect of branchless banking on the financial performance. The unit of observation was the bank’s finance departments because of the strategic nature of the data required. At the bank level the main respondents for providing the research data were senior managers in the departments of Finance.

3.6 Data collection Instruments and Procedure

The study utilized both primary and secondary data. Primary data specifically on the indicators for branchless banking, financial inclusion and government policy was collected through a drop and pick questionnaire to Head Offices of all the 42
licensed commercial banks. Secondary data mainly on banks deposit market share and ROA was obtained from Central Bank Annual Banking Supervision reports for the financial years 2010 to 2014. Both the primary and secondary data was consolidated in one Microsoft excel worksheet contained in appendix X. This formed an unbalanced panel as it encompassed both the cross sectional and the time dimensions.

3.7 Testing the Validity and Reliability of Research Instruments

The accuracy of data collected largely depended on the data collection instruments in terms of validity and reliability (Mugenda & Mugenda, 2003).

3.7.1 Validity

Validity is the degree to which results obtained from the analysis of data actually represents the phenomenon understanding (Robinson, 2002). Two types of validity are relevant to the research instrument to be used. These include content validity and criterion validity. Content validity is how representative the questions are (Field, 2004). To ensure content validity, the questions were carefully selected to ensure that they comprehensively cover the full range of the construct under investigation. To achieve content validity, expert opinion was sought from 3 experienced researchers (Cooper & Schindler, 2008). The experts who reviewed the questionnaire found that the questions were relevant and comprehensive for measuring the study variables. Field (2004) further explains criterion validity as whether the questionnaire in measuring what it claims to measure. Regression analysis was applied to establish criterion validity. The independent variables were
used as the predictor variables and the dependent variable as the criterion variable. The correlation coefficient between them was the validity coefficients.

3.7.2 Reliability

Reliability is a measure of the degree to which research instruments yield consistent results (Mugenda & Mugenda, 2003). Joppe (2000) also defines reliability as the extent to which results are consistent over time and an accurate representation of the total population under study. If the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable. The questionnaire for primary data collection was pilot-tested on 32 selected respondents who are experienced Bank Managers and who were subsequently excluded in the main survey. Pilot testing of the questionnaire was conducted before the actual research so as to get an indication of the expected responses with a view to identifying ambiguous and unclear questions as well as to detect possible weaknesses in the design and instrumentation as suggested by Cooper and Schindler (2008).

3.8 Data Analysis and Presentation

The data collected was merged into one spread sheet to obtain an unbalanced panel. Data was compiled and organized using Microsoft Excel and analyzed using SPSS (for descriptive analysis) and STATA statistical software (for inferential analysis). Data analysis procedure began with computation and tabulation of descriptive statistics. Diagnostic tests were also conducted before inferential analysis. Spearman’s correlation matrix was generated to measure the correlation between variables as part of the diagnostic tests. According to Lind, et.al (2008) correlation
analysis is the study of the relationships between variables. To arrive at the appropriate model, between fixed effects model and random effects model, Hausman specification test was used. Other diagnostics tests to test for stationarity/unit root (fisher type unit root test) and serial correlation were conducted. Specific details of the above tests are explained below.

### 3.8.1 Diagnostic Tests

#### 3.8.1.1 Hausman Specification Test

In determining whether to run the fixed effects or the random effects model, Hausman test is usually of great importance. This test is designed to detect violation of the assumption of random effects modelling which states that the explanatory variables are orthogonal to the unit effects. If there is no correlation between the independent variable(s) and the unit effects, then estimates of in the $\beta$ in the fixed effects model $\hat{\beta}_{FE}$ should be similar to the $\beta$ in the random effects model $\hat{\beta}_{RE}$.

Therefore, the Hausman test statistic $H$ of choosing between the random effects and the fixed effects model is a measure of the difference of the two estimates. Under the null hypothesis Hausman test statistic has a chi – square distribution with degrees of freedom equal to the number of regressors in the model. At 5% conventional significance level a P- value less than 5% implies that the two models are statistically different hence the null hypothesis can be rejected. This further implies that we reject the random effect model in favour of fixed effects model.

#### 3.8.1.2 Unit Root Test/ Stationary Tests.

A common assumption in many time series techniques is that data is stationary. To test for stationarity or unit root in the variables, the study applied the Fisher – type
unit root test. This test is based on the augmented Dickey-Fuller approach. In this test the null hypothesis is that each series in the panel contains a unit root while the alternative hypothesis allows for some (but not all) of the individual series to have unit roots.

**3.8.1.3 Serial Correlation/Auto Correlation**

Serial correlation occurs in time-series studies when the errors associated with a given time period transmit over into future time periods. Serial correlation in panel data models biases the standard errors and causes the results to be less efficient. Serial correlation affects the efficiency of OLS estimators. With positive serial correlation, the OLS estimates of the standard errors will be smaller than the true standard errors. This will lead to the conclusion that the parameter estimates are more accurate than they really are. There will be a tendency to reject the null hypothesis when it should not actually be rejected. Fisher – type unit root test was used to test for serial correlation.

**3.8.1.4 Multicollinearity Tests**

Multicollinearity refers to a situation in which two or more explanatory variables in a multiple regression model are extremely linearly related. There exists a perfect multicollinearity if, in a regression model, the correlation between two independent variables is equal to 1 or -1 (Field, 2009). Field (2009) further explains that some correlation is considered to exist if the correlation coefficient between two explanatory variables is greater than 0.3. Tabachnick and Fidell, (1996) recommends that careful consideration has to be made before including two variables with a correlation coefficient of 0.7 or more.
In this study, multicollinearity was checked by running diagnostics tests before the actual analysis of the clean data. For this study multicollinearity was tested through running the spearman’s correlation matrix table which shows the correlation between the independent and dependent variables and sub variables used in the study. Where a strong correlation was detected, the highly correlated variables or sub variables were removed from the model to avoid bias in the model estimates. For this study any two variables with a correlation coefficient of 0.7 or more were dropped from the model.
Table 3.2: Summary of Diagnostic Tests

<table>
<thead>
<tr>
<th>Type of diagnostic test</th>
<th>Statistical Technique</th>
<th>Interpretation/Decision criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed and random modelling assumption</td>
<td>Hausman test&lt;br&gt;Denoted as $H$, used to determine whether to run the fixed effects or the random effects model. Has a chi–square distribution with degrees of freedom equal to the number of regressors in the model</td>
<td>At 5% conventional significance level a P-value less than 5% implies that the two models are statistically different hence the null hypothesis can be rejected.</td>
</tr>
<tr>
<td>Unit Root Test/Stationary Tests.</td>
<td>Fisher – type unit root test</td>
<td>Null hypothesis is that each series in the panel contains a unit root while the alternative allows for some (but not all) of the individual series to have unit roots.</td>
</tr>
<tr>
<td>Serial Correlation/Auto Correlation</td>
<td>Breusch Godfrey (BG) test. This test is used to test auto correlation of any order. Ho: $\rho_1=\rho_2=\rho_3=…=\rho_q=0$</td>
<td>Compute the F test for the joint significance of the residuals&lt;br&gt;If $^F&gt;F_{critical}$ reject null of no $q$ order autocorrelation</td>
</tr>
<tr>
<td>Multicollinearity tests</td>
<td>Spearman’s correlation matrix</td>
<td>If correlation coefficient between two variables is below 0.7, it’s ok to include in the model. Any two variables with a correlation coefficient of 0.7 or more, remove from the model.</td>
</tr>
</tbody>
</table>

Source: Author (2016)

3.8.2 Tests of Hypotheses

According to Kothari (2004), a research hypothesis is a predictive statement capable of being tested by scientific methods, that relates and independent variable to some dependent variable. Table 3.3 below summarizes the hypothesis tests of that were conducted to achieve the objectives of the study.
Table 3.3: Tests of Hypotheses

<table>
<thead>
<tr>
<th>STUDY OBJECTIVES</th>
<th>HYPOTHESES</th>
<th>STATISTICAL MODEL</th>
<th>THRESHOLD OF RESULTS’ INTERPRETATION (5 % Significance level)</th>
</tr>
</thead>
</table>
| To analyze the effect of agency banking on the financial performance of commercial banks | Ho1: Agency banking has no effect on commercial bank’s financial performance | $ROA_i = \alpha + \beta_1 AGBO_{i} + \beta_2 ELBO_{i} + u_i$                    | P-Value < 0.05  
(Accept $H_A$)  
P-Value > 0.05  
(Accept $H_0$) |
| To analyze the effect of electronic banking on the financial performance of commercial banks | Ho2: Electronic banking has no effect on bank’s financial performance        | $ROA_i = \alpha + \beta_1 AGBO_{i} + \beta_2 ELBO_{i} + u_i$                    | P-Value < 0.05  
(Accept $H_A$)  
P-Value > 0.05  
(Accept $H_0$) |
| To analyze the effect of mediating variable financial inclusion the financial performance of commercial banks | Ho3: Financial inclusion has no effect on financial performance of banks     | $ROA_i = \alpha + \beta_1 AGBO_{i} + \beta_2 ELBO_{i} + \beta_3 FI_{i} + u_i$  | P-Value < 0.05  
(Accept $H_A$)  
P-Value > 0.05  
(Accept $H_0$) |
| To determine the moderating effect of government policy on the relationship between branchless banking and financial performance of commercial banks in Kenya | Ho4: Government policy has no moderating effect on financial performance of banks | $ROA_i = \alpha + \beta_1 AGBO_{i} + \beta_2 ELBO_{i} + \beta_3 GP_{i} + u_i$  | P-Value < 0.05  
(Accept $H_A$)  
P-Value > 0.05  
(Accept $H_0$) |

Source: Author (2016)

3.8.3 Presentation of the Findings

Presentation of the results was done through tables, charts, graphs and statistical representation of the estimated models. Prior to presentation interpretation the findings was done to inform policy recommendations. Interpretation refers to the
task of drawing inferences from the collected facts after an analytical or experimental study (Kothari, 2004).

3.9 Ethical Considerations

To comply with ethical procedures during conducting research, the researcher obtained a research permit from the National Council for Science and Technology at the beginning of field work and obtained further clearances from the offices of the Nairobi County Commissioner and the Nairobi County Education Officer. The objectives of the research were clearly explained to the respondents and the researcher also ensured that participation in the research was voluntary. The questionnaires for data collection were directed to the bank managers who by the nature of their job had the capacity, authority and are also able to access the information required for the study. To ensure confidentiality of the bank information, the bank data was handled with strict confidentiality and the bank names were not disclosed at any point but the final data and the 42 banks were named as bank no 1, 2, 3 4 up to bank no 42. Additionally, to further enhance confidentiality the bank managers who responded to the questionnaire were not required to indicate their names on the questionnaire.
CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter presents the findings of the study on Branchless Banking and Financial Performance of Commercial Banks in Kenya. The chapter begins with a presentation and discussions on the profile of the respondent banks and the descriptive statistics. Then the results of the diagnostic tests were presented. The chapter then concludes with inferential tests results and discussions and a summary of the tests of hypothesis. The data analyzed herewith was gathered from both primary and secondary sources. A questionnaire was the main primary data collection instrument while the secondary data was extracted from the annual bank supervision reports published by Central Bank of Kenya.

For primary data, 42 questionnaires were dispatched to the Head Offices of the 42 licensed commercial banks in Kenya. 2 banks (Imperial Bank and Dubai Bank) were excluded from the study because they were placed under receivership during the period under study. Out of the 42 questionnaires that were dispatched, a total of 32 questionnaires were returned translating to a response rate of 76 percent. However only 23 banks had provided all the relevant data required for the inferential analysis. Hence the descriptive analysis was done on all the 32 banks but tests of hypothesis were done on the 23 banks which had all the data on branchless banking.
4.1.1 Reliability of the Research Instrument.

The reliability of the questionnaire used for the study was tested in the pilot test and also the main survey. The geometric mean statistical technique was used to average the several item scores and convert to a single composite measure for each variable. The pilot testing of the questionnaire was done through a sample size of 28 banks which recorded a cronbach alpha coefficient of 0.733. This was above the recommended coefficient of 0.7 (Field, 2009). The final cronbach alpha coefficient for the main survey was 0.764 for 32 valid responses received. The slight variation may be attributed the different sample sizes used between the pilot test and main survey. The questionnaire used for the study was therefore reliable since the main survey’s cronbach alpha was above 0.7. Below table presents the detailed analysis of the reliability statistics for the pilot test and the main survey.
Table 4.01: Reliability Statistics for the Research Instrument

<table>
<thead>
<tr>
<th>Item</th>
<th>Pilot Test</th>
<th>Main Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cronbach Alpha</td>
<td>0.733</td>
<td>0.764</td>
</tr>
<tr>
<td>Scale Statistics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>15.52</td>
<td>15.84</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>6.979</td>
<td>5.629</td>
</tr>
<tr>
<td>No. of Items</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Inter-item correlation between:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Branchless banking and financial performance</td>
<td>0.477</td>
<td>0.489</td>
</tr>
<tr>
<td>Branchless banking and financial inclusion</td>
<td>0.579</td>
<td>0.609</td>
</tr>
<tr>
<td>Financial inclusion and financial performance</td>
<td>0.493</td>
<td>0.491</td>
</tr>
<tr>
<td>Government policy and financial performance</td>
<td>0.424</td>
<td>0.459</td>
</tr>
<tr>
<td>Government policy and financial inclusion</td>
<td>0.553</td>
<td>0.599</td>
</tr>
<tr>
<td>Range</td>
<td>0.424-0.586</td>
<td>0.459-0.609</td>
</tr>
<tr>
<td>Corrected item-total correlation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Branchless Banking</td>
<td>0.773</td>
<td>0.791</td>
</tr>
<tr>
<td>Financial performance</td>
<td>0.408</td>
<td>0.441</td>
</tr>
<tr>
<td>Financial inclusion</td>
<td>0.603</td>
<td>0.621</td>
</tr>
<tr>
<td>Government Policy</td>
<td>0.489</td>
<td>0.505</td>
</tr>
<tr>
<td>Cronbach alpha if item is deleted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Branchless Banking</td>
<td>0.609</td>
<td>0.633</td>
</tr>
<tr>
<td>Financial performance</td>
<td>0.751</td>
<td>0.767</td>
</tr>
<tr>
<td>Financial inclusion</td>
<td>0.659</td>
<td>0.697</td>
</tr>
<tr>
<td>Government Policy</td>
<td>0.789</td>
<td>0.801</td>
</tr>
</tbody>
</table>

(Source: Survey data, 2016)

From the table 4.01 above, descriptive statistics (mean and standard deviation) and variable correlations were obtained to check the sanity of the research instrument used for the final study. The mean for the final survey was 15.84 with a standard deviation of 5.629. The inter-item correlations were 0.489, 0.601, 0.609, 0.491, 0.459 and 0.599. The Cronbach alpha coefficients if item is deleted were generally above the overall alpha for all the items. From the above data the scale adopted for the study was reliable.
4.2 Descriptive Statistics

This section presents the descriptive statistics for the study variables, Branchless banking, financial inclusion, government policy and financial performance of commercial banks. Descriptive statistics present summaries and discussions of the main characteristics of the study variables.

4.2.1 Agency Banking

This sub section presents the summary metrics of agency banking. Data was obtained through a questionnaire. The main focus of this variable was the amount of investment on agency banking. The results are presented through frequency table (table 4.02) below;

Table 4.02: Frequency Table of Agency Banking Characteristics

<table>
<thead>
<tr>
<th>Number of years since adoption of agency banking</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Year</td>
<td>2</td>
<td>6.3</td>
<td>6.3</td>
<td>6.3</td>
</tr>
<tr>
<td>2 Years</td>
<td>1</td>
<td>3.1</td>
<td>3.1</td>
<td>9.4</td>
</tr>
<tr>
<td>3 Years</td>
<td>4</td>
<td>12.5</td>
<td>12.5</td>
<td>21.9</td>
</tr>
<tr>
<td>5 Years</td>
<td>1</td>
<td>3.1</td>
<td>3.1</td>
<td>25.0</td>
</tr>
<tr>
<td>Not adopted</td>
<td>24</td>
<td>75.0</td>
<td>75.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

(Source; Survey data, 2016)

The frequency table in table 4.02 is a summary of the responses on agency banking adoption. Majority of the banks indicated that the average number of years since adoption of agency banking is 3.5 years implying that most of the banks adopted agency banking between year 2011 and 2012 (table 4.02). Further analysis also reveals that only 8 out of 32 banks (25 percent) had adopted agency banking by the end of financial year 2014. Table 4.03 below present the detailed frequency table and time series analysis of investment in agency banking over the 5 year period. The
data indicates that the average investment in agency banking at bank level has been increasing progressively over the years.

**Table 4.03: Average Investment in Agency Banking at Bank Level**

<table>
<thead>
<tr>
<th>Financial Year</th>
<th>Average Investment (Kes Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>1.09</td>
</tr>
<tr>
<td>2011</td>
<td>3.57</td>
</tr>
<tr>
<td>2012</td>
<td>5.36</td>
</tr>
<tr>
<td>2013</td>
<td>9.89</td>
</tr>
<tr>
<td>2014</td>
<td>11.80</td>
</tr>
</tbody>
</table>

(Source: Survey data, 2016)

Figure 4.1 is a graphical description of table 4.03 which indicates the average investment at bank level on agency banking.

![Figure 4.1: Trend Analysis of Average Investment in Agency Banking at Bank Level](image)

(Source: Survey data, 2016)

Figure 4.1 above presents the trend analysis of agency banking investment at bank level for the period 2010 to 2014. The trend analysis shows that agency banking investment has been on a steady rise over the years. The steady increase in the amount of investment in the industry may be attributed to the need to strengthen the
banking infrastructure and increase capacity to effectively deal with the new opportunities and challenges associated with agency banking channel.

4.2.2 Electronic Banking

Just like agency banking, electronic banking data was obtained through a questionnaire. The main focus of this variable was the amount of investment on electronic banking over the 5 year period. The data was collected through 4 questions in the first section of the research questionnaire in appendix III (section 2.1). Tables 4.04 present a frequency table of electronic banking characteristics.

<table>
<thead>
<tr>
<th>No of years since adoption of electronic banking</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Year</td>
<td>1</td>
<td>3.1</td>
<td>3.1</td>
<td>3.1</td>
</tr>
<tr>
<td>2 Years</td>
<td>3</td>
<td>9.4</td>
<td>9.4</td>
<td>12.5</td>
</tr>
<tr>
<td>3 Years</td>
<td>11</td>
<td>34.4</td>
<td>34.4</td>
<td>46.9</td>
</tr>
<tr>
<td>4 Years</td>
<td>6</td>
<td>18.8</td>
<td>18.8</td>
<td>65.6</td>
</tr>
<tr>
<td>5 Years</td>
<td>10</td>
<td>31.3</td>
<td>31.3</td>
<td>96.9</td>
</tr>
<tr>
<td>Not adopted</td>
<td>1</td>
<td>3.1</td>
<td>3.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

(Source: Survey data, 2016)

Analysis of data on table 4.04 reveals that at least one electronic banking channel has been adopted by 31 out of the 32 banks (97 percent). Majority of the banks (34 percent) have operated electronic banking channels for more than 3 years. 10 banks (31.3 percent) had operated electronic banking for more than 5 years. One bank (3.1 percent) had operated electronic banking for more than 1 year. Table 4.05 below present the trend analysis of electronic banking investment at bank level over the 5 year period.
Table 4.05: Trend Analysis of Electronic Banking Investment

<table>
<thead>
<tr>
<th>Year</th>
<th>Average Investment (Kes Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>40.59</td>
</tr>
<tr>
<td>2011</td>
<td>23.11</td>
</tr>
<tr>
<td>2012</td>
<td>67.41</td>
</tr>
<tr>
<td>2013</td>
<td>74.08</td>
</tr>
<tr>
<td>2014</td>
<td>108.99</td>
</tr>
<tr>
<td>Grand Total</td>
<td>62.83</td>
</tr>
</tbody>
</table>

(Source: Survey data, 2016)

Figure 4.2 is a graphical description of table 4.05 which indicates the average investment at bank level on agency banking. The data indicates that the average investment in electronic banking at bank level has been increasing progressively over the years.

![Trend Analysis of Electronic Banking Investment](image)

Figure 4.2: Trend Analysis of Electronic Banking Investment
Source: Survey data, 2016

Table 4.05 and figure 4.2 above present the trend analysis of electronic banking investment at bank level over the 5 year period. Analysis of banks data for the period 2010 to 2014 also shows that electronic banking investment has been on the increase over the period under analysis. The highest rate of increase in the amount of investment was in the period 2011 to 2012. This was the period when there was high adoption of mobile and internet banking across the industry. This fact is confirmed by table 4.04 above which indicates that the majority of the banks (34.4 percent) had adopted electronic banking for an average of 3 years by the end of 2014.
4.2.3 Financial Inclusion

In the study, the variable financial inclusion serves as the mediating variable. The indicators for financial inclusion were deposit market share, number of agency banking and electronic banking accounts and value of agency banking and electronic banking transactions over the financial years 2010 to 2014. The data for the variable financial inclusion was obtained from 2 main sources. Banks deposit market share data was collected through the data collection worksheet (appendix iii) and the data on number of agency banking and electronic banking accounts and value of agency banking and electronic banking transactions was obtained through the questionnaire (appendix ii). The questionnaire data was collected through questions 10, 11 and 12 of the research questionnaire. The data collected from the 2 sources explained above was merged into one consolidated spreadsheet prior to analysis. Table 4.06 present detailed descriptive analyses for the variable financial inclusion.

Table 4.06: Detailed Descriptive Analysis for Financial Inclusion

<table>
<thead>
<tr>
<th>Indicator</th>
<th>N</th>
<th>Range</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation (Kes Mil.)</th>
<th>Variance (Kes Mil.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deposits Market Share</td>
<td>32</td>
<td>13.20</td>
<td>0.00</td>
<td>13.20</td>
<td>2.05</td>
<td>3.53</td>
<td>12.48</td>
</tr>
<tr>
<td>Agency Banking Accounts (Mil.)</td>
<td>8</td>
<td>3.50</td>
<td>0.00</td>
<td>3.50</td>
<td>0.39</td>
<td>0.80</td>
<td>0.64</td>
</tr>
<tr>
<td>Agency Banking Value of Accounts (Kes Mil.)</td>
<td>8</td>
<td>746.00</td>
<td>0.00</td>
<td>746.00</td>
<td>151.63</td>
<td>250.81</td>
<td>62,906.42</td>
</tr>
<tr>
<td>Electronic Banking Accounts (Mil.)</td>
<td>31</td>
<td>5.50</td>
<td>0.00</td>
<td>5.50</td>
<td>0.52</td>
<td>1.24</td>
<td>1.53</td>
</tr>
<tr>
<td>Electronic Banking Value of Accounts (Kes Mil.)</td>
<td>31</td>
<td>1816.60</td>
<td>0.00</td>
<td>1816.60</td>
<td>297.22</td>
<td>458.57</td>
<td>210,283.91</td>
</tr>
</tbody>
</table>

(Source; Survey data, 2016)

Table 4.06 above presents the detailed descriptive analysis of the mediating variable financial inclusion. The summary above indicates that the adoption rate of electronic banking in the industry was higher than agency banking. By the end of financial year 2014, 31 out of 32 banks (97 percent of the banks) had adopted one form of
electronic banking as opposed to only 8 out of 32 banks (25 percent) who had adopted agency over the same period. Both agency and electronic banking transactions had a wide variability as indicated by their variances and standard deviations. Table 4.07 below indicates summary of agency and electronic banking accounts and value of transactions conducted through both agency and electronic banking over the study period.

Table 4.07: Summary of Agency and Electronic Banking Accounts and Transactions

<table>
<thead>
<tr>
<th>Year</th>
<th>Sum of agency banking accounts (Millions)</th>
<th>Sum of electronic banking accounts (Millions)</th>
<th>Sum of agency banking value of transactions (Kes Millions)</th>
<th>Sum of electronic banking value of transactions (Kes Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>0.32</td>
<td>3.91</td>
<td>54.70</td>
<td>3,285.60</td>
</tr>
<tr>
<td>2011</td>
<td>6.29</td>
<td>10.38</td>
<td>5,527.00</td>
<td>6,737.93</td>
</tr>
<tr>
<td>2012</td>
<td>5.61</td>
<td>16.95</td>
<td>5,060.80</td>
<td>12,740.05</td>
</tr>
<tr>
<td>2013</td>
<td>11.48</td>
<td>10.64</td>
<td>6,392.46</td>
<td>14,336.30</td>
</tr>
<tr>
<td>2014</td>
<td>9.37</td>
<td>18.44</td>
<td>1,300.01</td>
<td>15,591.51</td>
</tr>
</tbody>
</table>

(Source; Survey data, 2016)

Figure 4.3 below is a graphical description of table 4.07 which indicates summary of agency and electronic banking accounts. The data indicates that both the number of agency and electronic banking accounts and have been on an upward trend over the period under study.

Figure 4.3: Trend Analysis of Agency and Electronic Banking Accounts
Source: Survey data, 2016
The graph in figure 4.4 below is a representation of agency and electronic banking value of transactions. The data indicates that both agency and electronic banking transactions conducted during the period have been on an upward trend over the period under study that the members of the population who were previously excluded from the banking system are progressively being accommodated within the banking industry. Same increasing trend is repeated in the electronic banking accounts and value of transactions over the period under study. A key observation is that the average value of transactions conducted through electronic banking is higher than that of agency banking and the value of agency banking transactions was on the decreasing trend between 2013 and 2014.

![Graph showing trend analysis of agency and electronic banking value of transactions](image)

Figure 4.4: Trend Analysis of Agency and Electronic Banking Value of Transactions
(Source: Survey data, 2016)

**4.2.4 Government Policy**

Since 2007, several policy frameworks have been established to regulate branchless banking. In November 2009, Kenya amended the Banking Act to include provisions on financial institutions to use retail agents to provide banking services (CGAP,
The regulations prescribed how the banks would engage with banking agents and specifically how issues to do with security and AML/CTF will be addressed, the scope of products and services to be handled under this channel and customer protection (CGAP, 2010). The rapid growth in mobile money has brought some challenges to the industry hence the urgent need for an effective and robust legal and regulatory framework in the EAC (Nyaga, 2014). Nyaga (2014) further observed that mobile money transactions have also presented regulatory challenges that could potentially obstruct their potential benefits.

In this study, the main indicator for the moderating variable government policy was regulation of branchless banking channels. The variable was measured through the 5 point likert based questionnaire (Appendix II). 4 questions (question 6, 7, 8 and 9) were designed to measure the extent of branchless banking regulation on the various branchless banking channels, importance of the various forms of regulation of branchless banking, whether the current regulations by CBK have enabled my bank to maximize on the opportunities associated with branchless banking. Other questions sought to test the adequacy of the current regulation framework and opinion of its effectiveness in addressing the risks and opportunities associated with branchless banking. Table 4.08 presents the detailed descriptive statistics of the variable government policy.
Table 4.08: Detailed Descriptive Statistics on Government Policy

<table>
<thead>
<tr>
<th>Sub variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extent of branchless banking regulation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agency Banking</td>
<td>32</td>
<td>-</td>
<td>5</td>
<td>2.0938</td>
<td>1.8554</td>
</tr>
<tr>
<td>Electronic Banking</td>
<td>32</td>
<td>1</td>
<td>5</td>
<td>3.2500</td>
<td>0.9079</td>
</tr>
<tr>
<td>Aggregate</td>
<td>32</td>
<td></td>
<td></td>
<td>2.6719</td>
<td>1.3817</td>
</tr>
<tr>
<td>Forms of regulation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vetting</td>
<td>32</td>
<td>1</td>
<td>5</td>
<td>4.0000</td>
<td>1.0160</td>
</tr>
<tr>
<td>Monitoring</td>
<td>32</td>
<td>1</td>
<td>5</td>
<td>4.3125</td>
<td>0.8590</td>
</tr>
<tr>
<td>Customer due diligence</td>
<td>32</td>
<td>1</td>
<td>5</td>
<td>4.3125</td>
<td>0.8958</td>
</tr>
<tr>
<td>Licensing</td>
<td>32</td>
<td>1</td>
<td>5</td>
<td>3.7188</td>
<td>1.2504</td>
</tr>
<tr>
<td>Regulatory reporting</td>
<td>32</td>
<td>1</td>
<td>5</td>
<td>3.5938</td>
<td>1.2407</td>
</tr>
<tr>
<td>Aggregate</td>
<td>32</td>
<td></td>
<td></td>
<td>3.9875</td>
<td>1.0524</td>
</tr>
<tr>
<td>Adequacy and effectiveness of regulation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effectiveness of CBK regulation</td>
<td>32</td>
<td>1</td>
<td>5</td>
<td>3.6563</td>
<td>0.7874</td>
</tr>
<tr>
<td>Support of regulation to branchless banking</td>
<td>32</td>
<td>1</td>
<td>5</td>
<td>3.7813</td>
<td>0.6591</td>
</tr>
<tr>
<td>Adequacy to address the risks associated with branchless banking</td>
<td>32</td>
<td>1</td>
<td>5</td>
<td>3.5000</td>
<td>0.9158</td>
</tr>
<tr>
<td>Aggregate</td>
<td>32</td>
<td></td>
<td></td>
<td>3.6458</td>
<td>0.7874</td>
</tr>
</tbody>
</table>

Source; Survey data, 2016

Table 4.08 presents the summary of the responses to the questions on the 3 main themes on government policy. The questions concentrated on the extent of regulation, importance of the various forms of regulation and the ability of the various forms of government regulation in addressing the risks and opportunities associated with branchless banking. On the extent of branchless banking regulation the aggregated parameters are ($\mu = 2.6719$, $\sigma = 1.3817$), indicating a moderate extent of regulation on both agency banking and electronic banking activities. The aggregate parameters for importance of the various forms of regulation are ($\mu = 3.9875$, $\sigma = 1.0534$), implying that the majority of the respondents consider the various forms of regulation as important. However vetting and customer due diligence were considered of higher importance than the other forms of regulation.
On the ability of government policy to address the risks and opportunities of branchless banking, the aggregate values were \((\mu = 3.6458, \sigma = 0.7874)\). This implies that most of the respondents agree that government policy has been able to address the risks and opportunities associated with branchless banking. The sub variable ability of government policy in addressing the risks and opportunities of branchless banking had the least variability with standard deviation of 0.7874, while extent of branchless banking regulation had the highest variability with standard deviation of 1.817.

### 4.3.5 Financial Performance of Commercial Banks

The variable financial performance of commercial banks was the dependent variable in the study. The data for the indicators of financial performance of commercial banks was obtained from the annual bank supervision reports published by CBK and individual values for each bank for the 5 years period with the help of data collection worksheet (appendix iii). The main indicator for the variable was Return on Assets (ROA) which is the Proportion of total bank’s net profit as percentage of Total Assets. Five year average values for ROA were calculated at bank level and frequency tables were computed to summarize the results. Below are detailed descriptive analyses of the variable financial commercial banks. Table 4.9 below presents the frequency table of the financial performance of commercial banks for the period 2010 to 2014.
Table 4.09: Frequency Table of Financial Performance of Commercial Banks for the Study Period

<table>
<thead>
<tr>
<th>Average ROA</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 0.99 percent</td>
<td>5</td>
<td>15.6</td>
<td>15.6</td>
</tr>
<tr>
<td>1.00 to 1.99 percent</td>
<td>2</td>
<td>6.3</td>
<td>21.9</td>
</tr>
<tr>
<td>2.00 to 2.99 percent</td>
<td>5</td>
<td>15.6</td>
<td>37.5</td>
</tr>
<tr>
<td>3.00 to 3.99 percent</td>
<td>9</td>
<td>28.1</td>
<td>65.6</td>
</tr>
<tr>
<td>4.00 to 4.99 percent</td>
<td>6</td>
<td>18.8</td>
<td>84.4</td>
</tr>
<tr>
<td>Above 5.00 Percent</td>
<td>5</td>
<td>15.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

(Source; Survey data, 2016)

Table 4.09 above presents the analysis of the 5 year average ROA at industry level. Data is presented in form of frequency tables. The analysis reveals that despite most banks posting increased profitability year on year, critical analysis reveals mixed results on the average Return on Assets (ROA) for the period. The analysis of data indicates that 5 banks (15.6 percent) had a ROA of less than 0.99 percent and majority of the banks have the ROA range of between 4.00 to 4.99 percent. Only 5 banks (15.6 percent) had a ROA of more than 5 percent. Table 4.10 below presents a detailed analysis of the average ROA for in the study period.

Table 4.10: Average ROA in the Banking Industry for the Study Period

<table>
<thead>
<tr>
<th>Year</th>
<th>Average ROA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>3.70</td>
</tr>
<tr>
<td>2011</td>
<td>3.42</td>
</tr>
<tr>
<td>2012</td>
<td>2.93</td>
</tr>
<tr>
<td>2013</td>
<td>3.35</td>
</tr>
<tr>
<td>2014</td>
<td>2.96</td>
</tr>
<tr>
<td>Grand Total</td>
<td>3.27</td>
</tr>
</tbody>
</table>

(Source; Survey data, 2016)
Table 4.10 above presents the trend analysis of ROA in the banking industry in the period 2010 to 2014. The data indicates that Return on Assets (ROA) for the industry has been on a steady decline over the years indicating that the increase in investment is not generating earnings growth at industry level. This is an evidence of a progressive decrease in financial performance at industry level. Figure 4.5 below is a graphical representation of the average ROA for the study period which indicates that Return on Assets (ROA) for the industry has been on a steady decline over the years.

![Graph of ROA Trend Analysis](image)

Figure 4.5: Trend Analysis of ROA in the Banking Industry for the Study Period  
(Source; Survey data, 2016)

According to Brigham and Gapenski (1997) the main function of management is to increase and maintain shareholders wealth. Bank management therefore are supposed to operate in the best interest of shareholders by pursuing goals that are aimed at increasing the shareholder value. Since empirical results indicate a gradual decline in shareholder wealth across the industry, the bank management needs to devise policies and strategies and management actions to reverse the situation for the benefit of the shareholders. The theoretical implication to this is that since the financial industry is one of the key contributors to GDP, profitability of the industry is of paramount importance for the financial sector to carry out its financial

These findings are consistent with the Kenya Financial Sector Stability Report 2014 published by CBK. According to CBK (2015), the overall performance remains uneven among banks despite strong growth in profitability, assets base, return on assets and return on equity. There are glaring differences between the top 5 commercial banks from the bottom five commercial banks across the key performance indicators. In 2014, the bottom five banks had negative return on assets and return on equity compared to the top five banks, whose ratios were strong and positive (CBK, 2015). Panayiotis et.al (2008) recommends that a sound and profitable banking sector is better able to endure negative shocks and contribute to the stability of the financial system.

4.3.6 Summary of Descriptive Statistics

The summary statistics reported are mainly the minimum and maximum values of the variables, the mean values, variances, standard deviation, skewness and kurtosis of all the variables to the models. Summary statistics are presented in table 4.11 below
The table for summary statistics presents the summaries of the properties of the variables of interest. The financial performance ratios, return on assets has a minimum value of -4.8 percent and a maximum value of 10.40 percent and a mean value of 3.57 percent. In terms of skewness, ROA is negatively skewed meaning that it is skewed to the left in terms of its distribution. A closer look at kurtosis indicates that the ratio has a kurtosis value greater than 3.00 implying that it is non–normally distributed. Kurtosis is leptokurtosis meaning that it is fat tailed which is a typical characteristic of any financial data. A review of the other independent variables reveal that in terms of skewness, all the independent variables are positively skewed with kurtosis of greater than 3.0 implying that they evidence presence of fat tails.

The implication of wide dispersion of the dependent variable ROA to the banking industry is that the industry is heterogeneous in nature with mixed performance results over the period under study. A few banks have been posting impressive financial performance year on year while at the same time there are a few banks

---

Table 4.11 Summary Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Variance</th>
<th>Standard deviation</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>115</td>
<td>-4.8</td>
<td>10.4</td>
<td>3.561</td>
<td>4.495</td>
<td>2.120</td>
<td>(0.772)</td>
<td>5.596</td>
</tr>
<tr>
<td>Deposits Market Share</td>
<td>115</td>
<td>0</td>
<td>32.9</td>
<td>2.131</td>
<td>24.017</td>
<td>4.901</td>
<td>3.742</td>
<td>19.867</td>
</tr>
<tr>
<td>Agency Banking Investment</td>
<td>115</td>
<td>0</td>
<td>132.0</td>
<td>6.339</td>
<td>372.920</td>
<td>19.311</td>
<td>4.294</td>
<td>23.168</td>
</tr>
<tr>
<td>Electronic Banking Investment</td>
<td>115</td>
<td>0</td>
<td>750.0</td>
<td>62.835</td>
<td>15,199.120</td>
<td>123.285</td>
<td>2.963</td>
<td>13.103</td>
</tr>
<tr>
<td>Agency Banking Accounts</td>
<td>115</td>
<td>0</td>
<td>3.8</td>
<td>0.270</td>
<td>0.797</td>
<td>0.893</td>
<td>4.735</td>
<td>26.620</td>
</tr>
<tr>
<td>Electronic Banking Accounts</td>
<td>115</td>
<td>0</td>
<td>9.6</td>
<td>0.527</td>
<td>1.508</td>
<td>1.228</td>
<td>4.953</td>
<td>31.855</td>
</tr>
<tr>
<td>Agency Banking Value of Transactions</td>
<td>115</td>
<td>0</td>
<td>5.863.0</td>
<td>160.791</td>
<td>715,297.600</td>
<td>845.753</td>
<td>5.949</td>
<td>37.204</td>
</tr>
<tr>
<td>Electronic Banking Value of Transactions</td>
<td>115</td>
<td>0</td>
<td>2,593.1</td>
<td>458.186</td>
<td>344,837.100</td>
<td>587.228</td>
<td>1.311</td>
<td>3.815</td>
</tr>
</tbody>
</table>

(Source: Survey data, 2016)
which have been reporting negative ROA for the same period. A positive mean on ROA implies that most banks were generally profitable over the period under study. However there were a few banks that have been underperforming over the period as evidenced in the few negative values for ROA.

The implication of negative skewness of ROA is that most of the bank’s performance has been below the mean with a few outliers whose performance has been above the mean during the period under study. This is characteristic of the Kenyan banking industry where the large peer group banks have been displaying exceptional financial results while the middle and small peer group banks have been showing mixed results. For example in 2014, the bottom five commercial banks had negative return on assets as opposed to the top commercial five banks, whose financial ratios were strong and positive (CBK, 2015)

4.4 Diagnostic Tests

Diagnostic tests were carried out prior to inferential analysis. The relevant diagnostic tests for this study were test for multicollinearity, hausman specification test, unit root/ stationarity test and test for serial correlation. The results of the specific diagnostic tests are presented below.

4.4.1 Multicollinearity Tests

The study tested for multicollinearity through the generation of correlation matrix whose results are summarized in table 4.12 below. Correlation is considered to exist if the correlation coefficient between two explanatory variables is greater than 0.3 (Field, 2009). It is strongly recommended that careful consideration is made before including two variables with a correlation coefficient of 0.7 or more (Tabachnick &
Fidell, 1996). Table 4.12 shows the spearman’s correlation among the dependent and the independent variables

**Table 4.12 Correlation Matrix**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market Share</td>
<td>0.1418</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agency Banking Investment</td>
<td>-0.1279</td>
<td>-0.0017</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electronic Banking Investment</td>
<td>0.0185</td>
<td>-0.0335</td>
<td>0.0385</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agency Banking Accounts</td>
<td>0.1644</td>
<td>0.2428</td>
<td>0.0162</td>
<td>-0.0302</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electronic Banking Accounts</td>
<td>0.0243</td>
<td>-0.0309</td>
<td>-0.0321</td>
<td>-0.0334</td>
<td>-0.0368</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agency Banking Value of Transactions</td>
<td>0.0771</td>
<td>0.2792</td>
<td>0.0738</td>
<td>-0.0135</td>
<td>-0.0284</td>
<td>-0.0306</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Electronic Banking Value of Transactions</td>
<td>0.0276</td>
<td>0.2079</td>
<td>0.4733</td>
<td>0.0046</td>
<td>-0.0112</td>
<td>0.1519</td>
<td>0.803</td>
<td>1</td>
</tr>
</tbody>
</table>

(Source; Survey data, 2016)

Based on this threshold, the correlation coefficients in table 4.12 above indicate no strong correlation between individual dependent variables and the individual independent variables since most of the coefficients are below 0.7. The only strong correlation appears between agency banking value of transactions and electronic banking value of transaction with a correlation of 0.8030. Since these variables are indicators of the same variables, regression against each other will therefore yield biased and redundant estimates since they are highly correlated. As such based on this finding models for agency banking value of transactions and electronic banking value of transactions was dropped from the analysis.
4.4.2 Hausman Specification Test Results

This test is designed to detect violation of the assumption of random effects modelling that the explanatory variables are orthogonal to the unit effects. Hausman test statistic has a chi – square distribution with degrees of freedom equal to the number of regressors in the model. At 5% conventional significance level a P-value less than 5% implies that the two models are statistically different hence the null hypothesis can be rejected. This further implies that the random effect model is rejected in favour of the fixed effects model. For ease of presenting and interpreting the results for diagnostic tests, the following definition of the models was adopted.

Model 4.1 – model on amounts invested in agency and electronic banking. This model was used for the test of Ho1 and Ho2.

Model 4.2 - model on accounts opened through agency and electronic banking. This was used for the test of Ho3.

Model 4.3 - model on value of transactions under agency and electronic banking. This was used for test of Ho3.

Model 4.4- model on the extent of regulation, the importance of the various forms of regulation and the adequacy and effectiveness of regulation. These were used as indicators of the moderating variable government policy.

Table 4.13: Hausman Specification Test Results for Direct Relationship

<table>
<thead>
<tr>
<th>Model</th>
<th>Chi2 statistics</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Amount of investment</td>
<td>0.18</td>
<td>0.9134</td>
</tr>
<tr>
<td>2. No of accounts</td>
<td>0.53</td>
<td>0.7654</td>
</tr>
<tr>
<td>3. Value of transactions</td>
<td>0.06</td>
<td>0.9695</td>
</tr>
</tbody>
</table>

(Source: Survey data, 2016)
From the results, probability values of the respective chi 2 statistics obtained were used. In this test the null hypothesis stated that the differences in coefficients are not systematic against the alternative hypothesis that differences in coefficients are systematic. The coefficients refer to the coefficients for fixed effects and the random effects coefficients. The decision rule is that if the probabilities of the respective chi 2 statistics are less than 5 percent (equivalent to 0.05) then we accept the null hypothesis implying that the fixed effects model is adopted otherwise the random effects model is adopted if the contrary results are arrived at (Baltagi, 2011).

In this case, all the probability values for the respective chi 2 statistics are greater than 5 percent meaning that there is presence of endogeneity problem. Under the current specification, the initial hypothesis that the individual-level effects are adequately modeled by a fixed-effects model is rejected. This implies that the random effects models are more appropriate for this estimation than the fixed effects models. Therefore the random effects models were adopted in the study to test the research hypotheses.

### 4.4.2 Hausman Test Results for Branchless Banking Models with Mediating Variable Table 4.14: Hausman Test Results for Mediated Relationship

<table>
<thead>
<tr>
<th>Model</th>
<th>Chi2 statistics</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Amount of investment</td>
<td>1.97</td>
<td>0.580</td>
</tr>
<tr>
<td>2. No of accounts</td>
<td>1.77</td>
<td>0.6220</td>
</tr>
<tr>
<td>3. Value of transactions</td>
<td>1.72</td>
<td>0.6332</td>
</tr>
</tbody>
</table>

(Source: Survey data, 2016)

From the above results, all the probability values for the respective chi 2 statistics are greater than 5 percent meaning that there is presence of endogeneity problem meaning that the random effects model is adopted and the fixed effects model is
dropped. The conclusion to the hausman specification test is that the two tests above are in favour of random effects model as opposed to the fixed effects model. Therefore the random effects model was adopted to test the hypotheses.

4.4.3 Unit Root/ Stationarity Test

A common assumption in many time series techniques is that the data is stationary. Prior to estimating the empirical model, a test is done to establish whether the panels are stationary or not. To do this the study applied the Fisher – type unit root test. This test is based on the augmented Dickey-Fuller approach. In this case the study tests the null hypothesis that all panels contain unit roots against the alternative hypothesis that at least one panel is stationary.

Table 4.15: Results of Unit Root Test/ Stationarity Test

<table>
<thead>
<tr>
<th>Indicator</th>
<th>P statistic</th>
<th>Z statistic</th>
<th>L* statistic</th>
<th>Pm statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>238.4583 (0.0000)</td>
<td>-4.3674 (0.0000)</td>
<td>-10.627 (0.0000)</td>
<td>20.065 (0.0000)</td>
</tr>
<tr>
<td>ROE</td>
<td>340.6478 (0.000)</td>
<td>-4.9676 (0.000)</td>
<td>-15.895 (0.000)</td>
<td>30.719 (0.000)</td>
</tr>
<tr>
<td>Market Share</td>
<td>191.3140 (0.0000)</td>
<td>-2.2409 (0.0000)</td>
<td>-7.0854 (0.0000)</td>
<td>15.150 (0.000)</td>
</tr>
<tr>
<td>Agency Banking Investment</td>
<td>1.7271 (0.000)</td>
<td>3.9344 (0.000)</td>
<td>4.2481 (0.000)</td>
<td>-4.6158 (0.000)</td>
</tr>
<tr>
<td>Electronic Banking Investment</td>
<td>283.854 (0.000)</td>
<td>-8.3224 (0.000)</td>
<td>-20.129 (0.000)</td>
<td>24.798 (0.000)</td>
</tr>
<tr>
<td>Agency Banking Accounts</td>
<td>1.3377 (0.000)</td>
<td>0.0308 (0.000)</td>
<td>0.0290 (0.000)</td>
<td>-4.6564 (0.000)</td>
</tr>
<tr>
<td>Electronic Banking Accounts</td>
<td>8.9214 (0.000)</td>
<td>1.2538 (0.000)</td>
<td>1.2641 (0.000)</td>
<td>-3.8657 (0.000)</td>
</tr>
<tr>
<td>Agency Banking Value of Accounts</td>
<td>10.719 (0.000)</td>
<td>-1.6101 (0.000)</td>
<td>-1.5416 (0.000)</td>
<td>-3.6783 (0.000)</td>
</tr>
<tr>
<td>Electronic Banking Value of Accounts</td>
<td>88.792 (0.000)</td>
<td>1.3160 (0.000)</td>
<td>-1.4886 (0.000)</td>
<td>4.4613 (0.000)</td>
</tr>
</tbody>
</table>

Note: The p – values for the respective statistics are in brackets, P statistic refers to Inverse chi-squared statistic, Z statistic refers to the Inverse normal, L* statistic refers to the Inverse logit and Pm statistic refers to the Modified inv. chi-squared.
From the unit roots test results, the focus will be on the different statistics and their respective probability values. The basic objective of the test is to test the null hypothesis that $\varphi=1$ in:

$$y_t = \varphi y_{t-1} + u_t$$

against the one-sided alternative $\varphi<1$.

The following hypotheses are postulated for DF test:

Ho: series contains a unit root versus H1: series is stationary

(Dickey and Fuller 1979)

From the results the $p$ – values for the statistics are all 0 percent. Since the $p$ – values are less than 5 percent at 5 percent significance level (0.05) then the null hypothesis is rejected and the alternative hypothesis is accepted implying that there are no unit roots in the panels.

### 4.4.4 Serial Correlation Test for Models without the Mediating Variable

<table>
<thead>
<tr>
<th>Model</th>
<th>LR chi2</th>
<th>Prob&gt; chi2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Amount of investment</td>
<td>92.76</td>
<td>0.000</td>
</tr>
<tr>
<td>2. No of accounts</td>
<td>101.82</td>
<td>0.000</td>
</tr>
<tr>
<td>3. Value of transactions</td>
<td>106.83</td>
<td>0.000</td>
</tr>
</tbody>
</table>

(Source; Survey data, 2016)

The above results indicate that the panels are heteroscedastic hence serially correlated. This is because the probabilities of all the respective LR chi2 statistics are less than 0.05 (5 percent significance level). The conclusion is that the problem of heteroschasticity within the panels exists.
Table 4.17: Serial Correlation Test for Model with Mediating Variable

<table>
<thead>
<tr>
<th>Model</th>
<th>LR chi2</th>
<th>Prob&gt; chi2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of investment</td>
<td>92.56</td>
<td>0.000</td>
</tr>
<tr>
<td>No of accounts</td>
<td>102.09</td>
<td>0.000</td>
</tr>
<tr>
<td>Value of transactions</td>
<td>105.19</td>
<td>0.000</td>
</tr>
</tbody>
</table>

(Source; Survey data, 2016)

For the models including the mediating variable, similar results are arrived at as those for the models without the mediating variable. This implies that the problem of heteroschedasticity or serial correlation exists within the panels.

Given this scenario, in order to deal with the problem of serial correlation within the panels the models were estimated using the generalised least squares method. In addition, the models were also estimated using the robust standard errors. Since the robust standard errors have been corrected for heteroschasticity, then by estimating the model using the generalised least squares methods together with the robust standard errors the coefficients obtained will be free of serial correlation problem. In addition, the errors of the models will be free of serial correlation hence yielding unbiased estimates of the empirical model.

4.5 Tests of Hypotheses

The primary data was coded and both the primary and secondary data was consolidated into one worksheet to form a 5 year panel. Testing for the hypotheses was done as per the respective procedures described in chapter three of this thesis. Hypothesis one and two were tested using one-step simple regression analysis. Hypothesis three and four involved a four step approach in which several regression analyses were conducted and significance of the coefficients is examined at each
step. For hypotheses testing, the definition of the models used in the diagnostic tests was used. Amount of investment in agency and electronic banking by banks was used as indicators for agency and electronic banking respectively. Bank’s deposits market share, number of branchless banking accounts and value of branchless banking accounts were used as indicators of financial inclusion. The extent of regulation, importance of the various forms of regulation and adequacy and effectiveness of regulation of branchless banking were used as indicators for the variable government policy.

4.5.1 Test of Direct Relationships

In the test for direct relationships the following hypotheses were tested:

Ho1: Agency banking has a no effect on the financial performance of the Kenyan commercial banks.

Ho2: Electronic banking has no effect on the financial performance of commercial banks in Kenya.

The main indicator for branchless banking is the amount of investment on agency and electronic banking. Below are the regression results for the test of direct relationships.

| Model                   | Coef.  | Robust Std. Err. | z - stat | P>|t| |
|-------------------------|--------|------------------|----------|------|
| Agency Banking          | -0.0010| 0.00011          | -8.81    | 0.000|
| Electronic Banking      | -0.0010| 0.00008          | -12.64   | 0.000|

(Source; Survey data, 2016)

Table 4.18 above presents the results of a multiple regression model test of the effect of agency and electronic banking on financial performance measured by ROA. The
table presents the regression coefficients, the robust standard errors, the z-statistics and the p-values of the various regression models. The decision rule for the significance of the model is determined by the p-values for the respective variables. If p-value < 0.05 (5 percent), the null hypothesis is rejected and the alternative hypothesis is accepted. If p-value > 0.05 (5 percent) the null hypothesis is accepted and alternative hypothesis is rejected.

In the table above, the coefficients of the direct relationship between agency banking and electronic banking on ROA were both -0.0010. The z-statistics were -8.81 and -12.64 respectively. The p-values for both models were 0.0000. The specific details and results of the tests of hypotheses are explained below:

### 4.5.1 Test of Hypothesis One

Hypothesis one sought to analyze the effect of agency banking on the financial performance of commercial banks. The study hypothesized that agency banking has no effect on financial performance of commercial banks in Kenya. To achieve this, the random effects models were estimated using the generalized least square methods in addition to the robust standard errors hence they were free from serial correlation problem. Hypothesis test was done in order to determine the effect of agency banking on the bank performance. In the model, banks performance was measured by the Return on Assets (ROA). Table 4.19 below presents the regression results for objective one.
Model 1 estimated the effect of agency banking on commercial bank’s financial performance. The amount of investment on agency banking was used as an indicator of agency banking and bank’s ROA was used as indicator for financial performance of commercial banks. The regression results indicate that the amounts invested in agency banking negatively affect ROA by -0.001 respectively. The respective p-values are 0.000 implying that the effect is significant at 5 percent significance level. This implies that for every shilling invested in agency banking, ROA reduces by 0.001 units holding other factors constant. The conclusion for this hypothesis is that the agency banking has a significant negative effect on the financial performance of commercial banks. Hence the null hypothesis is rejected and alternative hypothesis is accepted.

The negative effect could be explained by the fact that the actual investment in agency banking in quantitative terms is an expense and as such it reduces the operating profit which eventually leads to the decline in ROA through reduced net profits. According to the theory of the firm, the objective of the management of any organisation is profit maximization. And for sustainable financial performance, fixed costs have to be managed. Banks are therefore progressively moving towards a business model where costs are relatively variable and are incurred only where there are sales involved. The descriptive analysis results on the variable had indicated that
the average investment in agency banking has been increasing exponentially year on year at bank level as banks seek to strengthen their IT infrastructure to maximise on the opportunities and at the same time minimise the risks associated with agency banking.

Another explanation to the negative effect is that since most banks are still in the investment phase of agency banking, there is a possibility that the sales revenue being generated from this channel at bank’s level are still below the breakeven point. The breakeven point is the sales volume required so that total revenues are equal to total costs (Horne & Wachowicz, 2001). At the banks level, there is a possibility that most banks are not generating sufficient volumes of agency banking transactions and the resultant revenues generated are still less than the investment made on agency banking. The amounts invested in agency banking infrastructure could be also be expensed at the financial years when these costs are incurred hence the negative effect on financial performance.

In comparison with previous studies on this variable, the current study finding makes a contribution towards financial management decision in the banking industry regarding branchless banking. Previous studies on agency banking have concentrated on other aspects of agency banking and none had specifically focused on the effect of agency banking on bank financial performance. For example Musau and Jagongo (2015) analyzed the utilization of agency banking on performance of selected banks in Nairobi County. Findings of the study point to the fact that liquidity availability in the outlets affected banks performance and also that agency infrastructure cost and security was a major influence to banks performance. However, the major shortcoming of the study by Musau and Jagongo is that it
focused on only 4 banks and the findings may not be generalized to the entire banking industry. Another shortcoming is that the scope of the study by Musau and Jagongo was on Nairobi County only and the results may not be generalizable to the entire country as the study was done on only one of the 47 counties and left out especially the rural counties where significant agency banking activities also take place.

Mwangi (2012) also found out that agent banking was highly useful as a diversification strategy among banks. However the study did not provide conclusive conclusions as it treated diversification as an end in itself yet this was a means to an end. The ultimate objective of any business venture is to make profits and the study would have been more complete if it provided a link of diversification strategy to financial performance. This study therefore helps to fill the gaps that were left out by related studies by specifically explaining the effect of agency banking on financial performance of commercial banks. Previous studies on agency banking have either concentrated on other aspects of agency banking or presented results which are inconclusive. Therefore, the study helps to complement the existing knowledge in financial management and specifically branchless banking, by explaining specifically the relationship between branchless banking and financial performance of commercial banks in Kenya.

4.5.2 Test of Hypothesis Two

Hypothesis two involved analyzing the effect of electronic banking on the financial performance of commercial banks in Kenya. The study hypothesized that electronic banking has no effect on financial performance of commercial banks in Kenya. The main indicator for electronic banking was the amount of investment on electronic
An analysis of electronic banking reveals similar results to those obtained in agency banking though some differences are evidenced as well as evidenced in table 4.2 below.

| Model                | Coef. | Robust Std. Err. | z - stat | P>|t| |
|----------------------|-------|------------------|----------|------|
| Electronic Banking   | -0.0010 | 0.00008          | -12.64  | 0.000 |
| Constant             | 3.471  | 0.50325          | 6.25     | 0.000 |

(Source; Survey data, 2016)

Regression results presented in table 4.20 above indicate that the amounts invested in electronic banking negatively impact ROA by -0.001. The p-value for this coefficient is 0.000 implying that the effect is significant at 5 percent significance level. Results indicate that for every shilling invested in electronic banking, ROA is reduced by 0.001 units respectively holding other factors constant. This could be explained by the fact that the actual investment in quantitative terms is an expense and as such it reduces the operating profit which eventually leads to the decline in the ROA through reduced net profits.

Just like in agency banking descriptive analysis on electronic banking had indicated that the average investment in electronic banking as been increasing exponentially year on year at bank level as bank seek to strengthen their IT infrastructure to maximise on the opportunities and at the same time minimise the risks associated with electronic banking. Another explanation to the negative effect is that since most banks are still in the investment phase of electronic banking, there is a possibility that the sales revenue being generated from this channel at bank’s level
are still below the breakeven point. The breakeven point is the sales volume required so that total revenues are equal to total costs (Horne & Wachowicz, 2001). At the banks level, there is a possibility that most banks are not generating sufficient volumes of electronic banking transactions and the resultant revenues generated are still less than the investment made on electronic banking. The amounts invested in electronic banking infrastructure could be also be expensed at the financial years when these costs are incurred hence the negative effect on financial performance.

The conclusion to this hypothesis is that electronic banking has a significant negative effect on financial performance of commercial banks in Kenya. This therefore implies that for hypothesis two, the null hypothesis which stated that electronic banking has no effect on financial performance of commercial banks is rejected and the alternative hypothesis is accepted. The conclusion for this hypothesis is that the electronic banking has a negative and significant effect on the financial performance of commercial banks.

These findings complements the findings of the study by Gakure (2013) which concluded that bank innovations have a moderate influence on the income of commercial banks in Kenya. However, conclusions by Gakure were based on only primary data limiting scope of generalization. Study findings provided more conclusive results than the study done by Okiro and Ndungu (2013) which utilized only 2 channels of branchless banking hence providing results which were not comprehensive. Okiro and Ndungu focused heavily on the utilization of mobile and internet banking and failed to link utilization of mobile and agency banking channels to the performance of financial institutions.
Ritho and Jagongo (2015) investigated the mobile banking effects on financial performance of Commercial Banks in Kenya and found that the prices of mobile banking services had a high positive influence on the financial performance of commercial banks in Kenya. Mobile banking helped to promote efficiency and assurance in the financial system thus winning public confidence. Ram et.al (2008) found that increasing use of the internet as an additional channel for marketing banking products and services had significantly improved the financial performance of community banks. The major shortcoming of the above two studies is that they considered the mobile banking and internet banking channels respectively in isolation. Both studies would have been more complete if other electronic banking channels which are complementary to internet banking and mobile banking were utilized in the study.

These findings contribute immensely towards the existing knowledge on electronic banking in financial management by filling in the gaps that were left by other related studies. Previous studies had presented results which were not comprehensive due to the piecemeal approaches used by the studies. These piecemeal studies on electronic banking limited the extent of generalization of the findings within the Kenyan context (Gakure, 2013; Okiro & Ndungu, 2013; Ritho & Jagongo, 2015). This study was more comprehensive as it incorporated most of the electronic banking channels used in the Kenyan banking industry (mobile banking, internet banking, and ATM and POS channels) and utilized both primary and secondary data in order to make more specific, informed and comprehensive conclusions on the effect of electronic banking on financial performance of commercial banks in Kenya.
4.5.3: Test of Hypothesis Three

Hypothesis three sought to analyze the mediating role of financial inclusion on the relationship between branchless banking and financial performance of commercial banks in Kenya. The study hypothesized that financial inclusion does not have a mediating effect on the relationship between branchless banking and financial performance of commercial banks in Kenya. The main indicator for mediating variable in this model is deposits market share, agency and electronic banking accounts and value of transactions. To obtain a single indicator for financial inclusion, a composite value of the 3 sub variables was obtained through a geometrical mean procedure (Vandesompele et al., 2002; Wu & Ye, 2009). A composite index for branchless banking was also obtained by computing a geometric mean of the two sub variables agency banking and electronic banking. To test for the mediating effect, the model proposed by Baron and Kenny (1986) was used. This involved a three step approach in which several regression analyses were conducted and significance of the coefficients examined at each step. The analysis was presented by each of the three steps for ROA.

Step 1. Branchless banking and financial performance before mediation
This involved regressing the composite index of branchless banking against commercial bank’s financial performance. The results are shown in table 4.21 below.

| Model           | Coef.  | Robust Std. Err. | z- stat | P>|t| |
|-----------------|--------|------------------|---------|------|
| Branchless Banking | 0.00004 | 0.000016 | 2.5 | 0.014 |
| Constant        | 3.54   | 0.20252          | 17.48   | 3.942 |

(Source; Survey data, 2016)
The results postulate the effect of branchless banking on bank performance. In the models, banks performance was measured by the return on assets (ROA). Regression results on the effect of branchless banking on financial performance of commercial banks indicate that the amounts invested in branchless banking positively impact the ROA by 0.00004 holding other factors constant. The p-values are 0.014 implying that the effect is significant at 5 percent significance level. This implies that branchless banking has a significant positive effect on the financial performance of commercial banks. The results indicate that when both agency and electronic banking were used together as a multichannel strategy, the effect on financial performance was positive and significant. This therefore implies that the two channels are complementary to each other and banks would benefit more from their branchless banking investment if they used a multichannel strategy as opposed to adoption of a single channel strategy. Combination of agency banking and electronic banking investment creates synergy which could be explained using the systems concepts of synergy where the whole is greater than the sum of its constituent parts.

**Step 2. Financial inclusion and financial performance**

This step involved regressing the mediating variable financial inclusion against the dependent variable of the study financial performance of commercial banks in Kenya. The results are presented in table 4.22 below.
Table 4.2: Financial Inclusion and Financial Performance

<table>
<thead>
<tr>
<th>Model</th>
<th>ROA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef.</td>
</tr>
<tr>
<td>Financial Inclusion</td>
<td>0.00017</td>
</tr>
<tr>
<td>Constant</td>
<td>3.450</td>
</tr>
</tbody>
</table>

(Source; Survey data, 2016)

The coefficients for ROA are 0.0009 and the p-value is 0.018. Since the p-value of ROA is less the 5 percent, this implies that the relationship between financial inclusion and ROA is significant at 5 percent significance level. These results therefore indicate that financial inclusion has positive effect on ROA and the effect of financial inclusion was found to be significant at 5 percent significance level. This implies that financial inclusion has positive and significant effect on financial performance. This could be explained by the fact that an increase in branchless banking accounts and transactions lead to increase in transaction incomes for the individual banks consequently leading to increase in financial performance. By including the effect of the mediating variable, the study then looked at the effects of agency banking and electronic banking following the introduction of the mediating variable.

**Step 3. Branchless Banking and Financial Performance after Mediation.**

During the 3rd step, the composite index for branchless banking was regressed against the dependent variable when the mediating variable was present. The results are summarised in table 4.23.

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Table 4.23: Branchless Banking and Financial Performance after Mediation.

| Model                          | Coef.    | Robust Std. Err. | z – stat | P>|t| |
|-------------------------------|----------|------------------|----------|-----|
| Branchless Banking            | 0.00003  | 0.00001          | 2.41     | 0.017 |
| Financial Inclusion           | 0.00016  | 0.00008          | 2.14     | 0.034 |
| Constant                      | 3.4415   | 0.2236           | 15.39    | 0.000 |

(Source; Survey data, 2016)

Table 4.23 above presents the regression results of the effect of branchless banking on financial performance of commercial banks after introduction of the mediating variable financial inclusion. Regression results on the relationship between agency banking and financial performance of commercial banks indicate that the amounts invested in branchless banking positively impact the ROA by 0.00003. The p-values are 0.017 and 0.034 for branchless banking and financial inclusion respectively implying that the effect is significant at 5 percent significance level. This implies that the mediation effect on the effect branchless banking and financial performance of commercial banks was positive and significant at 5 percent significance level.

Table 4.24: Summary of Regression Results for Hypothesis Three

<table>
<thead>
<tr>
<th>Parameter for dependent variable</th>
<th>Model 1 Independent Variable</th>
<th>Model 2 Mediator &amp; Dependent</th>
<th>Model 3 Independent, Mediator and Dependent</th>
<th>Change</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>βBranchless Banking</td>
<td>ROA</td>
<td>0.00004**</td>
<td>0.00003**</td>
<td>-0.00001</td>
<td>Partial mediation exist and is significant</td>
</tr>
<tr>
<td>β Financial Inclusion</td>
<td>ROA</td>
<td>0.00017*</td>
<td>0.00016**</td>
<td>-0.00001</td>
<td>Partial mediation exist and is significant</td>
</tr>
<tr>
<td>β Constant</td>
<td>ROA</td>
<td>3.54***</td>
<td>3.450**</td>
<td>3.4415**</td>
<td>-0.0985</td>
</tr>
</tbody>
</table>

Key ** significant at p<0.05  ***not significant at p>0.05

(Source; Survey data, 2016)
Table 4.24 summarises the differences in the regression results of branchless banking on financial performance before and after introduction of mediating variable. From the table 4.24 above, the differences in the regression results before and after introduction of mediating variable clearly suggest that the mediating variable financial inclusion had played an important role in the relationship between branchless banking and financial performance of commercial banks in Kenya. The analysis of the coefficients for branchless banking and ROA shows evidence of partial mediation and the effect is significant at 5 percent significance level. The above set of results therefore indicates that financial inclusion partially mediates the relationship between agency and electronic banking and financial performance of commercial banks in Kenya. This implies that hypothesis three which stated that financial inclusion has no mediating effect on the relationship between branchless banking and financial performance of commercial banks in Kenya was not supported. The conclusion was that the null hypothesis was rejected and alternative hypothesis was accepted.

The conclusion made by the findings on hypothesis three can be explained using a set of facts. Firstly the descriptive results presented the fact that both the number of accounts and agency banking transactions conducted during the period have been on an upward trajectory year on year implying that the members of the population who were previously excluded from the banking system are progressively being accommodated within the banking industry. With the introduction of branchless banking services in Kenya’s financial systems, inexpensive and convenient banking services continue to be provided to the large unbanked masses (Vutsengwa, et.al 2013). Secondly, according to a study conducted by Fin Access in 2009, financial
exclusion which refers to people without access to any form of financial services has declined from 38.4 percent in 2006 to 32.7 per cent of the population in 2009. This increase in the population that has been accommodated by the banking system has been the major driver to the relationship between branchless banking and financial performance of commercial banks in Kenya. The impact of branchless banking on financial inclusion indicates that branchless banking channels can work as a bridge between the institutions and the excluded (CBK, FSD 2013).

Thirdly, while in the past financial inclusion has been argued to have positive contribution to the economy through the banking industry, the argument has not been accompanied by empirical evidence to explain how financial inclusion contributes towards their development. Whereas in the test of direct relationship the effect of agency and electronic banking on financial performance showed a negative effect, when the mediating variable financial inclusion was introduced the strength of the relationship marginally declines but remains positive. Thus the findings point to the direction that the strength of the relationship between branchless banking and financial performance of commercial banks in Kenya depends on financial inclusion.

Lastly, regression results also indicated that when both agency and electronic banking were used together as a multichannel strategy, there was a significant positive effect. This therefore implies that the two channels are complementary to each other and banks would benefit more from their branchless banking investment if they used a multichannel strategy as opposed to adoption of a single channel strategy. Combination of agency banking and electronic banking investment creates
synergy which could be explained using the systems concepts of synergy where the whole is greater than the sum of its constituent parts.

4.5.4: Tests of Hypothesis Four

Hypothesis four aimed at establishing the moderating effect of government policy on the relationship between branchless banking and financial performance of commercial banks in Kenya. The main indicator for moderating variable in this model is government policy. To obtain a single indicator government policy, a composite value of the results of the 5 main questions used as indicators of government policy was obtained (Vandesompele et al., 2002; Wu & Ye, 2009). To test for the moderating effect, the model proposed by Baron and Kenny (1986) was used. This involved a three step approach in which several regression analyses were conducted and significance of the coefficients is examined at each step.

**Step 1. Branchless Banking and Financial Performance before Moderation**

This step involved regressing the composite index of branchless banking against the dependent variable financial performance of commercial banks before the moderator variable is introduced. The regression results are summarized in table 4.25 below.

| Model                  | ROA               | Coef. | Robust Std. Err. | z-stat | P>|t| |
|------------------------|-------------------|-------|------------------|--------|-----|
| Branchless Banking      |                   | 0.00004 | 0.000016 | 2.5    | 0.014 |
| Constant               |                   | 3.54  | 0.20252 | 17.48  | 3.942 |

(Source; Survey data, 2016)
Table 4.25 summarizes the regression results on the effect of branchless banking on financial performance of commercial banks before introduction of moderating variable government policy. Regression results on the effect of branchless banking on financial performance of commercial banks indicate that the amounts invested in branchless banking positively impact the ROA by 0.00004 holding other factors constant. The p-values are 0.014 implying that the effect is significant at 5 percent significance level. This implies that branchless banking has a positive and significant effect on the financial performance of commercial banks.

**Step 2. Government Policy and Financial Performance**

This second step involved regressing the composite index of government policy against the dependent variable financial performance of commercial banks. The regression results are summarized in table 4.26

| Model                     | Coef   | Robust Std. Err. | z - stat | P>|t| |
|---------------------------|--------|------------------|----------|-----|
| Government Policy         | -0.00031 | 0.00123         | -0.26    | 0.799 |
| Constant                  | 3.0929  | 0.70411         | 4.39     | 0.000 |

(Source: Survey data, 2016)

Table 4.26 above presents the summary of regression results for the effect of moderating variable government policy on financial performance of commercial banks. The regression coefficients for effect of government policy on ROA are -0.00031. The respective p-values are 0.799 implying that the effect is not significant at 5 percent significance level. This implies that the effect of government policy on
ROA is negative and insignificant at 5% significance level since the p-values are more than 5 percent (0.05).

**Step 3: Branchless Banking and Financial Performance after Moderation**

In this step the composite index for branchless banking was regressed against the dependent variable when the moderating variable was present. The results are summarised in table 4.27.

**Table 4.27: Branchless Banking and Financial Performance after Moderation**

| Model                  | Coef.      | Robust Std. Err. | z-stat | P>|t| |
|------------------------|------------|------------------|--------|-----|
| Branchless Banking     | 0.28336    | 0.25456          | 1.11   | 0.275 |
| Government Policy      | -0.00037   | 0.00110          | -0.34  | 0.735 |
| Constant               | 2.4300     | 0.9922           | 2.45   | 0.021 |

(Source; Survey data, 2016)

Regression results presented on table 4.27 summarizes the effect of agency and electronic banking investment on financial performance of commercial banks after moderation. The coefficients generated are 0.28336 for the effect of branchless banking on ROA. The respective p-values are 0.275 which is greater than 0.05 (5 percent). This implies that the relationship between branchless banking and financial performance is still insignificant at 5 percent significance level even after moderation. This implies that the effect of branchless banking on financial performance of commercial banks is still positive but insignificant at 5 percent significance level even after moderation.
### Step 4: Summary of Regression Results for Hypothesis Four
#### Table 4.28: Summary of Regression Results for Hypothesis Four

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Indicator for dependent variable</th>
<th>Model 1 Independent Variable</th>
<th>Model 2 Moderator &amp; Dependent</th>
<th>Model 3 Independent, Moderator and Dependent</th>
<th>Change</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>β/Branchless Banking</td>
<td>ROA</td>
<td>0.00004***</td>
<td></td>
<td>0.28336***</td>
<td>0.28332</td>
<td>Moderation exists but is not significant</td>
</tr>
<tr>
<td>β Government Policy</td>
<td>ROA</td>
<td>-0.0003***</td>
<td>-0.0037***</td>
<td>-0.00006</td>
<td></td>
<td></td>
</tr>
<tr>
<td>β Constant</td>
<td>ROA</td>
<td>3.54***</td>
<td>3.093**</td>
<td>2.43**</td>
<td>-1.11</td>
<td></td>
</tr>
</tbody>
</table>

Key **significant at p<0.05 ****not significant at p<0.05

(Source: Survey data, 2016)

The results of table 4.28 summarises the differences in the regression results of branchless banking on financial performance before and after introduction of moderating variable. Analysis of the change of the coefficients for the relationship between branchless banking and financial performance (ROA) indicate that the moderating variable government policy had played an important role in the relationship between branchless banking and financial performance of commercial banks in Kenya. The analysis of the coefficients for branchless banking and ROA after introduction of moderating variable government policy shows evidence of moderation but the effect is not significant at 5 percent significance level. The above results therefore indicate that government policy increases the strength of the relationship between branchless banking and financial performance of commercial banks in Kenya. Therefore hypothesis three which stated that government policy has no moderating effect on the relationship between branchless banking and financial performance of commercial banks in Kenya was not supported. The conclusion was that the null hypothesis was rejected and alternative hypothesis was accepted.
The findings and conclusions on hypothesis four can be explained on the basis of two points. Firstly, in the descriptive results most of the respondents agreed that government policy has been able to address the risks and opportunities associated with branchless banking. Secondly, previous studies have found that branchless banking faces numerous challenges which need to be addressed. Okiro and Ndungu (2013) observed that mobile banking faces various challenges among them being system delays by the mobile money transfer service providers, slow processing of transactions especially during the weekends, high transactions costs, daily limit on the amount of money that can be withdrawn and fraud. Musau and Jagongo (2015) also found out that agency infrastructure cost and security was a major influence to banks performance.

According to bank focused theory, branchless banking brought about serious concerns with the quality of experience, security of identity and transactions, reliability and accessibility of service and extent of personalization allowed (Kapoor, 2010). Financial institutions deal with these issues and concerns by providing a branchless banking service with an easy to use interface, made secure with the help of multi-factor authentication and other technology, capable of running uninterrupted 365 days a year (Kapoor, 2010). Regulation of branchless banking is of paramount importance in order to maximize on the opportunities and minimize the risks.

Panjwani (2011) concluded that despite being celebrated as one of the most promising solutions to financial inclusion in the world, today’s branchless banking systems seem to be unable to provide good security assurances to their beneficiaries.
Gutierrez and Singh (2013) concluded that a supporting regulatory framework is necessary in order to promote higher usage of mobile banking for the general population as well as for the unbanked population. Brigham and Gapenski (1997) observed that financial intermediaries have historically been heavily regulated with the primary purpose of this regulation to ensure the security of the institutions and thus to protect depositors.

However despite the five studies above emphasizing on the importance of regulation of branchless banking, they were inconclusive on the whether the government policy has been effective in regulating the branchless banking activities in Kenya. The findings of this study therefore provides the missing link and complements the previous studies done by testing the effect of regulation of branchless banking on financial performance of commercial banks. Results of the test of hypothesis four are not consistent with the results of descriptive analysis on government policy where most of the respondents agreed that government policy has been able to address the risks and opportunities associated with branchless banking.
4.5.5 Summary on Test of Hypotheses

Table 4.29 below summarizes the results of the hypothesis tests discussed above.

Table 4.29: Summary of the Results of Tests of Hypotheses

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Result</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ho1: Agency banking has no effect on commercial bank’s financial performance</td>
<td>Not supported. Null hypothesis was rejected</td>
<td>Agency banking has a negative but significant effect on commercial bank’s financial performance</td>
</tr>
<tr>
<td>Ho2: Electronic banking has no effect on bank’s financial performance</td>
<td>Not supported. Null hypothesis was rejected</td>
<td>Electronic banking has a negative but significant effect on commercial bank’s financial performance</td>
</tr>
<tr>
<td>Ho3: Financial inclusion has no mediating effect on the relationship between branchless banking and financial performance of banks</td>
<td>Not supported. Null hypothesis was rejected</td>
<td>Financial inclusion partially mediates the relationship between branchless banking and commercial bank’s financial performance</td>
</tr>
<tr>
<td>Ho4: Government policy has no moderating effect on the relationship between branchless banking and financial performance of commercial banks in Kenya</td>
<td>Not supported. Null hypothesis was rejected</td>
<td>Government policy partially moderates the relationship between branchless banking and financial performance of commercial banks in Kenya</td>
</tr>
</tbody>
</table>

(Source: Survey data, 2016)
CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary, conclusions, recommendations, limitations of the study and suggested areas for further research. The purpose of this study was to determine the effect of branchless banking on the financial performance of commercial banks in Kenya.

5.2 Summary of the Study

The study aimed at evaluating the effect of branchless banking on the financial performance of commercial banks in Kenya. The study tested the direct effect of branchless banking on financial performance of commercial banks in Kenya, the mediating effect of financial inclusion on the relationship between branchless banking and bank’s financial performance and also the moderating effect of government policy on the relationship between branchless banking and bank’s financial performance of commercial banks in Kenya.

The study adopted a positivist approach by use of quantitative and analytical methods to make conclusions and generalizations. The study adopted an exploratory non experimental research design. The census approach was adopted and the population of the study as the 42 licensed commercial banks in Kenya. 2 commercial banks (Dubai Bank Limited and Imperial Bank Limited) were placed under receivership during the study period and were therefore excluded from the study.
Both primary and secondary data was used to obtain at 5 year panel data for the period 2010 to 2014.

Secondary data was extracted from the CBK annual bank supervision reports and primary data was collected through 5 point likert based questionnaires. About 60 percent of the respondents were from large and medium peer group banks and 40 percent were from small peer group banks. About 3 quarters of the banks had been in operation for less than 50 years, one fifth of the banks have been in operation for between 51 and 100 years. Only 2 banks among the banks that responded had operated for more the 100 years. In terms of branch network, over 60 percent had less than 25 branches by end of financial year 2014. 22 percent had between 26 and 50 branches. 6.2 percent had between 76 and 100 banks and 9.4 percent of the banks had over 100 branches.

5.2.1 Summary of Descriptive Findings

On the variable agency banking, the study observed that the mean number of years since adoption of agency banking was 3.5 years implying that majority of the banks had adopted agency banking between financial year 2011 and 2012. The average investment by each bank per year on agency banking was 18.5m. Average number of accounts opened through agency banking by each bank in 1 year is 1 million accounts. Average value transacted through agency banking by each bank per year was 380 million. Analysis of the amount of investment on both agency and electronic banking shows that the amount of investment has been on the increase year on year as banks try to maximize on the opportunities associated with
branchless banking and also in managing the risks associated with branchless banking.

Analysis of variable financial inclusion reveals the fact that both agency and electronic banking accounts and amounts transacted through these two channels have been on upward trend. The number of accounts and agency banking transactions conducted during the period has been on an upward trajectory year on year implying that the members of the population who were previously excluded from the banking system are progressively being accommodated within the banking industry. The variable government policy specifically on the extent of branchless banking regulation the analysis indicates a moderate extent of regulation on both agency banking and electronic banking activities. On the importance of the various forms of regulation, majority of the respondents consider the various forms of regulation as important. However vetting and customer due diligence were considered of higher importance than the other forms of regulation. On the ability of government policy in addressing the risks and opportunities of branchless banking, most of the respondents agree that government policy has been able to address the risks and opportunities associated with branchless banking.

5.2.2 Summary of Objective One

Objective one sought to analyze the effect of agency banking on the financial performance of commercial banks. Agency banking was measured by the actual amounts invested in by the banks in the agency banking model. The study hypothesized that agency banking has no effect on the financial performance of commercial banks in Kenya. The findings indicate that the amounts invested in agency banking had a negative but significant effect on financial performance of
commercial banks in Kenya. This could be explained by the fact that the actual investment in quantitative terms is an expense and as such it reduces the operating profit which eventually leads to the decline in the ROA.

The conclusion to this hypothesis is that agency banking has negative but significant effect on financial performance of commercial banks in Kenya. This therefore implies that for hypothesis one, the null hypothesis which stated that agency banking has no effect on financial performance of commercial banks is rejected and the alternative hypothesis is accepted. Previous studies on agency banking have either concentrated on other aspects of agency banking or presented results which are inconclusive. Therefore, the study helps to complement the existing knowledge in financial management and specifically branchless banking, by explaining specifically the relationship between branchless banking and financial performance of commercial banks in Kenya.

5.2.3 Summary of Objective Two

Objective two involved analyzing the effect of electronic banking on the financial performance of commercial banks in Kenya. Just like agency banking, electronic banking was measured by the amount of investment in electronic banking model. The study hypothesized that electronic banking has no effect on the financial performance of commercial banks in Kenya. The findings indicated that the amounts invested in electronic banking had a negative but significant effect on financial performance of commercial banks. The conclusion to this hypothesis is that electronic banking has a negative but significant effect on the financial performance of commercial banks in Kenya. This therefore implies that for hypothesis two, the null hypothesis which stated that electronic banking has no effect on financial
performance of commercial banks is rejected and the alternative hypothesis is accepted. With respect to the research gaps that underpinned this study, the findings of objective two contribute immensely towards the existing knowledge on electronic banking in financial management by filling in the gaps that were left by other related studies.

5.2.4 Summary of Objective Three

Objective three sought to analyze the mediating effect of the variable financial inclusion the financial performance of commercial banks. The study hypothesized that financial inclusion has no mediating effect on the financial performance of commercial banks in Kenya. The main indicators for mediating variable in this model were deposits market share and branchless banking accounts and value of transactions. To test for the mediating effect, a model proposed by Baron and Kenny (1986) was used. This involved a four step approach in which several regression analyses were conducted and significance of the coefficients is examined at each step. The results indicate that financial inclusion partially mediates the relationship between branchless banking and financial performance of commercial banks in Kenya and the effect is significant at 5 percent significance level. This implies that hypothesis three which stated that financial inclusion has no mediating effect on the relationship between branchless banking and financial performance of commercial banks in Kenya was not supported. The null hypothesis was therefore rejected and alternative hypothesis accepted.
5.2.5 Summary of Objective Four

Objective four sought to determine the moderating effect of government policy on the relationship between branchless banking and financial performance of commercial banks in Kenya. The study hypothesized that government policy has no moderating effect on the relationship between branchless banking and financial performance of commercial banks in Kenya. The inferential statistics were based on the model developed by Baron and Kenny (1986) which involved a four step approach in which several regression analyses were conducted and significance of the coefficients is examined at each step. Regression results indicate that government policy partially moderates the relationship between branchless banking and financial performance of commercial banks.

The implication of this is that the null hypothesis which stated that government policy has no moderating effect on the relationship between branchless banking and financial performance of commercial banks in Kenya was rejected and alternative hypothesis accepted. The policy implication to this is that the current policies on branchless banking are effective in regulating the banking industry as far as branchless banking movement is concerned. These findings are consistent with descriptive results where most of the respondents agreed that government policy has been able to address the risks and opportunities associated with branchless banking.

5.3 Conclusions

The study aimed at evaluating the effect of branchless banking on the financial performance of commercial banks in Kenya. From the research findings and the explanations offered, the study makes four major conclusions. Firstly, the study
found out that agency banking has a significant negative effect on the financial performance of commercial banks in Kenya. Secondly, the study also concludes that electronic banking has a significant negative effect on the financial performance of commercial banks. The study observed that when agency and electronic were used in isolation, there was a significant negative effect on financial performance of commercial banks in Kenya. However when both agency and electronic banking were used together as a multichannel strategy, the effect on financial performance was positive and significant. This therefore implies that the two channels are complementary to each other and banks would benefit more from their branchless banking investment if they used a multichannel strategy as opposed to adoption of a single channel strategy. Combination of agency banking and electronic banking creates synergy which could be explained using the systems concepts of synergy where the whole is greater than the sum of its constituent parts.

The third conclusion is that financial inclusion partially mediates the relationship between branchless banking and financial performance of commercial banks in Kenya. Study findings point to the direction that the strength of the relationship between branchless banking and financial performance of commercial banks in Kenya depends on financial inclusion. Lastly, the study concludes government policy partially moderates the relationship between branchless banking and financial performance of commercial banks in Kenya. Descriptive analysis results also indicate that regulation of branchless banking activities is important and government policy has been able to address the risks and opportunities associated with branchless banking.
5.4 Contribution of the Study

The findings of the current study make several contributions to financial management in general and commercial banking management in particular. Firstly, the empirical findings of this research have clearly explained the effect of agency and electronic banking on financial performance of commercial banks. Secondly, the study observed that when both agency and electronic banking were used together as a multichannel strategy, the effect on financial performance was a significant positive effect, on the other hand when they were used in isolation; the effect on the financial performance of commercial banks was negative. The study therefore complements the traditional financial management theories by incorporating the systems concept of synergy in explaining the effect of branchless banking and finance performance of commercial banks. In this study, the traditional financial management theories have been complimented by the theories in management underpinning strategic decisions in organizations. Thirdly, while in the past financial inclusion has been argued to have positive contribution to the economy through the banking industry, the argument has not been accompanied by empirical evidence to explain how financial inclusion contributes towards their development. Thus the findings point to the direction that the strength of the relationship between branchless banking and financial performance of commercial banks in Kenya depends on financial inclusion. Lastly the findings of this study provide the missing link and complement the previous studies done specifically testing the effect of regulation of branchless banking on financial performance of commercial banks. Previous studies on branchless banking have had presented results which are piecemeal and inconclusive. Therefore, the study helps to complement the existing
knowledge in financial management and specifically branchless banking, by explaining specifically the relationship between branchless banking and financial performance of commercial banks in Kenya.

5.5 **Recommendations for Policy**

From the study findings and conclusions, the study makes several recommendations. Firstly, commercial banks should adopt agency and electronic banking as a multichannel strategy as opposed to single channel strategy for positive returns on financial performance. This is because there is synergy when these two channels are adopted together as the two channels are complementary to each other. Secondly, study findings point to the direction that the strength of the relationship between branchless banking and financial performance of commercial banks in Kenya depends on financial inclusion. Therefore the government should come up with policies to foster financial inclusion within the banking industry in order for the industry to achieve maximum returns from branchless banking. Lastly, the government should review the policies around branchless banking in order to make them more effective in addressing the opportunities and risks associated with branchless banking. In order to promote adoption and utilization of branchless banking channels, the government should consider offering tax incentives on the electronic gadgets used in the branchless banking in order to make them more affordable.

5.6 **Limitations and Areas for further Research**

The study faced a number of limitations. Firstly, due to data confidentiality reasons the commercial banks were reluctant to share their branchless banking data. As a
result primary data collection was very slow and a lot of follow up was necessary in order to ensure they are returned within the agreed cutoff time. Secondly, the scope of the study was all the commercial banks in Kenya. Therefore the study should be not be generalized to other financial institutions like the insurance companies, microfinance institutions and Savings & Credit Cooperatives (SACCOs) since their business context, costs and revenue drivers are different from commercial banks.

Thirdly, the study did not cover exhaustively all the variables that influence the relationship between branchless banking and financial performance hence the outcome of the study is limited in this sense. Fourthly the study only employed multiple linear regression analysis for statistical analysis of the data and which is one of the tools used for statistical analysis. Other statistical methods like Data Envelopment Analysis and structural equation modeling (SEM) would yield different results. Lastly, the study was conducted on the commercial banks in Kenya whose context is different from the other countries. The results should therefore not be generalized to other countries whose geographical setting is different from Kenya.

The study recommends that a similar study could be conducted on other non banking financial institutions like Microfinance institutions and SACCOs as these also heavily utilize some of the branchless banking channels in their distribution network. Secondly, a study could be done to determine the effect of electronic banking on the cost efficiency of commercial banks in Kenya. Thirdly, for the purpose of this study, electronic banking combined mobile banking, internet banking, ATMs and POS channels as one independent variable. A study could be done to analyze the effect of the individual components of electronic banking as
separate variables to determine their individual and specific effects on financial performance of commercial banks. Lastly, a study could be done to analyze the effect of bank innovations on customer experience and loyalty.
REFERENCES


European Investment Bank (2013). *Banking in sub-Saharan Africa, Challenges and Opportunities*. EIB’s Economics Department, 2013


Rosen Theresa Von (2013). Branchless Banking in Kenya: Does Mobile Banking and Agent Banking have the potential to lift the welfare of low-income individuals? Lund University


State Bank of Pakistan (2011). *Branchless Banking Regulations for Financial Institutions Desirous To Undertake Branchless Banking.* Banking Policy & Regulations Department, June 20, 2011


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APPENDICES

Appendix I: Letter of introduction

GIFT KIMONGE DZOMBO
KENYATTA UNIVERSITY
P.O.BOX 43844-00100
NAIROBI KENYA

THE MANAGER

.................................................................BANK

Dear Sir or Madam:

REF: LETTER OF INTRODUCTION

My name is Gift Kimonge Dzombo. I’m a postgraduate student at Kenyatta University Business School. I intend to conduct a study titled “branchless banking and financial performance of commercial banks in Kenya”. I humbly request for information on branchless banking channels operated by you bank. I would appreciate your assistance on the responses on the questions contained in the questionnaire in order to achieve the objectives of this research.

The information requested is purely for academic purposes and will be treated with strict confidentiality and for your comfort the name of your bank will not be disclosed at any point.

Thanks in advance for your cooperation.

Sincerely yours,

GIFT KIMONGE
Appendix II: Research Questionnaire

SECTION 1: BACKGROUND INFORMATION

Name of Bank…………………………………………………..

1. Which year was the bank incorporated in Kenya?

2. Number of Branches in Kenya in the last 5 years (Please tick in the most appropriate option)

<table>
<thead>
<tr>
<th>No. of branches in Kenya</th>
<th>Year</th>
<th>No. of branches</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.</td>
<td>2010</td>
</tr>
<tr>
<td></td>
<td>2.</td>
<td>2011</td>
</tr>
<tr>
<td></td>
<td>3.</td>
<td>2012</td>
</tr>
<tr>
<td></td>
<td>4.</td>
<td>2013</td>
</tr>
<tr>
<td></td>
<td>5.</td>
<td>2014</td>
</tr>
</tbody>
</table>

3. Job Title (Optional)…………………………………

4. Position in Employment (Please tick)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Senior Management</td>
</tr>
<tr>
<td>2.</td>
<td>Middle Management</td>
</tr>
<tr>
<td>3.</td>
<td>Junior Management</td>
</tr>
</tbody>
</table>
SECTION 2

2.1 Branchless Banking

1. Which branchless banking channel(s) has your bank adopted? *(Please tick against the most appropriate option. You can choose more than one answer)*

   a. ATM ( )
   b. Agency Banking ( )
   c. Mobile banking ( )
   d. Online/Internet Banking ( )
   e. POS–Terminals ( )

2. In which year was the branchless banking channel(s) in (1) above adopted by your bank? *(Please tick against the most appropriate option)*

<table>
<thead>
<tr>
<th>Channel</th>
<th>Year of adoption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agency Banking</td>
<td></td>
</tr>
<tr>
<td>Mobile banking</td>
<td></td>
</tr>
<tr>
<td>Internet banking</td>
<td></td>
</tr>
<tr>
<td>ATM banking</td>
<td></td>
</tr>
<tr>
<td>POS channels</td>
<td></td>
</tr>
</tbody>
</table>

3. Please indicate the approximate value (in Kes Millions) the amount of investment in the branchless banking channels operated by your bank in each of the years below? *(Please tick against the most appropriate option)*

<table>
<thead>
<tr>
<th>Financial Year</th>
<th>Approximate Investment in Kes Millions on:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agency Banking</td>
</tr>
<tr>
<td>2010</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td></td>
</tr>
</tbody>
</table>
4. On an annual assessment, what is the approximate amount (in Kes Millions) of revenue generated from the branchless banking channels operated by your bank in each of the years indicated? Please tick against the most appropriate option.

<table>
<thead>
<tr>
<th>Financial Year</th>
<th>Agency Banking</th>
<th>Mobile Banking</th>
<th>Online Banking</th>
<th>ATMs</th>
<th>POS Channels</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td></td>
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<td>2012</td>
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<td>2013</td>
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<td></td>
</tr>
<tr>
<td>2014</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.2 Government Policy

5. In the last 5 years, to what extent is each of the branchless banking channels below regulated by the Central Bank of Kenya? (i.e. 1=not at all, 2=slightly, 3=moderate extent, 4=high extent, 5=very high extent). Please tick against the most appropriate option.

<table>
<thead>
<tr>
<th>Channel</th>
<th>Extent(1,2,3,4,5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATM</td>
<td></td>
</tr>
<tr>
<td>Agency Banking</td>
<td></td>
</tr>
<tr>
<td>Mobile Banking</td>
<td></td>
</tr>
<tr>
<td>Online/Internet banking</td>
<td></td>
</tr>
<tr>
<td>POS Terminals</td>
<td></td>
</tr>
</tbody>
</table>

6. In the last 5 years, to what extent did your bank consider the importance of each of the following forms of regulation relevant to branchless banking? (i.e. 1=not important 2=slightly Important, 3=fairly important, 4=important, 5=very important) Please tick against the most appropriate option.

| Vetting of third party Agency and mobile banking agents/outlets |
| Monitoring and supervision of branchless banking activities and transactions |
| Customer due diligence and identification before conducting branchless transaction |
| Licensing of banks before adoption of branchless banking |
| Regulatory reporting of branchless banking metrics to CBK |
Please indicate your level of agreement to the statements below;

7. In the last 5 years, the regulations by CBK have enabled my bank to maximize on the opportunities associated with branchless banking? Please tick against the most appropriate option.

1. Strongly disagree
2. Disagree
3. Indifferent
4. Agree
5. Strongly agree

8. In the last 5 years, the central bank regulations on branchless banking had supported the development of branchless banking channels in this bank? Please tick against the most appropriate option.

1. Strongly disagree
2. Disagree
3. Indifferent
4. Agree
5. Strongly agree

9. In the last 5 years, there has been adequate legislation in Kenyan banking industry to address the risks associated with branchless banking? Please tick against the most appropriate option.

1. Strongly disagree
2. Disagree
3. Indifferent
4. Agree
5. Strongly agree
2.3 Financial inclusion

10. What was the approximate number of new bank accounts opened through branchless banking distribution channels operated by your bank? Please tick against the most appropriate option in the table below.

<table>
<thead>
<tr>
<th>Financial Year</th>
<th>Agency Banking</th>
<th>Mobile Banking</th>
<th>Online Banking</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td></td>
<td></td>
<td></td>
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<td>2012</td>
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<td></td>
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<tr>
<td>2013</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11. What was the approximate annual value of transactions (in Kes’ Millions) conducted through branchless banking channels operated by your bank. Please tick against the most appropriate option in the table below.

<table>
<thead>
<tr>
<th>Financial Year</th>
<th>Agency Banking</th>
<th>Mobile Banking</th>
<th>Online Banking</th>
<th>ATMs</th>
<th>POS Channels</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td></td>
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<td>2012</td>
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<tr>
<td>2013</td>
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</tr>
<tr>
<td>2014</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Thank You for your time
### Appendix III: Document review guide, data collection worksheet

<table>
<thead>
<tr>
<th>Periods, Bank Nos</th>
<th>ROA (%)</th>
<th>ROE (%)</th>
<th>Deposits Market share (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Year 2010</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bank Nos 1-44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Year 2011</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bank Nos 1-44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Year 2012</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bank No 1-44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Year 2013</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bank No 1-44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Year 2014</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bank No 1-44</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Where Bank rows 1-44 will have records for the 44 respective banks. Total number of observations in the panel = 44 banks * 5 years = 220 observations.
Appendix IV: List of Population

1. ABC Bank (Kenya)
2. Bank of Africa
3. Bank of Baroda
4. Bank of India
5. Barclays Bank Kenya
6. Cifc Stanbic Holdings
7. Chase Bank Kenya
8. Citibank
9. Commercial Bank of Africa
10. Consolidated Bank of Kenya
11. Cooperative Bank of Kenya
12. Credit Bank
14. Diamond Trust Bank
15. Dubai Bank Kenya*
16. Ecobank Kenya
17. Equatorial Commercial Bank
18. Equity Bank
19. Family Bank
20. Fidelity Commercial Bank Limited
21. First Community Bank
22. Giro Commercial Bank
23. Guaranty Trust Bank Kenya
24. Guardian Bank
25. Gulf African Bank
26. Habib Bank
27. Habib Bank AG Zurich
28. Housing Finance Company of Kenya
29. I&M Bank
30. Imperial Bank Kenya*
31. Jamii Bora Bank
32. Kenya Commercial Bank
33. K-Rep Bank
34. Middle East Bank Kenya
35. National Bank of Kenya
36. NIC Bank
37. Oriental Commercial Bank
38. Paramount Universal Bank
39. Prime Bank (Kenya)
40. SMEP Microfinance Bank
41. Standard Chartered Kenya
42. Trans National Bank Kenya
43. United Bank for Africa
44. Victoria Commercial Bank

*These banks were placed under receivership when the research was in progress.

Source; CBK Website
Appendix V: Final data used for statistical analysis
(Where INVESTM. = INVESTMENT, ELECTR. = ELECTRONIC, TRANS. = TRANSACTIONS)

<table>
<thead>
<tr>
<th>Year</th>
<th>Bank ID</th>
<th>ROA</th>
<th>ROE</th>
<th>DEPOSITS MARKET SHARE</th>
<th>AGENCY BANKING INVESTM. (KES Mil)</th>
<th>ELECTR. BANKING INVESTM. (KES Mil)</th>
<th>AGENCY BANKING ACCOUNTS (000's)</th>
<th>ELECTR. BANKING ACCOUNTS (000's)</th>
<th>AGENCY BANKING VALUE OF TRANS. (Mil)</th>
<th>ELECTR. BANKING VALUE OF TRANS. (Mil)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>1</td>
<td>4.67</td>
<td>29.46</td>
<td>0.12</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>2011</td>
<td>1</td>
<td>4.12</td>
<td>30.28</td>
<td>0.1</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td>2012</td>
<td>1</td>
<td>2.9</td>
<td>26.4</td>
<td>0.12</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>2013</td>
<td>1</td>
<td>2.9</td>
<td>23.6</td>
<td>0.11</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>2014</td>
<td>1</td>
<td>1.49</td>
<td>12.1</td>
<td>0.11</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>2010</td>
<td>2</td>
<td>5.04</td>
<td>35.94</td>
<td>0.1</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>170.00</td>
<td>170.00</td>
</tr>
<tr>
<td>2011</td>
<td>2</td>
<td>4.18</td>
<td>28.87</td>
<td>0.1</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>167.00</td>
<td>167.00</td>
</tr>
<tr>
<td>2012</td>
<td>2</td>
<td>2.4</td>
<td>14.9</td>
<td>0.09</td>
<td>0.00</td>
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<td>2</td>
<td>4.1</td>
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<td>0.00</td>
<td>0.00</td>
<td>75.00</td>
<td>75.00</td>
</tr>
<tr>
<td>2014</td>
<td>2</td>
<td>3.74</td>
<td>21.1</td>
<td>0.06</td>
<td>0.00</td>
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<td>0.00</td>
<td>0.00</td>
<td>50.00</td>
<td>50.00</td>
</tr>
<tr>
<td>2010</td>
<td>3</td>
<td>6.24</td>
<td>34.25</td>
<td>7.26</td>
<td>0.00</td>
<td>304.00</td>
<td>0.00</td>
<td>0.00</td>
<td>170.00</td>
<td>170.00</td>
</tr>
<tr>
<td>2011</td>
<td>3</td>
<td>7.18</td>
<td>41.11</td>
<td>7.2</td>
<td>0.00</td>
<td>244.80</td>
<td>0.00</td>
<td>179.00</td>
<td>0.00</td>
<td>179.00</td>
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<td>2012</td>
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<td>7</td>
<td>44</td>
<td>7.15</td>
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<td>248.80</td>
<td>0.00</td>
<td>201.00</td>
<td>0.00</td>
<td>201.00</td>
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<td>3</td>
<td>5.8</td>
<td>36.8</td>
<td>5.69</td>
<td>0.00</td>
<td>221.70</td>
<td>0.00</td>
<td>216.00</td>
<td>0.00</td>
<td>216.00</td>
</tr>
<tr>
<td>2014</td>
<td>3</td>
<td>5.44</td>
<td>32.3</td>
<td>4.83</td>
<td>0.00</td>
<td>140.80</td>
<td>0.00</td>
<td>247.00</td>
<td>0.00</td>
<td>247.00</td>
</tr>
<tr>
<td>2010</td>
<td>4</td>
<td>5.65</td>
<td>38.52</td>
<td>0.16</td>
<td>16.00</td>
<td>56.00</td>
<td>170.00</td>
<td>272.00</td>
<td>17.00</td>
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</tr>
<tr>
<td>2011</td>
<td>4</td>
<td>4.57</td>
<td>33.96</td>
<td>0.2</td>
<td>12.00</td>
<td>20.00</td>
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<td>315.00</td>
<td>0.00</td>
<td>315.00</td>
</tr>
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Appendix VI: Appendix VI: Letter of Introduction to National Commission for Science, Technology and Innovation

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471, 2241349, 310571, 2219420
Fax: +254-20-318245, 318249
Email: secretary@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

Ref: No. NACOSTI/P/15/69796/8323

Date: 23rd November, 2015

Gift Kimonge Dzombo
Kenyatta University
P.O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on “Branchless banking and financial performance of selected commercial banks in Kenya,” I am pleased to inform you that you have been authorized to undertake research in Nairobi County for a period ending 15th November, 2016.

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

On completion of the research, you are expected to submit two hard copies and one soft copy in pdf of the research report/thesis to our office.

Said Hussein
FOR: DIRECTOR GENERAL/CEO

Copy to:

The Chief Executive Officers
Selected Banks.

The County Commissioner
Nairobi County.

The County Director of Education
Nairobi County.

Appendix VII: Authorization for Research by National Commission for Science, Technology and Innovation and Nairobi County Commissioner

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471, 2241349, 310571, 2219420
Fax: +254-20-318245, 318249
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SAD HUSSEIN
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