

The Effect of Branchless Banking Strategy on the Financial Performance of Commercial Banks in Kenya

Gift Kimonge Dzombo¹, James M. Kilika² & James Maingi³

¹ Department of Accounting and Finance, School of Business, Kenyatta University, Nairobi, Kenya

² Department of Business Administration, School of Business, Kenyatta University, Nairobi, Kenya

³ Department of Economic Theory, School of Economics, Kenyatta University, Nairobi, Kenya

Correspondence: James M. Kilika, Lecturer, Department of Business Administration, School of Business, Kenyatta University, Nairobi, Kenya.

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Abstract

The Banking sector acts as the life blood of modern trade and economic development. Commercial banks 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 in the country at large, and will still remain an important subject of concern by all the stakeholders in the banking industry. In the last two decades, a lot of banking innovation has taken place in order to improve commercial banks financial performance. Branchless banking which involves the use of agency banking and electronic banking channels in the distribution of banking products and services is one such innovation. This 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 analyze the individual effects of agency banking and electronic banking channels on the financial performance of commercial banks in Kenya and the combined effect of both agency and electronic banking on the financial performance of commercial banks in Kenya. The study adopted an exploratory 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, Central Bank of Kenya banking annual supervision reports respectively. Return on Assets (ROA) was used as the main indicator of commercial banks financial performance. The amount of investment in agency and electronic banking was used as indicator for agency and electronic banking. Data analysis was done using SPSS and STATA statistical softwares. 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 the financial performance of commercial banks at 5 percent significance level. However, when agency and electronic banking channels were used together as a multichannel strategy, they had a significant positive effect on bank's financial performance 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.

Keywords: branchless banking, financial performance, multichannel strategy

1. Introduction

1.1 Background to the Study

Financial services in Africa are experiencing a moment of exciting change. Many companies are taking advantage of these changes to steer emerging African economies toward a mobile-driven, cashless (or cash lite) future by introducing new products, services, and business models (Bhan, 2014). 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). Capgemini (2012) further argues that though bank branches are still important in driving sales, they have the highest operating costs. 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. Also, 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 (Capgemini, 2012).

In the Kenyan financial sector, the 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 (Rosen, 2013). 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 alternative financial tools such as mobile banking (Rosen, 2013). According to CGAP (2008) technology can enable banks and their customers to have an interaction in a trusted way through existing local retail outlets. 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 for some time in African markets (Bhan, 2014). Currently there are more mobile money accounts than bank accounts in at least nine African countries, up from four in 2012. The African continent as a whole leads the world in the adoption of financial services on the mobile platform (Bhan, 2014).

1.2 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 point of contact 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). 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).

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, Point Of Sale and use of ATMs).

1.3 Financial Performance of Commercial Banks in Kenya

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 European Investment Bank (2013), Kenya has the most developed banking and financial system in the East Africa region. Kenyan banking sector is the fourth largest in sub-Saharan Africa, behind South Africa, Nigeria and Mauritius. There are 44 commercial banks, out of which 13 are foreign, and have set up 1,161 branches across the country. The Kenyan banking industry has taken advantage of the opportunities availed by branchless banking to improve their financial performance. 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 approximately KSh 571.5 billion as at June 30, 2014.

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 is a significant difference gap between the top five banks and the bottom five banks across the key performance indicators. For instance, in 2014 the bottom five banks had a negative return on assets and return on equity compared to the top five banks, whose ratios were strong and positive (CBK, 2015). 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).

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 a radius of three kilometers of a banking agent in 2013 as compared to only 22 percent in 2009. A similar trend is being experienced in mobile money strategy around the globe (FSD, 2014). 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 banking channels that are most important to their customers, and provide a positive experience across them.

1.4 Problem Statement

Banks globally have heavily invested in enterprise mobile financial service products and services to deliver more mobile-based banking products and services and reduce the overall expenditure on operations (Capgemini, 2012). In response to the global trends, the Kenyan banking industry has also taken advantage of the opportunities availed by branchless banking to improve financial performance (CBK, 2014). The recent rapid developments in technology and changing client tastes and preferences particularly the demand for convenience and uninterrupted access to banking services is causing banking institutions to adopt technology based modes of conducting business to drive income growth through the technology based distribution systems (Frei *et.al* 1998).

Even though this technology is acknowledged to play a key role in the financial performance of commercial banks, the empirical literature is yet to ascertain the pay offs associated with the new technology based modes of banking (Accenture, 2008). 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 expenditure to invest in information technology. It is predicted that this trend is likely to go on with banks shifting from traditional to modern banking facilitated by technology (Accenture, 2008).

Previous studies in the banking sector seeking to explain financial performance have mainly considered bank's financial performance on the basis of the traditional revenue and cost drivers. As a result both the theoretical and empirical literatures have several weaknesses. Firstly, the theoretical literature has focused on general aspects of bank financial performance and theories of financial performance, costs and profit maximization. Secondly, the empirical literature reviewed has considered the various branchless banking strategies in isolation. This is in spite 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 as observed by Rosen (2013), Capgemini (2012). Studies by Aduda and Kingoo (2012), Mwangi (2012), Ritho and Jagongo (2015) and Rosen (2008) had shortcomings of considering the various branchless banking in isolation. Thus there is need for more research in this sector to inform financial management decisions on branchless banking using both primary and secondary data to explain the effect of branchless banking on financial performance of commercial banks in Kenya. Therefore the purpose of this study was to evaluate the effect of branchless banking on the financial performance of commercial banks in Kenya.

1.5 Objectives of the Study

The study aimed at evaluating the effect of branchless banking on the financial performance of commercial banks in Kenya. Specifically the study aimed at analyzing the effect of agency banking on the financial performance of commercial banks in Kenya and also the effect of electronic banking on the financial performance of commercial banks in Kenya. Thirdly the study aimed at analyzing the effect of both agency banking and electronic banking on the financial performance of commercial banks in Kenya

2. Literature Review

2.1 Theoretical Review

2.1.1 Financial Intermediation Theory and Contemporary Banking Theory

The financial intermediation theory and by extension contemporary banking theory give emphasis to the role of commercial banks as financial intermediaries. The two theories advocate that due to information asymmetry between borrowers and lenders, commercial banks and other financial intermediaries are necessary in order to efficiently allocate capital resources in the economy. Financial intermediation theory was postulated by Douglas (1984) who 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. Brigham and Gapenski (1993) argue that 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.

Contemporary banking theory was postulated by Bhattacharya and Thakor (1993). The theory was an extension of the financial intermediation theory. Contemporary banking theory suggests that commercial banks and other financial intermediaries are essential in order to efficiently distribute 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.

2.1.2 The Theory of the Firm

The theory of the firm states that the objective of the firm is to maximize profits. In order to do this the firm must make a decision on 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 require banks to develop an operational 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.

To maintain competitiveness over the long term, banks need to move progressively from a significantly fixed-cost base to a more variable-cost base (Accenture, 2008). 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. The banking industry in Kenya is oligopolistic in nature given that the industry is highly concentrated with the tier 1 banks commanding a greater market share. Each firm has enough market power to prevent its being a market price-taker, but each firm is subjected 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 almost similar market niches.

2.1.3 Branchless Banking Theories

The other three theories bank-led theory, non-bank led theory and bank focused theory contribute immensely to this study. These theories mainly seek to explain how branchless banking is conducted, explain the branchless banking risks and opportunities and hence contribute to the independent variables of the study. 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. 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).

Under the nonbank led theory, customers do not deal with a bank or maintain bank accounts. 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 interaction. 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. 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. Use of ATMs is complementary in nature and may be seen as a modest extension of conventional branch-based banking

2.2 Conceptual and Empirical Review

2.2.1 Bank Financial Performance

Profitability is one of the most frequently used financial performance measures (Ahmed, 2009). There has been a lot of discussion as to which profitability ratio between ROA and ROE is the best measure of financial performance. 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 (Hagel J. *et.al*, 2010). Hagel J. *et.al* (2010) further argues that ROE can be used to 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 measure 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.

According to Ongore and Kusa (2012), the financial performance of banks has considerable 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 lucrative 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 considerably 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 commercial banks financial performance

Kongiri (2012) studied the effects of CAMEL variables on commercial bank efficiency as measured by the efficiency ratio of Kenyan commercial banks. The study adopted a panel data design and descriptive research design to meet its objectives. Annual financial statements of 37 Kenyan commercial banks from financial years 2007 to 2011 were obtained from the CBK. The data made up of a sample of 185 study units was analyzed using multiple linear regression method. The Findings led to the conclusion that Capital Adequacy, Earnings and Liquidity ratio have a negative relationship to efficiency ratio while Management quality and Asset Quality have a positive relationship. The study was too general and did not specifically shed light on the specific factors that influence the relationship between CAMEL variables and commercial bank's efficiency.

2.2.2 Branchless Banking and Commercial Banks Financial Performance

Policy makers and regulators are demonstrating a keen interest in this topic, 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). 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 population. 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). Whereas there is massive 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.

Rosen (2013) investigated whether the use of mobile banking and agent banking can live up to the promise of

improving 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 wellbeing. The study did not establish the cumulative effect of the various branchless banking strategies on performance.

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 innovative delivery channels as these 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 thus limiting the scope of generalization.

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. This study adopted a piecemeal approach and left out other branchless banking channels like agency banking, ATMs and POS.

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. Aduda and Kingoo (2012) analysed the relationship between e-banking and performance of Kenya banking system. Specifically, the study objective was to establish whether there is relationship between bank's 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.

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.

Makini *et.al* (2013) assessed the role of consumer education on the uptake and usage of branchless banking in peri-urban settings. The study was carried out in Bondo Township; Siaya County. The study design was descriptive with a questionnaire as the main survey tool. The results indicate that consumer education play vital role in the usage of branchless banking but not much has put in place by telecom companies and banks to educate the clients. This study was carried on only one county hence limiting its scope of generalization. The other shortcoming was that the Authors relied on only descriptive analysis to make generalizations over a very important aspect of branchless banking.

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.

3. Conceptualization and Hypotheses

3.1 Conceptual Framework

The presumed interrelationships between the study variables is decomposed into 3 sub models. The first proposed model depicts the relationship between agency banking only (independent variable) and financial performance of commercial banks (dependent variable). The main indicator for agency banking is the amount of investment in agency banking. The main indicators of commercial bank's financial performance are Return on Assets (ROA) and Return on Equity (ROE). However, according to Hagel J. *et.al* (2010), ROA is a better measure of financial performance than ROE 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 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 shows the second direct relationship between electronic banking only (independent variable) and financial performance of commercial banks (dependent variable). The main indicator for electronic banking was the amount of investment in electronic banking and Return on Assets (ROA) was the indicator for bank's financial performance.

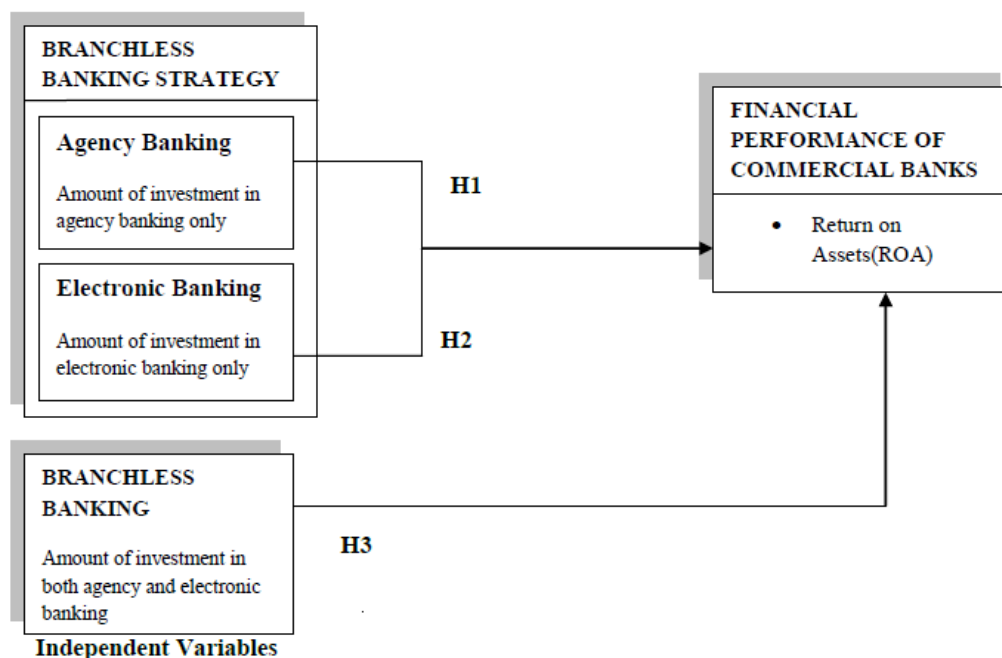


Figure 1. Conceptual framework

Source: Authors (2016)

The third sub model depicts the effect of both agency and electronic banking on the financial performance of commercial banks. To achieve this, a composite index for branchless banking was obtained by computing a geometric mean of the two sub variables agency banking and electronic banking. ROA was used as a measure of commercial bank's financial performance.

3.2 Research Hypotheses

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

H₁: Agency banking has a significant effect on the financial performance of the Kenyan commercial banks.

H₂: Electronic banking has a significant effect on the financial performance of commercial banks in Kenya.

H₃: Both agency banking and electronic banking have a significant effect on the financial performance of commercial banks in Kenya

4. Research Methodology

4.1 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 a correlational research design. This is because the study involved tests to determine the relationship between variables (Creswell, 2008). The study tested the effect of the independent variables (agency banking and electronic banking) on the dependent variable (financial performance of commercial banks) when the channels are used in isolation and the dependent variables (agency banking and electronic banking) on the dependent variable (financial performance of commercial banks) when the two channels are used together as a multichannel strategy.

4.2 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 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. 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 banks and this information was sought from the bank's finance and MIS departments because of the strategic nature of the data required.

4.3 Empirical Model, Data Collection and Analysis

The empirical model was based on panel data. The research models were defined as follows:

$$ROA_{it} = \alpha + \beta_1 AGBO_{it} + \beta_2 ELBO_{it} + u_{it} \dots \dots \dots (1)$$

Source: Baltagi (2010)

Where:

α = intercept/constant term

AGBO=Agent banking

ELBO = this refers to electronic banking which comprises of Mobile banking, Automatic Teller Machines, online banking and point of sale terminals.

Betas (β) were the coefficients of the models to be estimated

u_{it} = the error term. It includes other factors outside the model that may also have effect on bank's financial performance.

In data collection the study utilized both primary and secondary data. Primary data specifically on the indicators for branchless banking and financial inclusion 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 the indicators of commercial banks financial performance was obtained from Central Bank Annual Banking Supervision reports for the financial years 2010 to 2014. Relevant financial ratios for the dependent variable specifically ROA and ROE were obtained from the CBK Bank Supervision Reports. Both the primary and secondary 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. 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.

5. Results and Discussions

5.1 Results of Descriptive Analysis

5.1.1 Agency Banking

From the descriptive analysis, a key observation is that agency banking investment has been on steady rise over the years 2010-2014. Another key observation is that most of the banks adopted agency banking between year 2011 and

2012. Only 8 out of 32 banks (25 percent) had adopted agency banking by the end of financial year 2014. Below is a chart showing the trend of agency banking investment in the industry in the period under review.

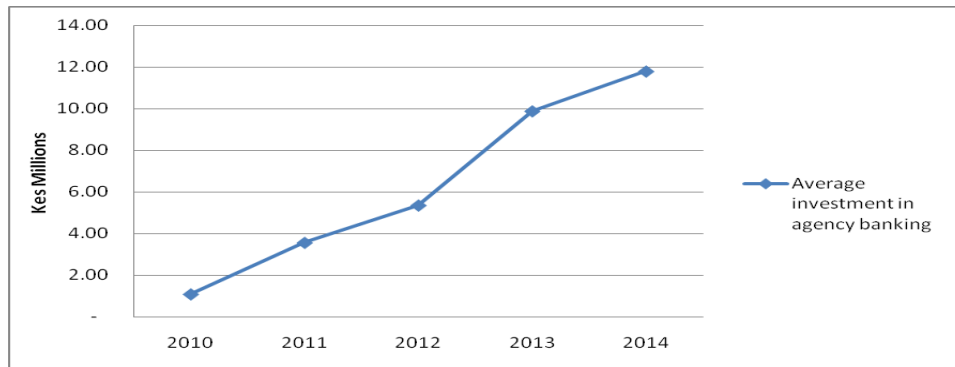


Figure 2. Trend analysis of average investment in agency banking at bank level

Source: Survey data, 2016

5.1.2 Electronic Banking

Descriptive analysis of electronic banking indicates that electronic banking investment has been on the increase over the period 2010 to 2014 with the highest rate of increase in the period 2011 to 2012. 97 percent of the banks had adopted at least one electronic banking channel by financial year 2014. Majority of the banks (34 percent) had operated electronic banking channels for more than 3 years.

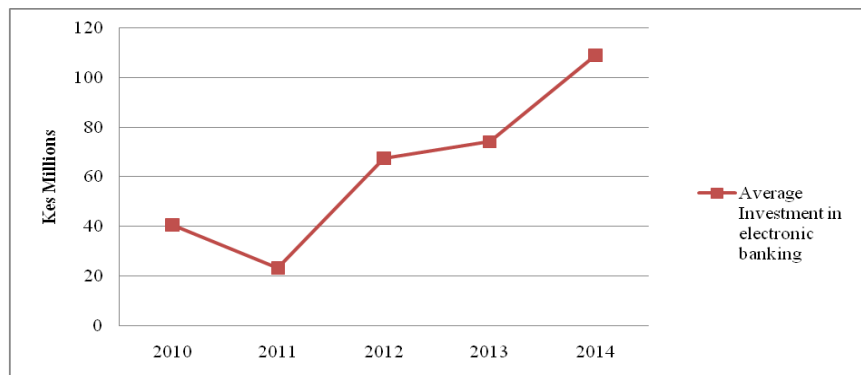


Figure 3. Trend analysis of electronic banking investment

Source: Survey data, 2016

5.1.3 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. The main indicators for the variable was Return on Assets (ROA) which is the Proportion of total bank’s net profit as percentage of Total Assets, and Return on Equity (ROE) which is Proportion of total bank’s net profit as a percentage of Total shareholders’ Equity. The indicators ROA and ROE were five year average values for ROA and ROE 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 1. Frequency table of financial performance of commercial banks for the study period

	Average ROA	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 0.99 percent	5	15.6	15.6	15.6
	1.00 to 1.99 percent	2	6.3	6.3	21.9
	2.00 to 2.99 percent	5	15.6	15.6	37.5
	3.00 to 3.99 percent	9	28.1	28.1	65.6
	4.00 to 4.99 percent	6	18.8	18.8	84.4
	Above 5.00 Percent	5	15.6	15.6	100.0
	Total	32	100.0	100.0	

	Average ROE	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 4.99 percent	4	12.5	12.5	12.5
	10.0 to 19.99 percent	7	21.9	21.9	34.4
	20.00 to 29.99 percent	14	43.8	43.8	78.1
	5.00 to 9.99 percent	1	3.1	3.1	81.3
	Above 30.00 percent	6	18.8	18.8	100.0
	Total	32	100.0	100.0	

Source: Survey data, 2016

Table 2. Average ROA and ROE in the banking industry for the study period

Year	Average ROA	Average ROE
2010	3.70	25.82
2011	3.42	23.62
2012	2.93	16.15
2013	3.35	21.00
2014	2.96	17.95
Grand Total	3.27	20.91

Source: Survey data, 2016

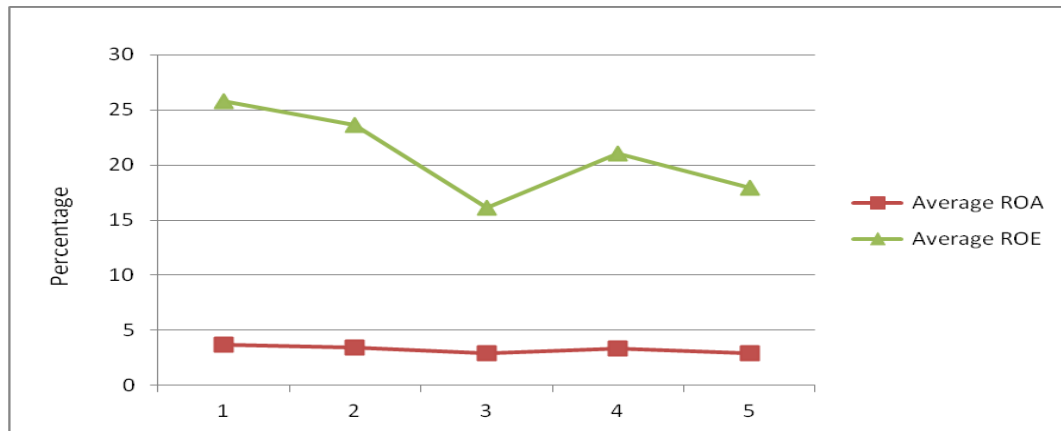


Figure 4. Trend analysis of ROA and ROE in the banking industry for the study period

Source: Survey data, 2016

Tables 1 and 2 above presents the analysis of the 5 year average ROA and ROE 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) and average Returns on Equity 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.

An analysis of ROE for the same period indicates that majority of the banks (14 banks) had a ROE of between 20.99 to 29.99 percent while only 6 banks (18.8 percent) had average ROE for the period in excess of 30 percent. 4 banks (12.5 percent) had an average ROE of less than 5 percent for the period. Table 4.11 and figure 6 presents the trend analysis of ROA and ROE in the banking industry in the period 2010 to 2014. The data indicates that Return on Assets (ROA) for the industry has remained relatively flat over the years indicating that the increase in earnings is followed by almost the same proportion of increase in assets investment. The same metrics show that the Return on Equity (ROE) which is a measure of how much profit a company generates with the money shareholders have invested has been on the declining trend.

This indicates that the commercial bank's ability to generate profit from the shareholders funds is on the declining trend and this is an evidence of a progressive decrease in shareholder value at industry level. 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 intermediation function effectively (Ongore and Kusa, 2012).

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.

5.2 Diagnostic Tests Results

Table 3 below provides a summary of diagnostic tests done, their interpretation, results and decision made.

Table 3. Diagnostic tests results

Type of diagnostic test	Statistical Technique	Interpretation /Decision criteria	Results and Decision
Fixed and random modelling assumption	Hausman test 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.	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.	Chi 2 statistics were greater than 5%. Null Hypothesis was rejected. Fixed effects model was used
Unit Root Test/ Stationary Tests.	Fisher – type unit root test	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.	The p – values for the statistics were all 0 percent. Since the p – values were less than 5 percent at 5 percent significance level (0.05) then the null hypothesis was rejected and the alternative hypothesis is accepted implying that there are no unit roots in the panels.
Serial Correlation/Auto Correlation	Breusch Godfrey (BG) test. This test is used to test auto correlation of any order. Ho: $\rho_1 = \rho_2 = \rho_3 = \dots = \rho_q = 0$	Compute the F test for the joint significance of the residuals If $F > F_{critical}$ reject null of no q order autocorrelation	The probabilities of all the respective LR chi2 statistics were less than 0.05 (5 percent significance level). Panels were serially correlated. To correct this the models were estimated using the generalised least squares method and robust standard errors
Multicollinearity tests	Spearman’s correlation matrix	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.	Most of the coefficients of individual variables were below 0.7. The only strong correlation was between ROA and ROE (0.869) and also the correlation between agency banking value of transactions and electronic banking value of transactions with a correlation of 0.8030. These were dropped from the model to ensure that the model doesn't generate biased estimates.

Source: Survey data, 2016

5.3 Hypotheses Tests Results

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 and three were tested using one-step simple regression analysis. Below table summarizes the hypothesis tests results.

5.3.1 Results for Hypothesis One and Two

Tables 4 and 5 present the results on the test for hypotheses one and two.

Table 4. Regression results for hypothesis One and Two

Model	ROA			
	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 5. Regression results for hypothesis Three

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

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. Secondly, 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. This therefore implies that when used in isolation; both agency and electronic banking had a significant negative effect on financial performance. The negative effect could be explained by the fact that the actual investment in agency banking and electronic 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.

Another explanation to the negative effect is that since most banks are still in the investment phase of branchless 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 branchless banking infrastructure could be also be expensed at the financial years when these costs are incurred hence the negative effect on financial performance.

5.3.2 Results for Hypothesis Three

Regression results on the effect of branchless banking on banks financial performance 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. The results therefore indicate that when both agency and electronic banking were used together as a multichannel strategy, the effect on financial performance 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. This therefore implies that banks would benefit more from their branchless banking investment if they used a multichannel strategy as opposed to adoption of a single channel strategy.

Table 6. Summary of the tests of hypothesis

Hypothesis	Observations/Findings	Result	Conclusion
H ₁ : Agency banking has a significant effect on the financial performance of the Kenyan commercial banks.	When used in isolation agency banking had a significant negative effect on the financial performance of commercial banks, however when used together with electronic banking as a multichannel strategy, there was a significant positive effect	Hypothesis is supported	When used in isolation, agency banking has a significant negative effect on commercial bank's financial performance
H ₂ : Electronic banking has a significant effect on the financial performance of commercial banks in Kenya.	When used in isolation electronic banking had a significant negative effect on the financial performance of commercial banks, however when used together with agency banking, there was a significant positive effect	Hypothesis is supported	When used in isolation, electronic banking has a significant negative effect on commercial bank's financial performance
H ₃ : Both agency banking and electronic banking have a significant effect on the financial performance of commercial banks in Kenya	When used together as a multi-channel strategy, agency and electronic banking had a significant positive effect on the financial performance of commercial banks in Kenya	Hypothesis is supported	When used together as a multi-channel strategy, agency and electronic banking had a significant positive effect on commercial bank's financial performance

Source: Survey data, 2016

6. Conclusions and Recommendations

6.1 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.

6.2 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 commercial banks financial performance. 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. 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.

6.3 Recommendations for Policy

From the study findings and conclusions, the study recommends that 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.

6.4 Areas for Further Research

This study only focused on licensed commercial banks. 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 commercial banks financial performance. Lastly, a study could be done to analyze the effect of bank innovations on customer experience and loyalty.

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