EFFECTS OF MOBILE BANKING ON THE FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA

BY

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DECLARATION

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

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ABSTRACT

This study sought to determine the effects of mobile banking on the financial performance of commercial banks. This study used a descriptive research design of the registered commercial banks in Kenya. Purposive sampling was employed to select the main commercial banks engaging in mobile banking and thus focused on 8 commercial banks in Kenya. The study only used secondary data which was collected from financial statements of the commercial banks. Data was analysed using descriptive and regression analysis. The results reveal that the number of mobile banking transactions, capital adequacy, markets share and the size of the assets had a positive influence on the financial performance of commercial banks. The study concludes that the adoption of mobile banking by commercial banks in Kenya has resulted in improved performance over the years. The study recommends that commercial banks should increase their focus and investments in mobile banking as this is the future of the banking industry in order for them to remain profitable.

CHAPTER ONE:

INTRODUCTION

1.1 Background of the Study

The revolution of information technology has influenced almost every facet of life, among them is the banking sector. The introduction of electronic banking has revolutionized and redefined the way banks were operating. As technology is now considered as the main contribution for the organizations‟ success and as their core competencies. So the banks, be it domestic or foreign are investing more on providing customers with the new technologies through mobile banking.

An appropriate banking environment is considered a key pillar as well as enabler of economic growth (Koivu, 2002). In order to be in line with the changes in the operating environment, it is apparent that banks in Kenya and other financial institutions have to embrace mobile banking in meeting customer demands (Tiwari and Buse, 2006). Providing banking through internet has proved fruitful in terms of cost control by employing automated ways of transacting other than the traditional method of labour intensive therefore higher productivity and profitability. Consequently, growing partnership in financial institution and other service providers has resulted in an increase in mobile banking as customers can transact and clear utility bills through their mobile.

According to Burgessy and Wong (2005), the growth of IT has affected almost each aspect of life; among them being the banking industry. The coming up of mobile banking has changed and redefined the way banks were running. Since technology is now regarded as the major input for the institutions achievement and as their main proficiencies, banks, be it local or foreign, are channelling their finances more on

offering clients with the fresh technologies by means of mobile banking. According to Diniz, Birochi and Pozzebon (2012), technological development has not only influenced lifestyle but has had an impact on the way clients do their banking. In the ancient days, banks were making use of mobile vehicles to take services to their clients particularly those in rural areas. Thereafter, they shifted to making use of the e-mail as well as internet services to offer services to their clients. The last decade, has seen an unbelievable expansion in mobile growth in developing countries (Atandi, 2013). Nevertheless, of great significance is that whereas the mobile phone provides a number of features such as the likelihood of mobile banking, approximately half of the global populations have not accepted mobile banking and monetary services or they have been denied the same (Vutsengwa & Ngugi, 2013).

1.1.1 Mobile Banking

In recent years banks have developed innovative products and offered a wide range of services in an effort to increase efficiency which is the ultimate goal of banks. Mobile banking refers to the access of banking services and facilities using electronic mobile devices such as mobile phones and PDAs (Olweny & Shipho, 2011). Although various, and at times competing, labels, and definitions have been used when discussing the provision of financial services through mobile phone networks, this study uses the increasingly popular term “mobile money” to refer to the convergence of mobile telephone and financial services.

According to Kigen (2010), Mobile banking (m-banking) involves the use of a mobile phone or another mobile device to undertake financial transaction linked to a client account. According to Kingoo (2011) m-banking refers to provision and availing of banking and financial service with the help of mobile telecommunication device.

Services include performing balance checks, account transactions, payments, credit applications and other banking transactions through a mobile device such as a mobile phone which is most used in developing countries or Personal Digital Assistant (PDA).

In both the developed and developing countries, mobile phones have become the primary form of telecommunication (Bhavnani,Chiu,Janakiram&Silarszky,2008).The northern European countries are among the most advanced ones in adoption of different new mobile technologies. In 2003, M-Banking in Finland enabled services such as checking account balances, funds transfer, payment of bills, share dealings, portfolio management and purchase of insurance. Mari, Rafael and Francisco (2007) established that product and service delivery innovations contribute positively to regional Gross Domestic Product (GDP), investment and gross savings growth. These sentiments are shared by Hendrickson and Nichols (2011), while studying the performance of small banks in the United State with regards to interstate branching and found out that banks perform better when they adopt innovations across their branches.

Mobile banking has transformed the way people in the developing world transfer money and now it is poised to offer more sophisticated banking services which could make a real difference to people's lives. This type of banking can offer a wide variety of services ranging from account information, which has to do with alerting the customers on the updates and transactions on their account through their mobile phones. People receive short messages on their phones informing them of their immediate transactions in their bank accounts. Also, they help in payments (utility bills), deposits, withdrawals, transfers, purchase airtime, request bank statements and

perform 13 other crucial banking tasks, all in real time over their mobile phones (Mutua, 2013).

1.1.2 Financial Performance

Financial performance refers to the financial soundness where depositors‟ funds are safe in a stable banking system (BOU, 2002). The financial soundness of a financial institution may be strong or unsatisfactory varying from one bank to another. According to Mugembe (2008), external factors such as: deregulation, lack of information among bank customers and homogeneity of the services bank offer do cause bank failure. The activities undertaken in m-banking contribute to the financial soundness of the commercial banks in Kenya. Some useful measures of financial performance are coined into what is referred to as CAMELS (Capital adequacy, Asset quality, and Management, Earning, Liquidity and Sensitivity analysis) which guide the banking sector (Madhyam and Stichele, 2010).

External parties normally evaluate a firm's ability based on its performance (Bonn, 2000). This implies why performance is like a mirror to a firm. The level of goal accomplishment generally defines a firm's performance (Achrol and Etzel, 2003). Firm performance is the outcomes achieved in meeting internal and external goals of a firm (Lin et al., 2008). As a multidimensional construct, performance has several names, including growth, survival, success and competitiveness. The concept of firm growth was introduced in the early 1930s known as the "Law of Proportionate Effect" (sometimes called Gibrat's rule of proportionate growth). The Law of Proportionate Effect is frequently used as a benchmark for many studies to determine business growth.

Firm performance is a multidimensional construct that consists of four elements (Alam et al. 2011). Customer-focused performance, including customer satisfaction, and product or service performance; financial and market performance, including revenue, profits, market position, cash-to-cash cycle time, and earnings per share; human resource performance, including employee satisfaction; and organizational effectiveness, including time to market, level of innovation, and production and supply chain flexibility.

Using organizational goals as a basis, different methods are adopted by different firms to measure their performance. This performance indicator can be measured in financial and non-financial terms (Bagorogoza & Waal, 2010; Bakar & Ahmad, 2010). Most firms, however, prefer to adopt financial indicators to measure their performance (Grant et al., 1988). Return on assets (ROA), average annual occupancy rate, net profit after tax and return on investment (ROI) are the commonly used financial or accounting indicators by firms (Tavitiyaman et al., 2012). Some other common measures are profitability, productivity, growth, stakeholder satisfaction, market share and competitive position (Bagorogoza and Waal, 2010).

However, financial elements are not the only indicator for measuring firm performance. It needs to combine with non-financial measurement in order to adapt to the changes of internal and external environments (Krager and Parnell, 1996). Supporting this opinion, Rubio and Aragon (2009) divided business performance into four dimensions, that is internal process, open system, rational goal and human relations, where each dimension is measured by any changes in its own variables.

1.1.3 Mobile Banking and Financial Performance of Commercial Banks

Mobile banking offers millions of people a potential solution in emerging markets that have access to a cell phone, yet remain excluded from the financial mainstream. It can make basic financial services more accessible by minimizing time and distance to the nearest retail bank branches (CGAP, 2006) as well as reducing the bank‘s own overheads and transaction- related costs. Mobile banking presents an opportunity for financial institutions to extend banking services to new customers thereby increasing their market (Lee, Lee and Kim, 2007). Simpson (2002) suggests that e-banking is driven largely by the prospects of operating costs minimization and operating revenues maximization.

Mobile technology has significantly entered rural areas in Kenya and is expected to be on an increasing trend in the coming years. Banks and other financial institutions which have conventionally depended on physically setting up branches to offer banking services, are now moving towards the taking up of mobile banking services (MBS) as a structure of branchless banking. This has the effect of reducing banking costs, and thus improving the profitability ratios. Technology has thus offered huge openings to service providers to provide the clients with immense flexibility. Ultimately, banks have adopted branchless banking like internet banking, mobile banking and ATMs; among others (Ndungu & Njeru, 2014).

1.1.4 Commercial Banking Industry in Kenya

According to the Central Bank of Kenya, there are 43 licensed commercial banks and 1 Mortgage Finance Institution in Kenya. Three of the banks are public financial institutions with majority shareholding being the Government and state corporations.

The rest are private financial institutions. Of the private banks, 27 are locally owned commercial banks while 13 are foreign owned commercial banks. The Kenyan banking industry has been undergoing dramatic operational transformation in recent years. Mergers and acquisitions, increased competition, and new regulatory requirements have driven banks to rethink their retail strategies. It has become important for banks to leverage technology to optimize sales and fulfilment processes, manage distribution channels, and streamline operations to acquire, satisfy and thereby retain customers (CBK, 2015).

In the recent wave of globalization, increased technological growth and competition there has been a lot of emphasis on performance in the Kenyan banking sector. Many scholars and researchers have used performance synonymously with productivity, efficiency, effectiveness and competitiveness. According to Bohlander and Snell (2007) organizational performance comprises the actual output or results of an organization measured against its intended outputs (organizational goals and objectives). According to Barney (2000) firms that use resources and capabilities to exploit opportunities and neutralize threats will see an increase in their net revenue or a decrease in their net costs or both and vice versa. Players in this sector have experienced increased competition over the last few years resulting from increased innovations among the players and new entrants into the market.

The banking sector has had to adopt technological change to remain competitive. In search of competitive advantages in the technological financial service industry, banks have acknowledged value of differentiate themselves from others financial institution through new service distribution channels (Daniel 1999). Banks bureaucratic process of account opening cut out many rural poor as they could not qualify to own accounts. With competition banks had to simplify the process and had

to come up with innovative ways of doing so. Quite a number of banks have innovatively come up with various M-banking products for example Equity bank M-kesho, KCB Mobibank, Family bank Pesa pap and more recently M-swari of Commercial bank of Africa.

1.2 Research Problem

The introduction of a myriad of mobile money services (MMS) by various mobile money service providers to customers has become common in the recent years as a way of gaining competitive advantage (Tchouassi, 2012). The roll out of these services in developing countries has generated a lot of interest among various players in the financial sector of the economy. In order to attain competitive advantages and to manage their operational costs, commercial banks have been at the forefront of adopting mobile money technology and integrating it into their core operations. Mobile banking offers millions of people a potential solution in emerging markets that have access to a cell phone, yet remain excluded from the financial mainstream. It can make basic financial services more accessible by minimizing time and distance to the nearest retail bank branches as well as reducing the bank‘s own overheads and transaction- related costs (Munaye, 2009).There is need to evaluate the influence of the adoption of mobile money services by commercial banks since this trend has been operating for the better part of the past decade.

Commercial banks are entering into partnership with companies that provide utility service, mobile service operators with the aim of providing M-banking services. These Services have seen an unprecedented development and growth during the last few years and it is becoming a major catalyst for economic and social development in many countries Kenya inclusive. Mobile banking has received overwhelming uptake

in Kenya since its introduction in 2007. Commercial banks have continued to deploy huge investments in mobile banking services. In addition more and more banks in Kenya are strategically launching newer and newer Mobile Banking platforms hence the need toinvestigate the effect of mobile baking on financial performance of the commercial banks. In addition, today many people in Kenya are still without effective access to mobile banking services and this may have also affected the financial performance of commercial banks.

A search for empirical literature on the influence of mobile banking on the financial performance of commercial banks reveals a number of studies, some international and others local. Ching, et al. (2011) evaluated the factors that influence the adoption of mobile banking in Malaysia. The study revealed that one of the factors is improved efficiency and thus performance. Lee et al (2007) also carried out a similar study with the aim of establishing the factors that are important in South Korea. Some of the local studies that have attempted to investigate the influence of mobile banking on the financial performance of commercial banks include Kithaka (2014), Argamo (2015), Kathuo, Rotich and Anyango (2015) and Mutua (2013). However a gap remains in addressing the overall implications of mobile phone banking, in relation to traditional banking transactions. This is evidenced by studies that reveal unresolved issues on mobile phone banking and little or no examination on how the technology is affecting banking transactions. Further, the effects of new developments such as the introduction of Equitel, a mobile money transfer service by Equity bank on the financial performance have not been evaluated. The study therefore seeks to fill this gap by answering the following research question: What is the effect of mobile banking on thefinancial performance of commercial banks in Kenya

1.3 Research Objective

The objective of this study is to determine the effect of mobile banking on the financial performance of commercial banks in Kenya

1.4 Value of the Study

This study will inform the bank management on the financial effect of mobile banking on the performance of their institutions. Through the findings of this study, the management will be able to strategize on how to realize maximum benefits from mobile banking.

Policy makers and agencies like the Central bank of Kenya (CBK), the findings of this study will be important in informing the policy formulation especially with regard to regulating the mobile banking services in Kenya. The research findings add dimension that may help improve policy direction with regard to regulation of mobile banking as well as factors that spur economic growth.

Academicians and researchers in the field of finance and banking will benefit from this study as it will help build the knowledge base in the discipline by adding on the existing literature on mobile banking and financial performance. The study will be used as a source of reference material besides suggesting areas where future research may be conducted.

CHAPTER TWO:

LITEATURE REVIEW

2.1 Introduction

This chapter presents the literature review which covers theoretical framework and empirical studies that have been carried out investigate the effects of mobile banking on the financial performance of commercial banks in Kenya.First, a theoretical review is provided which will involve a review of various theories on technological innovations and firm performance. This will then be followed by an empirical review of literature and finally, a summary of the literature review.

2.2 Theoretical Review

This study will be guided by the following theories. The financial intermediation theory,

2.2.1 Financial Intermediation Theory

Financial intermediation is a process which involves surplus units depositing funds with financial institutions who then lend to deficit units. Bisignano (1992) identified that financial intermediaries can be distinguished by four criteria. First, their main categories of liabilities or deposits are specified for a fixed sum which is not related to the performance of a portfolio. Second, the deposits are typically short-term and of a much shorter term than their assets. Third, a high proportion of their liabilities are chequeablewhich can be withdrawn on demand and fourthly, their liabilities and assets are largely not transferable. The most important contribution of intermediaries is a steady flow of funds from surplus to deficit units.

Diamond and Dybvig (1983) analyses the provision of liquidity that is transformation of illiquid assets into liquid liabilities by banks. In their model identical investors or depositors are risk averse and uncertain about the timing of their future consumption need without an intermediary all investors are locked into illiquid long term investments that yield high pay offs to those who consume later.

According to Scholtens and van Wensveen (2003), the role of the financial intermediary is essentially seen as that of creating specialized financial commodities. These are created whenever an intermediary finds that it can sell them for prices which are expected to cover all costs of their production, both direct costs and opportunity costs. Financialintermediaries exist due to market imperfections. As such, in a 'perfect' market situation, with no transaction or information costs, financial intermediaries would not exist.

Numerous markets are characterized by informational differences between buyers and sellers. In financial markets, information asymmetries are particularly pronounced. Borrowers typically know their collateral, industriousness, and moral integrity better than do lenders. On the other hand, entrepreneurs possess inside information about their own projects for which they seek financing (Leland and Pyle, 1977). Moral hazard hampers the transfer of information between market participants, which is an important factor for projects of good quality to be financed.

2.2.2 Market Power and Efficiency Structure Theories

The MP theory states that increased external market forces results into market power which is defined as the capacity of an organisation to increase its prices without losing all its clients. In banks, as in other business organisations, Market Power can take two forms: differentiation of products and services, or ease of search. There is a trade-off

between differentiation and loss of legitimacy which is optimized at a strategic balance point (Shepherd, 1986). Likewise, there is a trade-off between ease of search and security that must be taken into account. This theory categorizes Information Communication and Technology (ICT) investments into Market-Power driven initiatives profit. Moreover, the hypothesis suggest that only firms with large market share and well differentiated portfolio can win their competitors and earn monopolistic profit.(Shepherd, 1986)

Efficiency structure theory (ES) suggests that enhanced managerial and scale efficiency leads to higher concentration and then to higher profitability. According to Olweny and Shipho (2011) balanced portfolio theory also added additional dimension into the study of bank performance. It states that the portfolio composition of the bank, its profit and the return to the shareholders is the result of the decisions made by the management and the overall policy decisions.

2.2.3 Innovation Diffusion Theory

This theory was officially introduced by Bradley and Stewart in the year 2002 and it affirms that firms engage in the diffusion of innovation in order to gain competitive advantage, reduce costs and protect their strategic positions. The innovation diffusion theory put forward by Rogers in 1962 is a well -known theory that explains how an innovation is diffused among users over time (Liu & Li, 2009). It also helps to understand customers‟ behaviour in the adoption or non-adoption of an innovation (Vaugh and Schavione, 2010; Lee and others, 2003). The theory depicts that the adopters of any innovation follow a bell-shaped distribution curve which may be divided into five parts to categorize users in terms of innovativeness (Liu and Li,

2009). Rogers classified users as innovators, early adopters, early majority, late majority and laggards (Liu and Li, 2009).

The adoption and use of mobile banking has the potential to extend the limited nature and reach of the formal financial sector to the poor and rural population in Africa. Most of the existing literature is from the developmental/practitioners' arena with a few scholarly studies emerging (Mas & Morawczynski, 2009).

Although most of the studies from the practitioners are not peer reviewed, they provide valuable information on actual usage and contextual information on the development and use of the phenomenal. For example, Ivatury and Pickens (2006) provided valuable insight into the characteristics of the early adopters of WIZZIT, one of the first major initiatives dedicated to offering mobile banking to the poor in South Africa. Also significant are the ethnographic work of Morawczynski during 18 months stay in Kenya (Morawczynski & Krepp, 2011).

From the above theories, it is possible to conclude that bank performance is influenced by both internal and external factors. The internal factors include bank size, capital, management efficiency and risk management capacity. The same scholars contend that the major external factors that influence bank performance are macroeconomic variables such as interest rate, inflation, economic growth and other factors like ownership.

2.3 Determinants of Financial Performance

Financial performance is the profitability of a business enterprise measured through various measures mostly return on assets and return on equity. Profit-seeking enterprises and individuals are constantly seeking new and improved products, processes, and organizational structures that will reduce their costs of production,

better satisfy customer demands, and yield greater profits. Sometimes this search occurs through formal research and development programs; sometimes it occurs through more informal "tinkering" or trial and error efforts. When successful, the result is an innovation. The consequences of financial innovation in terms of the pay-offs to the innovators and the impact on society as a whole has been a subject for theoretical literature. Innovation generally does seem to have positive effects in raising financial performance of innovators (Boot &Thakor,2007).

The key determinants of financial performance of any company include the following, Product innovation, process innovation as well as institutional innovations. Others may include operation efficiency, capital adequacy, macro-economic condition, institutional factors such as corruption control, rule of law and accountability. The three perspectives of assessing financial performance of telecommunications companies are profitability, asset management and efficiency leverage. Return on assets (ROA) fall within the domain of profitability measures and tracks any firm’s ability to generate income based on its assets (Mwangi, 2014).

Financial innovation is an on-going process where new financial products, services and procedures are created or and standardized products are differentiated in order for the companies to respond at the continuously changing economic environment. Financial innovation by firms is a key determinant of financial performance and growth of any telecommunication company. Like any other economic behaviours, it generally arises in anticipation of material gains following a cost-benefit analysis. The innovation makes possible to either reduce costs or an increase revenues, or both. On the cost-reducing side, in particular, exogenous technological change provides room for cost reduction (Mathenge, 2013).

Another determinant of financial performance is capital adequacy. Capital refers to the amount of owners, funds available to support any business and, therefore, capital acts as a safety net in the case of adverse development. Capital is calculated as the ratio of equity to total assets. The ratio measures how much of the company's assets are funded with owners, funds and is a proxy for capital adequacy of any company by estimating the ability to absorb losses. Based on past literature, the relationship between capital and profitability is said to be unpredictable (Gupta, 2008). This is due to the fact that while positive relationship had been found by some studies, other studies found a negative relationship between capital and profitability.

Another determinant of financial performance in any organisation is the operational efficiency. The operational efficiency refers to the ability to produce maximum output at a given level of input, and it is the most effective way of delivering small loans to the very poor in microfinance context. This involves cost minimization and income maximization at a given level of operation, and it has an enduring impact on financial performance of microfinance institutions. Thus, efficiency can be measured by its productivity and cost management dimensions (Nyambariga, 2013).

2.4 Empirical Review

Several studies have been conducted on the effects of mobile banking and the performance of commercial banks. Agboola (2006) in his study on Information and Communication Technology (ICT) in Banking operations in Nigeria found out that technology was the main driving force of competition in the banking industry. During his study he witnessed increase in the adoption of ATMs, EFT, smart cards, electronic home and office banking and telephone banking. He indicates that adoption of ICT improves the banks‟ image and leads to a wider, faster and more efficient market. He

asserts that it is imperative for bank management to intensify investment in ICT products to facilitate speed, convenience, and accurate services, or otherwise lose out to their competitors

Tchouassi (2012) sought to find out whether mobile phones really work to extend banking services to the unbanked using empirical Lessons from Selected Sub-Saharan Africa Countries. This study sought to discuss how mobile phones could be used to extend banking services to the unbanked, poor and vulnerable population. The study noted that poor, vulnerable and low-income households in Sub- Saharan Africa (SSA) countries often lacked access to bank accounts and faced high costs for conducting basic financial transactions. The mobile phone presented a great opportunity for the provision of financial services to the unbanked. In addition to technological and economic innovation, policy and regulatory innovation was needed to make these services a reality.

Donner and Tellez (2008) did a study on mobile banking and economic development where they sought to link adoption, impact, and use. The study established that through offering a way to lower the costs of moving money from place to place and offering a way to bring more users into contact with formal financial systems, mbanking/ m-payments systems could prove to be an important innovation for the developing world. However, the true measure of that importance required multiple studies using multiple methodologies and multiple theoretical perspectives before answering the questions about adoption and impact.

Wambari (2009) studied mobile banking in developing countries using a case of Kenya. This study sought to establish the importance of mobile banking in the day today running of small businesses in Kenya and to understand the challenges involved in using m-banking as a business tool and appreciate the advantages and

disadvantages there in. The study elaborated that the adoption and use of mobile phones is a product of a social process, embedded in social practices such as SMEs practices which leads to some economic benefits.

Kingoo (2011) studied the relationship between electronic banking and financial performance of commercial banks in Kenya where he paid keen attention on the microfinance Institutions in Nairobi. Kingoo (2011) looked at the wider electronic banking whereas this study will only concentrate on mobile banking. Munaye (2009) studied the application of mobile banking as a strategic response by equity bank Kenya limited to the challenge in the external environment. Munaye (2009) reviewed the concept of mobile banking as a strategic response where its effects on financial performance were not considered.

Kithaka (2014) also evaluated the effects of mobile banking on the financial performance of commercial banks in Kenya. Cross sectional descriptive survey was employed in this case. This informed who, how and what about the mobile banking in commercial banks in Kenya and as a one-time event. The study adopted a census method where all the commercial banks practicing mobile banking in Kenya were studied. The study found out that there were mobile banking variables influencing the financial performance of commercial banks in Kenya, which are annual amount of money moved through mobile banking, number of users of mobile banking, capital adequacy, asset quality, bank liquidity and management efficiency. They influenced it positively. The study found out that the intercept was 1.076 for all years. The six independent variables that were studied (annual amount of money moved through mobile banking, number of users of mobile banking, capital adequacy, asset quality, bank liquidity and management efficiency) explain a substantial 75.1% of financial performance of commercial banks in Kenya as represented by adjusted R2 (0.751).

Muisyo,Alala & Musiega (2014) also evaluated the effect of mobile money services on banking institutions in Kenya. The study focused on commercial banks operating in Kakamega County. The study reveals that the introduction of a myriad of mobile money services (MMS) by various mobile money service providers to customers has become common in the recent years as a way of gaining competitive advantage through diversification, maintaining customer loyalty and increasing market share in order to grow their profitability and improve their financial position. The roll out of these services in developing countries has generated a lot of interest among various players in the financial sector of the economy. Such services include person to person (P2P) mobile money transfer (MMT), pay bill services, loan to customers and access to a wide range of banking services e.g. a/c balances, mini statements, transfer of money from one's mobile line a/c to one's own bank a/c. This provides both an opportunity and a challenge to the banking industry, one of the leading industries in the financial sector.

Kathuo, Rotich and Anyango (2015) also evaluated the effect of mobile banking on the financial institutions of banking institutions in Kenya. The study established that the number of mobile banking transactions has tremendously increased in the last five years since the introduction of M-banking. The study thus concludes that, banks that have adopted M-banking services have to a large extent increased their customer outreach, and hence have improved their financial performance. The findings revealed that many mobile banking products are being offered by banks such as Fund Transfer between Accounts/ E-funds transfer, Bill Payment, order for cheque books and bank statements and therefore concluded that the financial performance of the banks that provide these mobile banking products has improved because they ensure efficiency of the banking services.

2.5 Summary of Literature Review

Among the issues reviewed include the effects of mobile banking which include market expansion/partnership, efficiency in service delivery, access to information and customer satisfaction. From the above discussion of the theoretical and empirical literature, most of the studies have looked into the wider electronic banking as opposed to specifically mobile banking whereas the ones on mobile banking have limited research conducted on the effect of mobile banking on financial performance of commercial banks in Kenya. Further, current studies have not incorporated the latest developments such as the introduction of Equitelmobile money transfer service by Equity Bank which in the last financial year was credited with growing the bank's transactions and profitability. This study will therefore seek to fill this gap.

CHAPTER THREE:

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology. First, a presentation of the research design is provided. This is followed by an explanation on the target population, sampling design, description of research instruments, description of data collection procedures and a description of data analysis procedures.

3.2 Research Design

This study used a descriptive research design of the commercial banks in Kenya. According to Cooper & Schindler (2006) in a descriptive design, either the entire population, or a subset thereof is selected, and from these individuals, data are collected to help answer research questions and describe the current situation of the variables at the time of data collection. The study used data for a period of 5 years (2010-2014) in order to establish the effect of mobile banking on the financial performance of commercial banks. This was therefore considered to be the appropriate research design in this study.

3.3 Population and Sample

The population of this study were all the registered commercial banks in Kenya. According to the Central Bank of Kenya, there are 42 registered commercial banks in Kenya (Appendix 2). These were the population of the study.

This study employed the use of purposive sampling to select those commercial banks that have mobile banking services. The main banks are Equity Bank, KCB, Barclays,

Family Bank, Cooperative Bank, Standard Chartered Bank, CBA, and National Bank of Kenya. The sample for this study was therefore be 8 commercial banks in Kenya.

3.4 Data Collection

For purposes of this study, only secondary data was used. Secondary data wascollected from the websites of the 8 commercial banks as well as that of the CBK. The secondary collected included the financial performance (ROE) of the commercial banks for a period of the past 5 years. This also included other variables such as the size of the bank in assets, the market share of the bank, and others related to mobile banking transactions.

3.5 Data Analysis and Presentation

After collection of data and testing for reliability, it was coded and analysed with the aid of the Statistical Package for Social Sciences (SPSS) version 20. Then, the study used descriptive statistics and inferential statistics to establish the relationship between the variables and financial performance of the commercial banks. The descriptive statistics used are the percentages, mean and standard deviations. Data was presented in tables and graphs. Statistical coefficients were measured in order to establish the effects of mobile banking on the financial performance of commercial banks in Kenya.

The study used the following linear regression model

$$Y_1 = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \epsilon$$

Where

Y Financial Performance (ROE)

X_1 Number of mobile banking transactions

X_2 Capital Adequacy

X_3 Size of bank in assets

X_4 Market Share

α Is the constant or intercept

ϵ is the error term

Table 3.1: Operationalisation of Variables

Variable	**How to measure**
Bank performance	Return on Equity (ROE)
Number of mobile banking transactions	Total figure of unit transactions
Size of bank	Total bank assets at end year
Market Share	Percentage share of bank in Kenyan market in terms of customers
Capital Adequacy	Equity capital to Total Assets

Source: Researcher (2016).

To avoid co-linearity between the independent variables, correlation analysis was carried out and adjustments made to ensure the independent variables do not affect each other and hence the results. Strength of the model was tested using significance of F statistic at 5% level as well as using the coefficient of determination R^2.

3.7 Ethical Considerations

Due to sensitivity of some information collected, the researcher holds a moral obligation to treat the information with utmost propriety. Since the respondents might be reluctant to disclose some information, the researcher needed to reassure the respondents of confidentiality of the information given.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the data analysis results and the discussion of findings. The results are shown in terms of the correlation analysis and regression analysis. The main objective of this study is to evaluate the effect of mobile banking on the financial performance of commercial banks in Kenya.

4.2 Correlation Results

The table below presents the results of the correlation analysis which was done to examine any serial correlations among the independent variables which, when entered into the model for regression analysis, would lead to inaccurate results. This is a common issue with regression analysis and may influence the results of the regression analysis. Multi-collinearity or serial correlation is a situation where two or more independent variables (predictors) in a regression model are moderately or highly correlated.

Table 4.1: Correlation Results

	MT	**CA**	**S**	**MS**
M-Banking Transactions	1			
Capital Adequacy	.257	1		
Size in Assets	.321	.310	1	
Market Share	.264	.192	.263	1

Source: Researcher (2016)

The results show that there were low correlation between the independent variables and therefore no serial correlations between the variables. None of the correlations between the independent variables was significant. These results therefore reveal that there was no multicollinearity between any of the predictor variables and therefore the results of the regression analysis could be relied upon.

4.3 Regression Results

The results in Table3 present the ANOVA from the regression analysis and are used to show the significance of F-statistic.

Table 4.2: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.204	2	.045	6.38	.001
	Residual	3.143	6	.017		
	Total	**4.347**	**8**			

Source: Research findings (2016)

Table 4 shows that the *F*-statistic of 6.38 was significant at 5% level of significance, *p* = .001. This shows that the model was fit to explain the relationship between the independent variables and the financial performance of commercial banks Kenya.

The table below shows the regression model summary results. The results show the values of R, R^2, adjusted R^2, and the standard error of estimate.

Table 4.3: Model Summary

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	.873[a]	.762	.751	.0572

Source: Research Data (2015)

The results in the table above show that the independent variables had a high correlation with the Financial performance of commercial banks (ROE) (R = 0.873). The model accounted for 76.2% of the variance in performance as shown by the R^2.

Table 5 shows the results of the regression coefficients. The significance is shown in terms of t-values and the p-values.

Table 4.4: Regression Results

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.065	.027		.418	.680
M-Banking Transactions	.653	.143	.619	4.454	.001
Capital Adequacy	.542	.195	.257	3.262	.002
Market Share	.622	.181	.112	2.843	.001
Size of Bank	.432	.213	.171	3.185	.003

Source: Research Data (2015)

The results in the table above show that mobile banking transactions had a positive effect on the financial performance of commercial banks in Kenya and this effect was significant at 5% level (B = 0.653, p = 0.001). The P value is significant if it is less than 5% i.e. (0.05) since significance was being measured at 95% confidence level.

The results also show that capital adequacy had a positive effect on the financial performance of commercial banks in Kenya and this effect was significant at 5% level (B = .542, p = 0.002). The results also show that level of market share had a positive effect on the financial performance of commercial banks in Kenya and this effect was significant at 5% level (B = .622, p = 0.001).

The results finally show that the size of bank in assets had a positive effect on the financial performance of commercial banks in Kenya and this effect was significant at 5% level (B = .432, p = 0.003).

4.4 Discussion and Interpretation of the Findings

The study sought to establish the relationship between the amounts of mobile banking transactions in a commercial bank with its financial performance. The results reveal that mobile banking transactions had a positive effect on the financial performance of commercial banks in Kenya and this effect was significant at 5% level (B = 0.653, p = 0.001). This is an indication that the more the number of mobile banking transactions in a commercial bank, the better the financial performance of the bank. This is consistent with the results of previous studies such as Kithaka (2014).

The study also sought to establish the influence of capital adequacy and the financial performance of a commercial bank in Kenya. The results show that capital adequacy had a positive effect on the financial performance of commercial banks in Kenya and this effect was significant at 5% level (B = .542, p = 0.002). This means that the higher the capital adequacy ratio in a bank, the better financial performance since the bank is able to engage in various investment activities to generate more funds. This is in line with the results of Kingoo (2011).

The study also sought to establish the influence of the bank's market share in mobile banking on the financial performance. The results also show that level of market share had a positive effect on the financial performance of commercial banks in Kenya and this effect was significant at 5% level (B = .622, p = 0.001). This means that the larger the market share of a commercial bank, the larger the numbers of mobile banking customers, the more funds generated and thus the better the financial performance. This is also in line with previous literature such as Kathuo et al (2015).

The study also sought to establish the influence of the size of the bank in terms of assets on the financial performance of the bank. The results finally show that the size of bank in assets had a positive effect on the financial performance of commercial banks in Kenya and this effect was significant at 5% level (B = .432, p = 0.003). This means that the more the bank assets, the more it is able to engage in mobile banking and thus the higher the financial performance. This is in line with the results of previous studies such as Mutua (2013).

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of findings, conclusion of the study, recommendations for policy and practice, limitations of the study, and suggestions for further research. The main objective of this study was to determine the effect of mobile banking on the financial performance of commercial banks in Kenya

5.2 Summary

The study sought to determine the effect of mobile banking on the financial performance of commercial banks in Kenya. The major findings are summarized as follows based on the conceptual framework of the study.

The regression results showed that the model accounted for 76.2% of the variance in performance as shown by the $R^{2.}$ The *F*-statistic of 6.38 was significant at 5% level of significance, $p = .001$. This shows that the model was fit to explain the relationship between the independent variables and the financial performance of commercial banks Kenya.

The study sought to establish the relationship between the amounts of mobile banking transactions in a commercial bank with its financial performance. The results reveal that mobile banking transactions had a positive effect on the financial performance of commercial banks in Kenya and this effect was significant at 5% level.

The study also sought to establish the influence of capital adequacy and the financial performance of a commercial bank in Kenya. The results show that capital adequacy

had a positive effect on the financial performance of commercial banks in Kenya and this effect was significant at 5% level.

The study also sought to establish the influence of the bank's market share in mobile banking on the financial performance. The results also show that level of market share had a positive effect on the financial performance of commercial banks in Kenya and this effect was significant at 5% level.

The study also sought to establish the influence of the size of the bank in terms of assets on the financial performance of the bank. The results finally show that the size of bank in assets had a positive effect on the financial performance of commercial banks in Kenya and this effect was significant at 5% level.

5.3 Conclusions

The results reveal that mobile banking transactions had a positive effect on the financial performance of commercial banks in Kenya. This study therefore concludes that as a commercial bank increases its mobile banking coverage, this results in an increased number of transactions through their mobile banking platforms and therefore an improved financial performance.

The results also show that capital adequacy had a positive effect on the financial performance of commercial banks in Kenya. This study therefore concludes that the higher the capital adequacy ratio in a bank, the more it is able to invest in mobile banking activities and thus the better the financial performance.

The results also show that level of market share had a positive effect on the financial performance of commercial banks. The study therefore concludes that the larger the market share of a commercial bank, the higher the number of mobile banking transactions it is likely to have and thus the better the financial performance.

The results finally show that the size of bank in assets had a positive effect on the financial performance of commercial banks in Kenya. The study therefore concludes that the size of the assets of a commercial bank determine the scale of mobile banking services and products it can offer, and this leads to improved financial performance.

5.4 Recommendations of the Study

The study makes a number of recommendations based on the findings. First, the study recommends that the commercial banks in Kenya should continue with the popularisation of mobile banking in the industry as this has a positive effect on their financial performance. The study also recommends that commercial banks that already have mobile banking services and products should come up with ways of improving the transactions through these platforms as this has a positive impact on their earnings and thus financial performance.

The study also recommends that commercial banks should strive to improve their capital adequacy ratios in order to ensure there are adequate funds available for investment in mobile banking. This in turn will result in improved financial performance. The study also recommends that commercial banks should find ways of growing their market share in the Kenyan banking industry as this provides them with more customers for mobile banking.

The study finally recommends that commercial banks should seek ways of growing their asset base in order to make it possible to invest in mobile banking as well as support the platforms in an efficient manner. This will in turn result in improved financial performance as shown in the study.

5.5 Limitations of the Study

The study also relied on secondary data from the financial statements of the firms. While this is a reliable source of data, it is quantitative in nature and therefore it was not possible to fully interrogate the influence of mobile banking on financial performance as may have been the case if interviews were conducted. To improve this, it will be important to used mixed methods in data collection in future studies.

The time span for the data collected in this study was 5 years. This is not a very long period that can help provide robust results for applicability by the commercial banks. A longer period, of say 10 years, would have been preferred but resources were scarce. A longer period would help reduce this limitation.

5.6 Suggestions for Further Research

The study recommends that more studies should be conducted on the topic using fairly longer time periods (more than 5 years) as such studies may be useful in showing the trends as well as the long terms relationship between mobile banking and financial performance of commercial banks in Kenya.

The study also recommends that further studies explore the influence of mobile banking on the financial performance of commercial banks in Kenya using a mixed methodology where both primary and secondary sources of data are used. This way, some of the issues that cannot be addressed through secondary data can be accurately captured.

Future studies can use an improved model with more firm-specific control variables in the model as such may improve the accuracy of the model and therefore lead to better and robust results.

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Appendix: Financial Data

		ROE	MB Accounts	Capital Adequacy	Assets	Market Share
Equity Bank	2015	23.90%	1.6	16.90%	428,062.0	9.44%
	2014	26.90%	0.48	18.50%	344,572.0	8.70%
	2013	25.66%	2.8	18.60%	277,729.0	9.79%
	2012	28.10%	2.1	17.60%	243,170.0	10.06%
	2011	30.10%	49320	17.50%	196,294.0	9.98%
KCB	2015	24.10%	2000000	14.60%	558,094.0	14.10%
	2014	22.30%	1087000	15.40%	490,338.0	12.69%
	2013	22.60%	65694	16.20%	390,852.0	12.83%
	2012	23.80%	52120	14.80%	368,019.0	13.54%
	2011	24.80%	13601	13.40%	330,664.0	14.52%
Barclays	2015	21.20%	0.43	16.50%	240,877.0	6.94%
	2014	21.90%	0.39	16.90%	226,116.0	7.27%
	2013	23.50%	52012	15.70%	206,739.0	7.65%
	2012	29.50%	46120	16%	184,825.0	8.08%
	2011	27.60%	42063	17.50%	167,029.0	8.90%
StanChat	2015	15.40%	31520	17.60%	233,965.0	7.00%
	2014	25.70%	20542	18.30%	222,496.0	7.19%
	2013	25.60%	17572	16.40%	220,391.0	8.09%
	2012	26.20%	15618	15.70%	195,353.0	8.29%
	2011	28.20%	12126	12.60%	160,047.0	7.74%
Family Bank	2015	16.50%	19695	14.80%	81,281.0	2.36%
	2014	16.90%	16384	17.30%	61,834.0	2.06%

	2013	20.70%	15981	13.80%	43,514.0	1.62%
	2012	11.50%	14201	15.70%	30,989.0	1.42%
	2011	10.70%	13202	12.80%	26,002.0	1.34%
Co-OP	2015	23.70%	145638	14.40%	342,500.0	9.83%
	2014	18.70%	142752	15%	285,396.0	8.91%
	2013	24.90%	138863	15.80%	231,215.0	8.61%
	2012	26.30%	123692	14.60%	200,887.0	8.74%
	2011	25.60%	114124	12.40%	168,312.0	8.41%
CBA	2015	16.60%	7520	10.10%	215,625.0	5.58%
	2014	18.30%	6957	9.40%	197,464.0	5.12%
	2013	24.40%	6650	10.50%	145,998.0	4.40%
	2012	24.30%	5940	10.90%	118,301.0	4.08%
	2011	15.60%	4650	11.30%	94,771.0	3.98%
NBK	2015	-10.40%	2934	8.80%	125,440.0	3.42%
	2014	7.10%	2873	9.90%	123,092.0	3.60%
	2013	9.40%	2584	12.80%	92,556.0	3.39%
	2012	6.90%	3562	15.60%	67,155.0	3.00%
	2011	14.80%	3012	15.20%	68,665.0	3.59%