

**THE EFFECT OF MOBILE BANKING ON FINANCIAL
PERFORMANCE OF COMMERCIAL BANKS IN KENYA**

BY

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D61/68328/2013

**A MANAGEMENT RESEARCH PROJECT PRESENTED IN
PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE
AWARD OF MASTER OF BUSINESS ADMINISTRATION,
SCHOOL OF BUSINESS, UNIVERSITY OF NAIROBI**

NOVEMBER 2018

DECLARATION

This is my own original work and has never been submitted for a degree in any other university.

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

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ACKNOWLEDGEMENT

This Research Project cannot be a product of a solitary mind. There are many to whom I am indebted, but the following deserve a special mention as an expression of my deepest gratitude;

To my Supervisor Dr. Herick Ondigo whose precious and unending Support and Advice led to the task of successfully writing this Project.

To my Family led by my lovely wife Zenah, Sons Riley and Ethan and my Mother, Consolata who taught me that everything I ever needed was tucked deep within me.

To all those whose work are run as Illustrations in this Project, only eternity will tell the extent they will instill knowledge in others.

To Elvis My long time Friend for his valuable assistance in data analysis and relevant interpretations. Thank you again for your notable Contribution.

To God the Almighty and my Heavenly Father who fashioned my plans in this world before I existed.

DEDICATION

To My Family, Friends and Associates whom their Emotional and Moral Support has been Steadfast. May God continue to shower you all with abundant blessings.

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LIST OF ABBREVIATIONS AND ACRONYMS

ANOVA	- Analysis Of Variance
ATM	- Automated Teller Machine
CA	- Communications Authority of Kenya
CAR	- Capital Adequacy Ratio
CBK	- Central Bank of Kenya
FOREX	- Foreign Exchange
IVR	- Interactive Voice Response
MFBs	- Microfinance Banks
MRPs	- Money Reference Providers
NPLs	- Non Performing Loans
NSE	- Nairobi Securities Exchange
POS	- Point of Sale
ROA	- Return on Assets
ROE	- Return on Equity
SMA	- Standalone Mobile Application
SMS	- Short Message Service
SPSS	- Statistical Package of Social Scientist
WAP	- Wireless Application Protocol

ABSTRACT

Mobile banking is a service provided by financial institutions in cooperation with mobile phone operators. It allows customers to conveniently undertake their banking by using their phones. It entails disseminating banking services to the unbanked in addition to those who are at the bottom of the economic pyramid often living in remote areas. The study sought to determine the effect of mobile banking on financial performance of commercial banks in Kenya. Cross sectional descriptive survey was used in this study. 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 made use of secondary data from the Audited Financial statements of the Banks, those deposited at the Nairobi Securities Exchange and financial performance data from CBK annual banking survey reports. The data collected was cleaned, coded and analyzed using SPSS. Quantitative analysis was analyzed through descriptive statistics such as measure of central tendency that generated relevant percentages, frequency counts, mode, and median and mean where possible. To test for the strength of the model and the effects of mobile banking on the financial performance of commercial banks in Kenya, the study conducted an Analysis of Variance (ANOVA). From the regression model, 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 transferred 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 0.019 for all years. The six independent variables that were studied (annual amount of money transferred through mobile banking, number of users registered on mobile banking platform, capital adequacy, asset quality, bank liquidity and management efficiency) explicate a substantial 15.4% of financial performance of commercial banks in Kenya as represented by adjusted R² (0.751). The study therefore concludes that mobile banking positively and significantly affects the financial performance of commercial banks in Kenya. The study recommends that policy makers consider mobile banking in their formulation of policies as well as commercial banks.

CHAPTER ONE: INTRODUCTION

1.1 Background of Study

Based on the current rapid advancement in technology, several commercial enterprises are able to offer their monetary services both to those who do not have bank accounts and the under banked clients. These services take different forms and they include long distance money transfers, bartering schemes that are informal as well as micropayments. The degree of utilization and availability of these services can no longer be undermined globally. However, there is scarce research tabling the effects of adopting mobile banking systems in the developing world and more so how it affects these developing countries socio -economically (Maurer, 2008).

According to the Communication Authority of Kenya report, from July to September 2015 quarter, the use of mobile in business enterprises increased to 37.8 million subscribers that is 88.1% as compared to the previous quarter of 36.1 million subscribers.

Consumers from developed countries were the first targets for mobile applications. Mobile banking complements other banking services such as checkbooks, ATMs, POS, networks, internet services, and voice mail services. It also offers a convenient financial management without handling of cash (karjaluoto, 2002). The major challenge affecting this technology in the developing world is basically the accessibility and the affordability of these services (cracknel, 2004).

The introduction of the mobile phones has not only affected the m banking system but rather it has led to emergence of other implications especially in the developing

world. Some of the emerging discussions are based on the effect of the device on the reproductive spheres, domestic affairs, social and economic affairs. Every transaction is generally affected by an individual's structural position to the communication networks (castells, 1996)

Understanding the role of the mobile in matters growth and developments in a society is of paramount importance. It must be able to mediate the social and economic stability of the societies and sometimes affect both of them. The prevailing theory on the importance of telephone communications in third world has dwelled much on voice calls and text messaging (Donner, 2008).

1.1.1 Mobile Banking

Mobile banking or rather M-banking simply denotes to the access to banking administrations and other services offered by the monetary firms by utilization of an electronic versatile device. Some this services include the money transfers, account based savings among other products. (Porteous, 2006) differentiates the two features of m-banking namely the additive and transformational aspects. Mobile banking where the cell phone is simply one more channel to a bank account that is existing is called additive aspect. In this case it just contributes to the scope of alternatives' or uplifts the comfort of existing customers of the bank. On the other hand, transformational aspect occur when the commercial item connected to the utilization of the telephones focused at people who don't have official financial account with the conventional banks. Mobile money transfer services subscription in Kenya ascended from 27.7 million to 28.7million as indicated by the last quarter of CA's year 2015 report.

According to Sarker and Wells (2003), the main single obstruction to the emerging mobile banking is the cell phone. In the previous ten years mobile phones have been spread across all the developing nations which is one of the best technological achievements. The spread of cheap devices coupled with prepay card has been such an interesting experience. Millions of the first time mobile subscribers have been able to make voice calls and send instant messages. A large number of these similar new mobile clients reside in real money economies, with no access to monetary services that others underestimate. In fact such developing world a larger number of individuals have cell phones compared to those with bank accounts (Porteous, 2006).

The major reason why mobile banking have been widely adopted in Kenya is the fact that its subscribers both those who have bank accounts and those who do not have to transfer their money in a safer and cheaper price compared to other financial banking platforms. In Kenya, M-PESA, propelled on Walk 6, 2007, is the predominant money transfer framework. It has encountered exceptional development from that point forward, extraordinarily outperforming desires (Liu and Mithika 2009).

1.1.2 Financial Performance

This is the measurement of results of strategies and operations of a firm in terms of money over a specified duration. Such results are replicated on the ROA and value added of the firm. It basically refers to the act of performing the financial activities and to a broader sense, the level to which the financial goals are achieved. It is also used as a comparison tool for firms which bear similarities across the same industry or it can as well be used to compare industries and sectors in aggregation (Noveu, 1981).

The determination of a firm's financial performance involves the analysis of statements of finance. Noveu(1981), concluded that such analysis allows managers, venture capitalist and creditors as well as potential venture capitalist and creditors to evaluate the past and current financial status of an institution. Ratio analysis is a popular tool used by the various users of accounting information to determine the ability of the firm to service its debt and earn profit for owners. Managers can use the analysis of a planning device, tool for control or means to ascertain weaknesses in the firm. The ratios can be categorized into five groups: liquid ratios seek to determine if a firm can meet its current responsibility as they become due. Activity ratios indicate how rapidly assets flow through the firm. Profitability ratios measures performance where else leverage ratios measure the extent to which the firm uses debt financing. Coverage ratios measure the ability to make or cover specific payments. (Mayo, 2007). In the banking industry, the parameters that show the banks performance include: total assets, gross loans, deposits, profitability and liquidity ratios CBK, 2011).

The Kenyan banking sector recorded a robust performance in the year 2016. There was an increase in gross loans from 2.17 trillion Kenya shillings in December 2015 up to 2.29 trillion Kenya shillings in December 2016. There was also an increase in customer deposits by 5.6% from Kshs 2.49 trillion in December 2015 to Kshs 2.62 trillion in December 2016. This increase was sustained through deposits mobilization by banking agencies as well as mobile banking platforms, (CBK).

1.1.3 Impact of Mobile Banking on Financial Performance

Through the opening up of new horizons and scenarios, e-banking has had a tremendous impact on many banks as per sumra et al (2011). M banking has enabled many institutions to carry out their daily tasks efficiently leading to improved time usage and superior controls. This automation has assisted many banks to take full control of their operating costs and overheads thus increasing their profits.

According to Aduda and Kingoo (2012), e banking has changed the structure of bank income. Many banks now have diversified their income sources for instance the income service fee instead of relying majorly on the interest rates. The growth in market competition has led to reduction in the margins within operations of lending which was the traditional business of banks. E-banking has also impacted on the off balance sheet items in financial accounts. It allows for some of the products for instance the loan to a company to be traded in capital market (securization) rather than leaving in the banks' balance sheet of the bank. There have been debate on whether and how Information and Communication Technology together with ecommerce will improve the performance of the bank upon their adoption.

This technology has further reduced the institutions paperwork thereby enhancing proper documentation. Through the robust ICT platforms, banking institutions have been able to cut their payroll cost since they no longer need to employ more workers to withstand the increasing number of customers. There have been an increase on the ratio of customer deposit accounts to employees from 60 in 1996 to 972 (efficiency score) in 2015(CBK). This means that in 2014, averagely, 770 customers could be served by one employee where else in 2015, and 972 customers could be served by

one employee. The use of technology has led to this efficient ways in customer service delivery.

Mobile banking has also impacted on the general economy by creating a conducive environment for the growth, productivity and prosperity of businesses. E-banking can discourage the illegitimate practices in the banking industry considering it operates in an electronically controlled and monitored environment. Such acts of fraud and embezzlements have had damaging effects on the institution financial performance.

According to Egan et al (2015) research on how community banks(microfinance) performed with and without mobile banking noted that significant differences. E-banking improves the financial performance of the institutions and encourages the people to adopt new technologies and embrace online services. According to Cheruiyot, (2010), internet banks are well established and offer financial services and profitability compared to their non-online counterparts. Perhaps because they rely more on core deposits for funding. The operating cost of this technology is low and more importantly it is possible to offer a range of services at a low cost which is why DTMs must consider it.

1.1.4 Commercial Banks in Kenya

A commercial bank is a monetary institution which conducts banking business in Kenya. Central Bank of Kenya (CBK) is not a commercial bank. Banking involves accepting money deposited by the clients and repaying them whenever they present a request by writing a cheque to withdraw for the case of current account. Other types of accounts allow a client to withdraw funds only after the agreed period, some may

be needed to write a notice to the bank. The money deposited by a client may be invested or lent to other clients by the bank

By 31st October 2018, The banking industry in Kenya had registered quite a number of players including the CBK which serves as a regulatory authority, 43 Banks (1 mortgage finance company and 42 commercial banks), 8 foreign banks' representative offices, 13 microfinance banks, 17 Money Reference Providers (MRPs), 77 Foreign Exchange Bureaus and 3 credit reference bureaus (CRBs).

Forty (40) amongst the 43 finance institutions are privately owned whereas the government of Kenya has a mainstream stake in 3 of them namely, Development Bank of Kenya Limited , Consolidated Bank of Kenya Limited as well as National Bank of Kenya Limited. Among 40 privately owned, 25 are owned by individuals coming from within Kenya (major shareholders are native Kenyans) while 15 are owned by foreigners. The 25 institutions comprises of 24 commercial banks and 1 mortgage financial institutions. 11 out of 15 institutions owned by the foreigners are local subsidiaries of local banks where else four are branches of foreign banking institutions.

1.2 Research Problem

Most banks all over the globe have adopted Mobile banking applications to enable their customers to effectively and efficiently transact their business through their mobile phones without necessarily physically visiting their bank branches.

In Kenya, Mobile phones have become a major catalyst for economic and social developments. The adoption of Mobile banking is mainly directed towards cutting costs thereby improving or enhancing the bank's performance. Therefore In a bid to improve the bank performance, a majority of Kenyan banking institutions has extended their services through their branches in Kenya and has employed mobile banking system with the hope that it would eventually lead to more improved performance and hence increased productivity. However, it is debatable whether the mobile banking systems employed has any effect on the banks performance in Kenya.

There is still a gap in resolving the overall effect of mobile banking in relation to the traditional banking transactions. Graham (2011) and Luarna (2005) argue that the extent to which mobile banking phenomena is possible remains questionable due to the studies that reveal unaddressed concerns between commercial banks' financial performance and mobile banking. Daniel (1999), stipulated that a big percentage of the research in mobile banking has concentrated on banking services provision by use of a channel or a device for distributing the service via internet banking. (Black et al, 2002).

There also is rapid absorption of mobile based banking services by individuals and banks in Kenya (Koivu, 2002). This pattern of continued reliance on cell phone to fulfill financial transactions is increasingly obtaining momentum (Liu & Mithika 2009). The earlier studies done focused more on e-commerce, largely concentrating on the challenges bank customers faced or the benefits both banks and customers were likely to experience from the electronic services (Mbuvi, 2007).

For the sake of evaluating the implications of adopting mobile devices, this study intends to look into some of the critical emerging issues as a result of technological innovations particularly mobile banking.. The need to execute and implement the m-banking services in the banking industry has been catapulted by the rising demand for the banking services by the customers and in addition the need by the banks to gain a competitive advantage and make a positive impact on the economic growth. Studying mobile banking will bring into light the substance of using the mobile systems in the daily operations of banking activities and offering of services in a more enlightened and efficient manner.

This text is designed to review the current situation of the mobile banking services. Therefore, the research seeks to answer the question, “Does Mobile banking affect the financial performance of Commercial banks in Kenya”?

1.3 Objective of the study

To explore how financial performance of commercial banks in Kenya is influenced by mobile banking.

1.4 Value of the study

From the research on mobile banking, which has the capability to offer low cost, easily accessible financial services to many Kenyans who do not operate the conventional bank accounts, will be of great impact on the Kenyan financial firms in that the management will utilize the study's findings to plan on the best way to maximize their profits from the adoption of mobile banking.

Additionally ,the study will also be of great value to the bank customers since they will not have to physically move to banks for them to be able to access banking services hence they will be able to save money and time. They will be able to operate their bank accounts with more ease and at any time and place.

Moreover, the study will be of great significance to the strategy formulators and agencies like the CBK and KRA who will be able to formulate and implement strategies and guidelines that will guarantee and ensure effective and efficient administration of mobile banking in the financial industry.

CHAPTER TWO: LITERATURE REVIEW

2.1. Introduction

Literature review forms the basis of the study which aids in development of a good understanding of the previous work. It also expound the details of the work done in the past and the new trends regarding the subject (Saunders, Lewis and Thornhill: 2000) based on the tips drawn from the research, the author will provide a reader with background information of research questions and goals. This enables the reader to compare this research with the findings of the research which was done in the past by different authors worldwide. Variety of business entities employs mobile phones in providing financial services to individuals who don't have access to traditional banks. However much is yet to be done academically to explore the use of M banking. This study is conducted to bridge this gap, it outlines the need for research concentrating on the context of the use of m-banking.

2.2. Theoretical review

A theory refers to a set of prepositions, accepted facts as well as assumptions that try to explain or give a reasonable e explanation of the cause and the effects of correlation of groups of observable occurrences (Krishnaswami and Satyaprasad, 2010). In this study, the following theories will offer different reviews and perspective of various scholars with regards to the objective of the subject.

2.2.1. Innovation Diffusion Theory

Bradley and Stewart (2002) indicate that businesses engage in diffusion of innovation with the intentions of gaining competitive advantage, guarding their strategic positions and reducing the costs. The theory provides an understand on how a

customer behaves in adoption or rejection of innovation (Vaugh and Schavione, 2010; Lee et al, 2003)

Rogers (1995), highlights distinct intention of an individual to embrace a technology as a means to perform an activity which was previously performed by means of traditional methods. The theory attempts to provide comprehensive details about the process of adoption and the methods. It also provides a prediction on whether and how a new invention will prosper. Knowledge, persuasion, decision, implementation and confirmation are some of the steps passed when introducing technological innovation to the world. According to Rogers (1995) the five critical attributes that influences significantly the rate of adoption of new innovations consist of observability, trialability, complexity, relative advantage and compatibility. Therefore, the charge of adoption of fresh innovations will greatly hinge on how an business interprets the above critical attributes. If firms in the Country observe the payback of m-banking they will definitely take up this innovation given other attributes among them the accessibility of the requisite apparatus.

Mobile banking provides a means to spread the scarce nature and a reach to formal financial services to the population that suffers from poverty as well as the unbanked across the African continent. The study focuses on getting the discussion to the core of the information systems literature. This study is relevant to my study as it helps in studying how various new mobile banking products like Mpesa are transforming how commercial banks in Kenya are performing financially.

2.2.2 Financial Intermediation Theory

It entails processes that aim at reducing the transaction cost. It involves surplus units which deposit funds and assets with banks who will thereafter lend to firms with shortfalls. Bisignano (1992) noted that financial mediators could be differentiated in four major ways namely; firstly by their key categories of liabilities are characteristic sum that is fixed and doesn't relate with performance portfolio. Secondly, compared to their assets, the deposits are generally short-term compared to their assets. Thirdly, their liabilities' big percentage is in form of cheques which implies that on demand, they can be withdrawn. Finally, their assets as well as liabilities are usually not easily transferred. The critical aspect of an intermediary is that it facilitates a constant movement of finances from the surplus units to the deficit units and in this case from the banking institutions to customers or organizations.

Scholten and Van wensveen (2003) postulates that the function of the financial intermediaries basically to create specific fiscal products. These commodities are created each time an intermediary sell the commodities at prices that are anticipated to compensate all the cost of production (direct costs and opportunity costs). As per a “perfect” market scenario, which has neither transaction nor information costs, there would be no existence of financial intermediaries. There exists information asymmetry between buyers and sellers and in this case the banks and the customers.

The theory above emphasizes the roles played by financial intermediaries in achieving a sustainable economic growth and is therefore relevant to the study as it explains the concept of the flow/movement of funds from the customers who may be individuals and organizations to the financial institutions (Banks) who will make deposits in the

bank accounts out of which the banks will lend the excess funds to borrowers who may be experiencing deficit. The deposits may likely be made to the bank through mobile banking, RTGS, Cheque system, physical cash deposits e.t.c. This theory is hence expected to be of assistance in examining the commercial banks transactional behavior and how this behavior will impact on how the banks perform financially.

2.2.3 Institutional Theory

Institutional theory stresses that in societies where the work of the organization is directed by both activities and rational rules as originations are considered as systems. DiMaggio and Powell (1983) and Scott (2001) claimed that three kinds of institutional mimetic, normative and pressure-coercive govern the technology adopted by both firms as well as individuals. Coercive pressures are applied by firms or other institutions on social players to embrace the attitude recommended, conducts as well as practices since the later has depends on the former on resource. On the organization level, coercive pressure may be coming from resource organizations with dominant resources and regulatory organizations. Normative pressure arises when a particular organization willingly, but in an unconscious way emulate the attitudes, actions as well as practice that belongs other organizations. Though this emulation isn't pressed by big actors, a social actor that has not embraced innovation might feel uncomfortable when a peer he or she admires has embraced innovation (Di Maggio and Powell, 1983).

Mimetic pressure is associated with conscious and deliberate emulation of the practices of the competitors (Di Maggio and Powell, 1983). This theory will aid in explaining how fast commercial banks endeavor to institutionalize mobile banking at

their different levels of operation. As more banks introduce mobile banking products their competitors similarly are forced to change their mode of operations by introducing similar mobile banking products a situation which can loosely be likened to the old adage saying which states that if you can't beat them then join them.

2.3 Determinants of Financial Performance

Factors that determine how the bank will perform in an economy can be categorized as internal and external (Al-Tamini, 2010; Aburime 2005). They are random factors which influence the outcome. Factors that are internal are characteristics of a bank as predisposed by the decisions of the executive which affect the bank's performance and they can be controlled/managed. The external factors are factors which cannot be controlled by a firm and impact the bank's financial performance. How Kenyan commercial banks have been generally performing has been on an upward trajectory, However, there are banks declaring losses (Oloo, 2010). A study conducted by Olweny and Shipho (2011) concentrated majorly on sector-specific factors (with exception M-banking) that has an impact on how each banking institutions perform financially (specifically commercial banks).

2.3.1 Capital Adequacy

Capital is a precise factor that creates liquidity and refers to an amount of owners' funds which is available for supporting the business operations of a bank as well as serve as a shield in event of unexpected circumstances (Athanosglou et al. 2005). Capital offers protection against a bank run as well as significantly reducing the chances of distress. (Diamond, 2000). It refers to the capital that is required to sustain balance that is exposed to risks such as Credit, Operational

and Market risks. When deciding the capital adequacy it is important to meet minimum amount of capital required legally, and it is also critical to maintain a level of capital that is adequate.

Dang (2011) posits that capital adequacy is adjudicated as per the CAR which serves as an indication of the bank's internal ability to bear losses when a crisis occurs. The CBK prudential guideline needs banks to adhere to the given Capital Adequacy Prudential ratios. 10.5% and 14.5% are the lowest regulatory CARs as per measurement by the Core Capital ratio and Total Capital to Total Risk Weighted Assets in a respective manner. The Fundamental Capital to Total risk Weighted Assets was maintained at a constant value averaging at 16% in 2015 and 2016 whereas the Total Capital to Total risk weighted assets ratio stuck at approximately 19% during the years 2015 and 2016 (CBK).

2.3.2 Asset Quality

An asset of a bank is a specific variable which may alter the financial performance of a bank. Key among the bank's assets are credit portfolio, fixed asset, current asset and other investments. Loans are the main banks' assets used to create income and as such the loans' quality will directly impact the performance of commercial banks. A very high risk in a banking firm is the delinquent loan (Dang, 2011). This therefore dictates that banks should strive to ensure that the levels of nonperforming loans are out rightly low to enhance their performance, in fact non-performing loans that are low to total loans symbolizes that the bank portfolio has good health.

Low ratios indicate that the bank is performing better hence the lesser the ratio, the better the performance (Sangmi&Nazir, 2010). The Banking industry in Kenya experienced a rise in Non-Performing Loans (NPLs) by 45.5 % to hit the value 214.3 Billion Kenya shillings in the f last month of the year 2016 from 143.7 Billion Kenya shillings in December 2015. The ratio of gross NPLs to gross loans went up from 6.8% to 9.2% in December 2015 to in December 2016 respectively. The above decline in asset quality is as result of overdue payments from public and private entities as well as the poor weather patterns during the period under review (CBK, 2016).

2.3.3 Management Efficiency

It is an element which has an impact financial performance index of each and every commercial bank. Earnings growth, total asset growth and loan growth rate represents management efficiency. Particular evaluation of quality of staff, Organizational discipline, management systems, Control systems among others elements which could be employed to express the level of performance of the management of an institution. (Sangmi and Nazir 2010) indicated that ratio between the income and operating profit is used to measure how management is running the operations of a company. High incomes enhance efficiency of management while Operating expenses to total assets ratio is generally expected to affect financial performance in a negative way. According to (Asthanasoglou et al .2005) management quality is a determinant of the operating expenses level and therefore impacts financial performance.

2.3.4 Earnings

Among the earning (income) items within the banking sector include, Fees, interest on advances and commission for loans and advances, interest on placements and interest government securities (CBK 2016).

2.3.5 Liquidity management

It is defined as the capacity of the bank to realize its obligations to clients who are depositing funds. It has an impact on the performance index of the bank. Dang (2011), indicated that adequate level of liquidity positively influences bank's financial performance. The liquidity position of a bank can be determined through the following ratios; Client deposits to total assets and total loan to total client deposit. The average ratio of liquidity by December 2016 was 40.3 percent whereas 38.1 percent was registered in December 2015. The ratio increased due to greater augmentation in entire fluid assets as contrasted to the sum short-range liabilities growth. Total liquid assets registered an improvement of 12.1 percent whereas total short-term liabilities increased by 5.7 percent (CBK, 2016).

2.4 Empirical Review

2.4.1 International Evidence

Kegan et al. (2005) carried out an examination on the effects that online banking applications has on community banks' performance within the United States of America. The study majorly focused on banking that uses internet and its effect on how the community banks perform. An online banking index was created by adopting a structural equation model was adopted. An econometric model was used to appraise bank's performance. A survey involving ten community banks was conducted. After the experimental study was accepted, all community banks that had total assets a

lesser amount than one billion United States Dollars that operates in Iowa, Minnesota, Montana, South and North Dakota were identified and using the structural equation model to evaluate the various variables identified and used for examination to determine whether the index explicates the dissimilarities in the performance of banks in community. According to the obtained results, banks which present widespread ebanking services generally have a better performance than the banks that are lagging behind. Additionally; internet banking aids community banks to increase their ability to earn as per the measurement obtained by ROE, it also these banks to improve the quality of their assets. Since the study was carried out in an economy which technologically advanced, this study sought to discover how their counterparts in third world countries like Kenya will do.

Sumra et al. (2009) carried out studies on the effect the internet banking has on profits earned by Pakistani Banks. The research was performed by evaluating the qualitative aspects that determine the influence of e-banking. Its nature was explanatory and descriptive and was conducted by means of interviewing a sample of Pakistan's bank managers on the electronic services they provide. The research revealed that mobile banking has led to increase of the amount of profit earned by the banks by enabling them to bear their costs and to make profits even in a span of time which is relatively short. The study was carried out in a setting that may have similarities with that of Kenya, hence the necessity to find out whether adopting mobile banking would have the same effect on a bank's performance.

Al-Smadi and Al-Wabel(2011) carried out a research to study the effect mobile banking has on the Jordan's bank performance for the period between 2000 and 2010.

Accounting data was used to measure how the bank is performing using regression analysis. The obtained results revealed that mobile banking is accompanied with a substantial negative impact on the banks' performance since Jordan's financial institutions often depend on traditional channels in offering banking services, hence the its adoption has the associated costs that are higher than the incremental incomes. The study was conducted in a society where confidence of e-banking is low unlike the Kenyan market where the population has embraced technology .It was therefore important to investigate whether many of the innovations in e-banking and mobile banking products adopted in Kenyan finance industry has an effect on their performance.

2.4.2 Local Evidence

Muriuki (2009) pinpointed the ideal aspects impacting the acquisition of e-banking technology by Kenyan Micro finance Institutions. The research was aimed to assess the issues which affect the use of internet banking by Microfinance institutions in Kenya and to rank performance of such factors. A research design that is descriptive was adopted in the research. Data collection was done using a questionnaire administered to each respondent. Among the factors were organizational factors, perceived technological factors, perceived external factors. As per the findings of the study institutions with strong support to e-banking from top management stands a better chance to adopt it. Those MFIs with the requisite information technology and business resource for e-banking adoption are considered to be having a high probability adopting e-banking. MFIs are not exempt from technological advancement especially for fast service delivery and therefore to remain relevant and reap the benefits that come with technology including improved financial performance.

Ombati et al. (2010), studied the how technology relate to quality of services provided by the banks Kenya. Cross-sectional survey design was used to question respondents on e-banking services. The study's population mostly comprised of banks' customers in the heart of Nairobi city with a sample size of 120. Data analysis was done using percentage, frequency, correlation analysis and means. According to the research data, technology is directly related to the quality of service. This can serve as an indication of how the bank is performing at the moment. There are various elements which must be considered when providing banking services in an electronic manner, these factors include; efficiency, security, accuracy of records, accuracy of the transactions and convenience are vital when it comes to adopting online banking thus it requires the measurement of the impact of adopting e-banking on the financial performance.

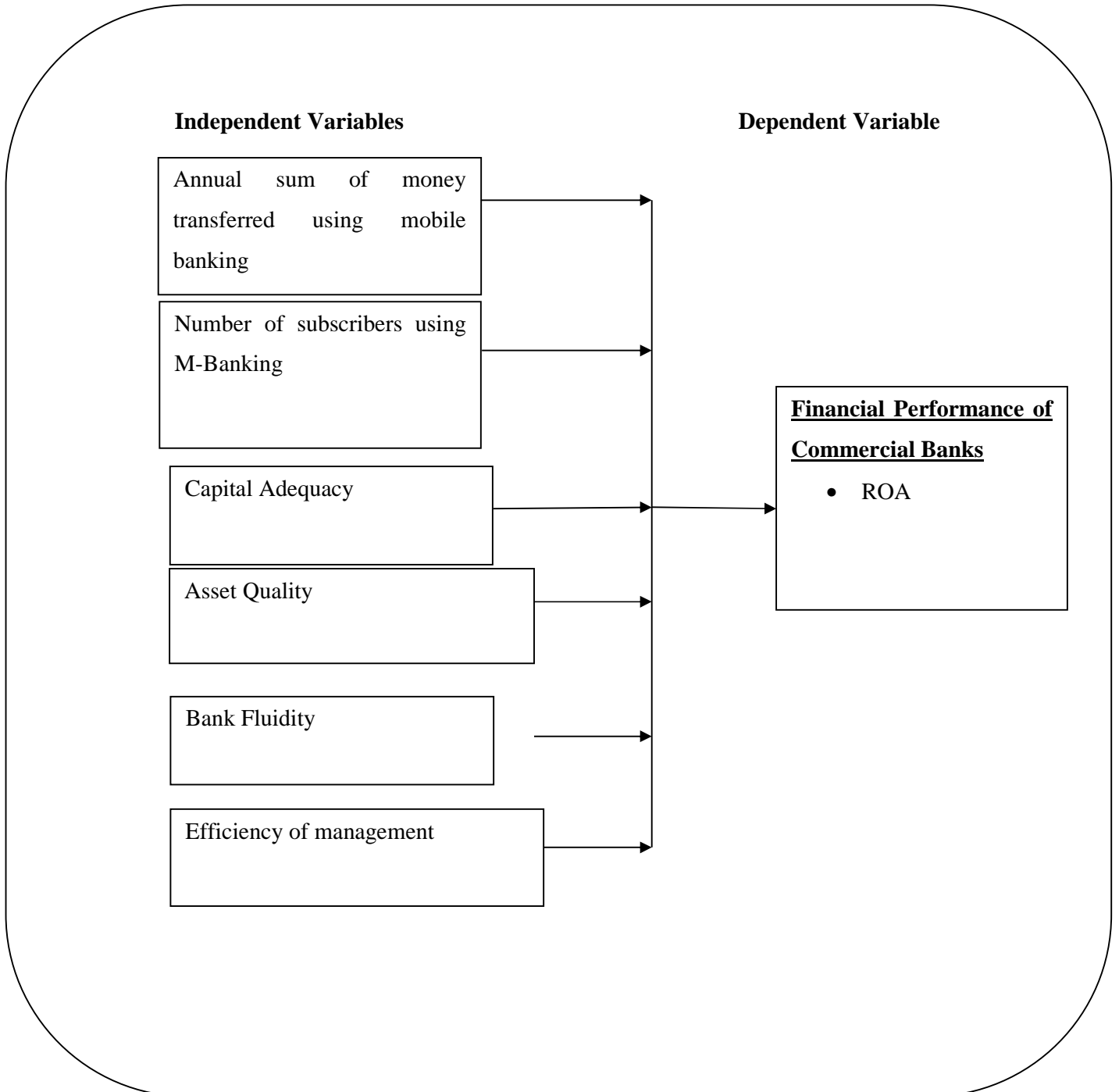
The relationship between performance of Kenyan banking systems and online banking was investigated by Aduda & Kingoo (2012). The secondary data obtained from the target banks' annual reports were employed in the study and descriptive as well as inferential statistics were used in data analysis. Results showed that an important relationship which is likely to yield positive outcome exist between electronic-banking and banks' performance due to the fact that e-banking has brought services closer to the clients hence improvement in performance of the banking sector. Because the research was focused on commercial banks operating mainly in metropolitan regions, it's crucial to consider the extending the research to cover MFIs because the current technologies are mainly focused on improving banking services in marginalized areas and customers not be able to access services offered by commercial banks. This study examined whether commercial bank's services can be

adopted and work for other financial institutions like Deposit taking Microfinance institutions.

2.5 Conceptual Model

The conceptual model depicts how the variables relate to one another that is either positively or negatively or both. The variables defined here are the independent variables which are exploratory in nature and the dependent variables which are responsive in nature. Additionally; there are control variables which are extraneous factors which possibly influence the experiment or the study. An independent variable would influence and determine the effect of another variable. In this study Mobile banking was the independent variable while performance which was further broken down into ROA was the dependent variable. Dependent variables are factors that are observed and measured to establish the impact on the independent variables. In my study the expected relationship among the variables are illustrated in Fig 2.1 in the subsequent page.

Fig 2.1 Conceptual Model



2.6 Summary of Literature Review

The earlier research done both locally and internationally, focused mainly but not exceptionally on deposit taking micro finance institutions (DTMs), community banks and Microfinance institutions and at times under highly technologically advanced economies or environments such as the USA and Pakistan. The term e-banking has also been widely used by the researchers even though they agree that indeed it can be used interchangeably with Mobile banking. This study considered commercial banks with a national outlook. From the analysis of both the theoretical as well as empirical review, there was a mixture of evidence concerning the influence of mbanking on commercial banks' financial performance.

Various organizations have measured e-banking by use of different parameters and the findings obtained differ. With the passing of the microfinance act (2006), many commercial banks have been established and they offer similar services to commercial banks to the marginalized customers. Most of these commercial banks have adopted mobile banking whose effect to their performance is yet to be fully established hence the need to establish to what extent has the banks benefited from the adoption and use of mobile banking.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The section provides a concise narrative of the methodology that was utilized during the study.

3.2 Research Design

The research employed a descriptive research plan since it enabled the researcher to have a proper description of the level of interaction or/and relationship among the variables that was in this case the influence of mobile banking on commercial banks' financial performance. It also involved using quantitative data and describing the categories of qualitative information such as patterns of interaction under technology adoption. The quantitative data was used to measure the strengths or links among the variables (Mugenda&Mugenda, 2009).The quantitative data which was used in this study appeared in numerical form in the form of statistics percentages.

3.3 Target Population

Population is simply a group of people, elements or events sharing a common observable characteristic. Target population was the one that the researcher wanted to generalize the study's findings (Mugenda&Mugenda, 2009) .This study's populationwas composed of the forty three (43) commercial banks registered in the Country as at end of June 2018. (Appendix X).

3.4 Data Collection

This research utilized derived statistics which was captured from the CBK's website, published commercial banks financial reports, newsletters, information from the websites among other relevant publications pertaining to e-banking and financial performance of Kenyan financial institutions.

3.5 Data Analysis

According to Bryman along with Bell (2003), Data Analysis refers to a procedure used to make inferences from data collected by means of a systematic and objective identification of specific characteristics. Once data is collected it has to be edited, coded and then entered with a view of translating the data gathered to a means for screening and exploitation i.e; excel or statistical package for social sciences (SSPS) and lastly displayed through the use of frequency tables and charts.SPSS tool was utilized in analyzing the data obtained after which a regression analysis was conducted on the data to come up with relevant tables that addressed the impact of M-banking on financial performance of Kenyan commercial banks.

3.5.1 Analytical Model

The multiple regression model as supported by Kingoo (2011) in the study of the association linking electronic banking and financial performance of commercial banks in Kenya. Multiple Regression analysis was therefore applied in the process of analyzing the effect of M-banking on the financial performance of Kenyan commercial banks.ROA was applied in the process, the overall operating cost and other bank specific factors providing information about ratios as autonomous variables.

The following multiple regression equation was enforced:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \epsilon$$

Where;

Y= Financial Performance of commercial banks as measured by ROA.

β_0 = Constant Term (the value of performance when all variable are held to constant zero)

β_j , j=1,2,3 Beta/correlation/regression coefficient (a parameter estimate that measures the effect that Mobile banking has on Performance/ROA

ϵ = Other control variables

X_1 = Yearly sum of money transferred using mbanking (to consider deposits and transfers in the period in review)

X_2 = Number of subscribers using M-Banking during the period

X_3 =Capital Adequacy expressed as Equity Capital to Total Assets

X_4 = Asset Quality expressed as loans loss provisions to Total loans

X_5 =Bank Fluidity expressed as Total loans to Total assets

X_6 =Efficiency of management expressed as operating costs to total income

3.5.2 Test of Significance

This study tested the model's strength and the impact of M-banking on how commercial banks in Kenya perform financially by conducting an analysis of variance (ANOVA) which informed the significance value. The study was tested at 95%

confidence level and 5% significance level. The expected value was within the acceptance zone for the test to be true.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This part considers the analysis as well as the outcome of the study. It portrays the analysis of the data to determine the effect of mobile banking on the financial performance of commercial banks in Kenya in addition to highlighting the fundamental outcomes.

4.2 Descriptive Statistics

The study focused on finding out the number of mobile banking users in various commercial banks and the quantities of money transacted through Mobile Banking. Additionally it encapsulates various bank specific factors influencing the financial performance of commercial banks. The outcomes are tabulated below;

Table 4.1: Summary of the Study Variables

	2013	2014	2015	2016	2017	Mean	Standard Deviation
Annual amount of money moved through Mobile Banking	4,205,979,403	3,480,231,527	4,139,980,364	4,268,157,357	7,564,702,835	4,731,810,297	1258094659
Number of users of Mobile Banking	9566	12319	14950	21326	25239	16680	5378.22168
Capital Adequacy	0.09562981	0.139297091	0.134878918	0.148324664	0.151846477	0.133995	474242540.1
Asset Quality	0.004453841	0.0755381	0.09092852	0.120888383	0.22889	0.104139	2688955

							20.3
Bank Liquidity	2.8265029	0.55348698	0.5855096	0.596359	0.5406	1.020491	8.2152
Management Efficiency	-0.27993451	1.9709959	11.979427	-12.6211	12.512	2.712294	11.401

Source: Research Findings (2018)

Based on the findings in Table 4.1 the annual amount of money transferred through mobile banking has been on an upward trajectory since the year 2013, 2017 had the highest figure at Kshs 7,564,702,835, equally the number of users of mobile banking too had been on an upward trend since 2013 with a 25239users in 2017, the same trend is maintained by capital adequacyand Asset quality where the highest value was recorded in 2017 with0.15 and 0.2288 respectively. On the other hand Bank fluidity and Management efficiency posted mixed results during the period of study with the peak of bank fluidity being in 2013 at 2.8265029 and Management efficiency being highest in 2017 at 12.512.

4.3 Regression Analysis

This study utilized a multiple regression analysis which was undertaken to assess the association between the experimental variables. The study involved (SPSS V 21.0) and obtained the following;

Table 4.2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.392 ^a	.154	.121	.02761

Source: Research Findings (2018)

a. Predictors: (Constant), Management Efficiency, Capital Adequacy, Asset Quality, Value_of_Money_Transferred through Mobile Banking, Bank Fluidity, Number_of_MobileBank Customers

R² is a frequently used statistic to evaluate model fit, it is 1 minus the ratio of residual variability. The adjusted R Square is the percentage of the variance in the dependent explained uniquely or jointly by the independent variables. 15.4% of the financial performance of the commercial banks in Kenya can be attributed to the combined effect of the experimental variables.

Table 4.3: Summary of One-Way ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.021	6	.004	4.638	.000 ^b
	Residual	.117	153	.001		
	Total	.138	159			

Source: Research Findings (2018)

a. Dependent Variable: ROA

b. Predictors: (Constant), Management Efficiency, Capital Adequacy, Asset Quality, Value_of_Money_Transferred through mobile banking, Bank Fluidity, Number_of_Mobile Banking Customers

The p value of 0.000 shows that the regression relationship was highly significant in predicting how mobile banking affect ROA of commercial banks in the Country. The F calculated at 5% level of significance was 4.638 and since F calculated is greater than the F critical (value = 3.87), it implies the significance of the overall model in the study.

Table 4.4: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.019	.007		2.676	.008

Value_of_Money_Trans	1.881E-012	.000	.535	2.871	.005
No_of_Mobile_Bank_Cust	-2.466E-007	.000	-.240	-1.281	.202
Cap_Adeq	.062	.044	.113	1.398	.164
Asset_Quality	-.038	.011	-.283	-3.596	.000
Bank_Fluid	-.002	.001	-.127	-1.560	.121
Manag_Eff	-1.600E-007	.000	.000	-.005	.996

a. Dependent Variable: ROA
Source: Research Findings (2018)

Based on the above SPSS generated table, the coefficients in the model developed for the study are replaced with the coefficients obtained in the study to reveal the equation illustrated below.

$$Y = 0.019 + 1.88 \times 10^{-12} X_1 - 2.466 \times 10^{-7} X_2 + 0.062 X_3 - 0.038 X_4 - 0.002 X_5 - 1.6 \times 10^{-7} X_6$$

Where;

Y= Financial Performance of commercial banks expressed as ROA.

= Constant Term (the value of performance when all variable are held to constant zero)

j, j=1,2,3 Beta/correlation/regression coefficient (a parameter estimate that measures the effect that Mobile banking has on Performance/ROA

€= Other control variables

X₁= Yearly sum of money transferred using mobile banking (to consider deposits and transfers over the duration of the study)

X₂= Number of subscribers using M-Banking during the period

X₃=Capital Adequacy expressed as Equity Capital to Total Assets

X₄= Asset Quality expressed as loans loss provisions to Total loans

X₅=Bank Fluidity expressed as Total loans to Total assets

X₆=Efficiency of management expressed as operating costs to total income

The multiple regression equation above has clearly demonstrated that individually the Value of annual amounts of money transferred through mobile banking as well as asset quality significantly impacted on the banks' return on assets. Consequently, holding every single one of the independent variables at a constant zero the financial performance of commercial banks in Kenya will be 0.019.

The outcomes above equally depict that, a unit increase in the annual amount of money moved through mobile banking would lead to a 1.88×10^{-12} increase in the Return of assets of commercial banks in the Country while a unit increase in asset quality would amount to a decrease of 0.038 in the ROA of commercial banks in the country. Generally, the value of money transferred through mobile banking greatly impacted on the financial performance of commercial banks in Kenya while two variables, Value of annual amount of money transferred through mobile banking and asset quality were significant (p-value<0.05).

4.4 Interpretation of the Findings

The study established that there were mbanking variables influencing the ROA, they are the value of annual amount of money transferred via mbanking, number of customers registered on mbanking platform, capital adequacy, asset quality, bank liquidity and management efficiency.

However, two predictor variables; value of annual sums of money transferred via mbanking along with asset quality were of great significance. The study established that the intercept was .019 throughout the period of the study. The six experimental variables considered in the study contributed to 15.1% of the financial performance of commercial banks in Kenya while 84.6% of the ROA are caused by other factors not included in the model. The study established that the coefficient for value of annual amount of money transferred through mobile banking was 1.88×10^{-12} , indicating that the value of annual amount of money moved through mobile banking positively and significantly impacted on the ROA of commercial banks in the Country. The study further established that the coefficient for asset quality was -0.038 which meant that asset quality negatively but significantly impacted on the ROA of commercial banks in the country.

Dang (2011) argues that the bank's asset is another bank specific variable that affects the financial performance of a bank. The bank's asset includes among others current assets, credit portfolio, fixed assets, loans which are advanced to customers and other investments. The loans quality influences the financial performance of banks and it has a direct impact on the bank's ROA. Moreover, the study found out that the corresponding coefficient for bank fluidity was -0.002 , implying that bank liquidity negatively and insignificantly impacted on the ROA. Among the financial ratios that mirrors the liquidity position of a bank according to Dang (2011) are deposits to total assets and total loans to deposits. Other scholars utilized various other financial ratios to measure liquidity among them Ilhomovich (2009) used cash to deposit ratio to measure the liquidity level of banks in Malaysia. However, the study conducted in

China and Malaysia found that liquidity level of banks has no relationship with the performances of banks.

Lastly the coefficient for management efficiency was $X_5-1.6 \times 10^{-7}$, implying that management efficiency negatively and insignificantly impacted on the ROA of commercial banks in country. The above outcome is contrary to (Athanasoglou et al., 2005) who argues that management quality determines the level of operating expenses and in turn affects financial performance. Management Efficiency is the capacity of the administration to position its resources efficiently, maximizing incomes as well as reduction of the operational overheads. This can be considered through financial ratios among them operating profit to income ratio. The higher the operating profits to total income (revenue) the more the efficient management is in terms of operational efficiency and income generation.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This section provides a summary, conclusion and recommendations of the key outcomes on the relationship between mobile banking and financial performance.

5.2 Summary

Mbanking is an electronic service provided by financial institutions in cooperation with telecommunication companies. It conveniently facilitates the unbanked customers often found in rural areas. The innovative National Industrial Corporation (NIC) mobile banking platform promises a number of “firsts” within the banking industry and Information Technology fields. The study sought to determine the effect of mobile banking on 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 mbanking in Kenya were studied.

The study made use of derived statistics particularly from CBK’s annual Banking Supervision reports in addition to the only available Audited Financial statements of the Banks, those deposited at the NSE. The data was then sanitized, coded and systematically organized in a manner that facilitates analysis using the Statistical Package for Social Sciences (SPSS). Quantitative analysis was analyzed through descriptive statistics such as measure of central tendency that generated relevant percentages, frequency counts, mode, and median and mean where possible. To test

for the strength of the model and the effects of mobile banking on the financial performance of commercial banks in Kenya, the study conducted an Analysis of Variance (ANOVA).

Based on the regression model, the study established that there were mobile banking factors impacting on the ROA of commercial banks in the country, which were values of yearly amount of money transferred through mbanking and the numbers of users of mbanking. Other factors such as capital adequacy, asset quality, bank liquidity and management efficiency not necessarily mobile banking related were also included and their impact varied. The research further established that the intercept was 0.019 for the duration of the study. The six predictor variables that were considered elucidate that a substantial 15.4% of ROA of commercial banks in the country as demonstrated by the adjusted R square (0.154). The study therefore concludes that mobile banking positively and significantly affects the financial performance of commercial banks in Kenya. Additionally, the overall model is significant and it can therefore be used to explain ROA of commercial banks in the country.

5.3 Conclusion

The study concludes that mbanking has contributed positively to the financial performance of commercial banks in Kenya. This could be linked to the patterns noted in the variables in which the value of annual amounts of money transferred through mbanking and the asset quality had a significant influence to ROA of commercial banks in Kenya. This correlates with Wahome (2009) who opined that stiff competitions exist among banks in Kenya to an extent that a number operate throughout the week in a bid to attract more potential customers. They are vigorously

and persistently pursuing growth in their loan books. It therefore implies that the more clients a bank has in the mbanking platform and the higher the amount of money transacted through mbanking the better the financial performance of a commercial bank.

5.4 Policy Recommendations

The study recommends that strategy formulators regard mbanking in their formulation of policies because of the technological advancements and the systematic changeover from branch networks to technologically supported banking services. This is because despite negligible relationship between mobile banking and financial performance of commercial banks in Kenya, the impact could be humongous if much change is recorded in technological advancements and more clients embrace mbanking services banking has significantly impacted on the financial operations of commercial banks particularly in regards to cost cutting measures such as reducing the operational costs. This in turn enables commercial banks that have adopted mobile banking to have a competitive advantage and this will impact positively on their profitability margins.

5.5 Limitations of the Study

Mobile banking is a relatively new technology and not very many studies have been done especially on its effect on the financial performance of commercial banks. The few studies that have been done have greatly focused on its adoption. Moreover, the banking industry is very competitive and as such, the banksmanagement has not disclosed much information for fear of competition and legal battles.. The extent of the study was limited by time to collect more data from the respective banks, which may have led to improved conclusions as well as the untimely response by banks to

the data request. Equally; confidentiality clause within the banking industry surrounding the disclosure of information to third parties was also a major hindrance as provision of data considered ‘sensitive’ could not be disclosed.

5.6 Recommendation for Further Research

The study infers that supplementary research be undertaken on the association linking mbanking and financial performance noncommercial banks in the country considering that a score of 84.6% of financial performance could be attributed to other variables not used in this study. Moreover, this study purely paid attention to the Kenyan market nonetheless mbanking has been embraced in majority of the member Countries in the Sub Saharan region. The study advances that other studies be carried out in the country on the correlation on mbanking and economic development to ascertain the contributions of mbanking on the expansion of the country’ s economy.

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APPENDICES

Appendix I: List of Commercial Banks as at 30th June 2018

1. African Banking Corporation Ltd
2. Bank of Africa Kenya Ltd
3. Bank of Baroda(K) Ltd
4. Bank of India
5. Barclays Bank of Kenya Ltd
6. Charterhouse Bank Ltd (Under Statutory Management)
7. Chase Bank (K) Ltd (Under Receivership)
8. Citibank N.A (K)
9. Commercial Bank of Africa Ltd
10. Consolidated Bank of Kenya Ltd
11. Co-operative Bank of Kenya Ltd
12. Credit Bank Ltd
13. Development Bank (K) Ltd
14. Diamond Trust Bank(K) Ltd
15. DIB Bank (K) Ltd
16. EcoBank (K) Ltd
17. Equity Bank Ltd
18. Family Bank Ltd
19. First Community Bank Ltd
20. Guaranty Trust Bank (K) Ltd
21. Guardian Bank Ltd
22. Gulf African Bank Ltd
23. Habib Bank A.G Zurich
24. I & M Bank Ltd
25. Imperial Bank Ltd (IN RECEIVERSHIP)
26. Jamii Bora Bank Ltd
27. Kenya Commercial Bank Ltd
28. Mayfair Bank Ltd
29. Middle East Bank (K) Ltd
30. M-Oriental Bank Ltd

31. National Bank of Kenya Ltd
32. NIC Bank Ltd
33. Paramount Bank Ltd
34. Prime Bank Ltd
35. SBM Bank (K) Ltd
36. Sidian Bank Ltd
37. Spire Bank Ltd
38. Stanbic Bank (K) Ltd
39. Standard Chartered (K) Bank
40. Trans-National Bank Ltd
41. UBA (K) Bank Ltd
42. Victoria Commercial Bank Ltd

SOURCE: Central Bank of Kenya (www.centralbank.go.ke)

Appendix II: Research Data

Number	BANK	Year	ROA	Annual Amount of Money Transferred	Number Of Customers on Mobile Banking Platform	Capital Adequacy	Asset Quality	Bank Fluidity
1	KCB	2013	0.0591	3,653,681,000	11031	0.1637	0.0137	0.72283429
		2014	0.0593	3,982,191,000	12349	0.1533	0.052	0.682812115
		2015	0.0501	4,457,989,00	13601	0.1199	0.059	0.693298214
		2016	0.0564	4,457,989,000	52120	0.1438	0.07595341	0.739000729
		2017	0.0494	18,815,320,000	65794	0.1295	0.0830333333	0.740899519
2	Equity Bank Limited	2013	0.0799	9,288,169,000	30250	0.179148089	0.015661259	0.709875144
		2014	0.0726	10,920,250,000	45320	0.146988987	0.038704897	0.696361812
		2015	0.0656	16,360,520,000	49320	0.139627749	0.029782819	0.672061266
		2016	0.06	16,360,520,000	53461	0.134952297	0.06992889	0.582065601
		2017	0.0568	19,299,421,000	57508	0.145663653	0.066568034	0.545514048
3	COOP BANK	2013	0.0794	23,180,893,000	71128	0.129254524	0.004534234	0.724267501

		2014	0.0443	25,677,208,000	96152	0.13252019	0.044009483	0.641588459
		2015	0.0414	34,710,872,000	114124	0.127471654	0.038498244	0.626449713
		2016	0.0515	34,710,872,000	123692	0.148357991	0.046699441	0.689703227
		2017	0.0431	44,652,812,000	138863	0.153747094	2.587665929	0.018890892
4	BARCLAYS BANK	2013	0.0501	9,574,081,000	30681	0.139930438	0.021401241	0.769880682
		2014	0.0544	11,075,841,000	35253	0.168021129	0.035521513	0.567166424
		2015	0.0501	12,726,333,000	42063	0.146873562	0.035849133	0.617226408
		2016	0.0402	12,726,333,000	46120	0.144960655	0.065052995	0.679575681
		2017	0.0368	16,649,320,000	52012	0.14269624	0.071181104	0.652321464
5	Standard Chartered Bank Ltd	2013	0.0572	1,514,756,000	6419	0.138774011	0.00194189	0.684197638
		2014	0.0642	2,317,259,000	10941	0.130005929	0.083499006	0.578379058
		2015	0.0383	3,949,701,000	12126	0.142052953	0.1195883	0.524941165
		2016	0.051	3,949,701,000	15618	0.140877598	0.11349661	0.529409168
		2017	0.0334	5,638,098,000	17572	0.124955721	0.126400585	0.488929417
6	Stanbic Bank	2013	0.0394	20,883,489,000	63470	0.106023687	0.003633607	0.660871806

		2014	0.0431	22,912,670,000	70693	0.149328556	0.037529093	0.524065201
		2015	0.0356	25,520,173,000	97540	0.130331658	0.046921331	0.521382026
		2016	0.0337	25,520,173,000	123086	0.141003929	0.059189876	0.578262525
		2017	0.0234	44,434,046,000	149499	0.136039731	0.076482358	0.565741329
7	Commercial Bank of Africa	2013	0.1066	564,604,000	3457	0.138899121	0.009712292	0.905326628
		2014	0.0257	1,247,977,000	4230	0.078374827	0.040683307	0.527089057
		2015	0.0314	1,527,030,000	4650	0.086148002	0.043860219	0.542527357
		2016	0.036	1,527,030,000	5940	0.090327109	0.070896913	0.498307789
		2017	0.0313	2,144,340,000	6650	0.088853066	0.072852632	0.466345714
8	Diamond Trust Bank Kenya	2013	0.0528	201,077,000	592	0.130353263	0.004262517	0.78136609
		2014	0.0447	213,712,000	628	0.157569275	0.012586869	0.674746416
		2015	0.0369	226,708,000	8260	0.133130486	0.028503267	0.671732618
		2016	0.0364	226,708,000	1290	0.12174141	0.038954913	0.580452065
		2017	0.0305	465,690,000	4055	0.13086396	0.075878426	0.580723632
9	I & M Bank	2013	0.0484	1,306,820,000	4523	0.136562239	0.003083915	0.966387469

		2014	0.0564	1,632,803,000	8275	0.139272682	0.020984391	0.663974246
		2015	0.0566	2,987,275,000	10843	0.159348241	0.048628022	0.705477321
		2016	0.0527	2,987,275,000	101162	0.150411904	0.048627948	0.635539253
		2017	0.0409	36,519,482,000	132980	0.16194354	0.13914461	0.690301327
10	Citibank, N.A.	2013	0.0142	2,649,740,000	9356	0.146681077	0.010010877	1.43246354
		2014	0.0522	3,377,516,000	10811	0.221567294	0.035899108	0.30908839
		2015	0.0633	3,902,771,000	10112	0.20928676	0.06386591	0.314054931
		2016	0.0584	3,902,771,000	15243	0.178854864	0.028503869	0.273332236
		2017	0.0649	5,502,723,000	16487	0.193796319	0.045273109	0.387653718
11	NIC Bank Ltd	2013	0.0427	1,869,619,000	6241	0.050993207	0.001369875	0.620004074
		2014	0.0444	2,253,001,000	7293	0.13732885	0.060918109	0.714757782
		2015	0.0399	2,632,773,000	7342	0.137335579	0.118568373	0.709904186
		2016	0.0366	2,632,773,000	8461	0.15681477	0.11243545	0.695156537
		2017	0.0294	3,054,421,000	8867	0.143410591	0.111979672	0.61435973
12	National Bank(NBK)	2013	0.0307	769,652,000	2250	0.045138551	0.007879331	0.811142465

		2014	0.019	812,250,000	3398	0.084181826	0.106281116	0.554209905
		2015	-0.0134	1,226,678,000	301	0.078087713	0.161472777	0.581363981
		2016	0.0014	1,226,678,000	3562	0.087157079	0.437028133	0.59606755
		2017	0.0067	1,285,882,000	2584	0.031862255	0.405822194	0.619899583
13	Bank of Africa	2013	0.0266	2,584,399,000	9362	0.096824403	0.00351728	1.441869294
		2014	0.0033	3,379,682,000	11905	0.098132193	0.061474156	0.630682184
		2015	-0.0207	4,297,705,000	15398	0.100606236	0.237224589	0.592883949
		2016	-0.0003	4,297,705,000	17531	0.099739267	0.287992367	0.669336381
		2017	0.0006	6,328,691,000	20571	0.091269768	0.314716127	0.61982617
14	Bank of Baroda (K) Ltd	2013	0.0614	1,021,991,000	2956	0.087539887	0.000355164	1.471685056
		2014	0.0435	1,067,116,000	3012	0.150520623	0.036721605	0.468189523
		2015	0.0365	1,087,332,000	3201	0.163997184	0.073272789	0.473217167
		2016	0.0467	1,087,332,000	3561	0.162905424	0.089053414	0.459424415
		2017	0.0526	1,285,521,000	3807	0.168549494	0.060669504	0.457111056
15	Prime Bank Limited	2013	0.0254	971,451,000	2935	0.050625746	0.004543334	1.371363296

		2014	0.0418	1,059,535,000	3064	0.12240067	0.018996007	0.638406351
		2015	0.0399	1,106,104,000	3203	0.128474947	0.023764327	0.640251688
		2016	0.0357	1,106,104,000	3561	0.14908629	0.046178729	0.614803177
		2017	0.0259	1,285,521,000	3773	0.14621	0.056635566	0.520199377
16	Victoria Commercial Bank	2013	0.0245	551,247,000	1738	0.06720903		3.930885371
		2014	0.0368	627,418,000	1861	0.15164695		0.636685224
		2015	0.0338	671,821,000	1986	0.166933067		0.655544456
		2016	0.0355	671,821,000	2937	0.216444226		0.682624202
		2017	0.0327	1,060,257,000	3337	0.206388301		0.218587647
17	Housing finance	2013	0.0297	2,618,694,000	9870	0.033664849	0.001928959	1.64628382
		2014	0.0212	3,563,070,000	10967	0.080028434	0.089991353	0.764741862
		2015	0.0252	3,959,087,000	15693	0.117644494	0.075003661	0.793849642
		2016	0.0212	3,959,087,000	20130	0.125123008	0.109059416	0.834039216
		2017	0.0063	7,266,930,000	24760	0.133565117	0.156032681	0.847135706
18	Ecobank Kenya Ltd	2013	0.0104	1,705,003,000	5238	0.057224917	0.009648914	1.780583629

		2014	-0.0109	1,890,918,000	6532	0.11057169	0.102048433	0.525014151
		2015	0.0018	2,358,052,000	8651	0.173250424	0.079088732	0.589429111
		2016	-0.0613	2,358,052,000	9821	0	0.195636492	0.581288515
		2017	-0.0268	3,545,381,000	11624	0.107883119	0.386232289	0.401376833
19	Family Bank	2013	0.0355	2,972,835,000	9721	0.035884233	0.005750841	1.394128871
		2014	0.0424	3,509,281,000	11031	0.164754987	0.071747184	0.64195234
		2015	0.0355	3,982,191,000	13202	0.139536889	0.060629582	0.714065772
		2016	0.0091	3,982,191,000	14201	0.17254292	0.131158023	0.770323482
		2017	-0.0199	5,126,561,000	15981	0.15686956	0.201968974	0.679613619
20	Bank of India	2013	0.0178	358,473,000	1075	0.023501839	0.004407504	1.845415188
		2014	0.0374	388,075,000	1153	0.171719523	0.005708313	0.361885365
		2015	0.0349	416,233,000	1259	0.164789033	0.020252601	0.426274221
		2016	0.0457	416,233,000	1615	0.179316114	0.014053783	0.404772979
		2017	0.0472	583,015,000	1804	0.188324416	0.02094266	0.366777913
21	Consolidated Bank of Kenya	2013	-0.0517	1,708,252,000	4728	0.070623994	0.000674528	3.365397223

		2014	-0.0182	1,706,808,000	5912	0.072162897	0.261099758	0.714067785
		2015	0.0035	2,134,232,000	6521	0.076825127	0.192811423	0.718378608
		2016	-0.0199	2,134,232,000	6931	0.053599655	0.197531151	0.741296163
		2017	-0.0326	2,502,091,000	7474	0.026307967	0.251062538	0.734393579
22	Gulf African Bank	2013	0.0183	906,832,000	3108	0.114239442	0.00172008	3.37710228
		2014	0.0311	1,121,988,000	3254	0.154702845	0.073429059	0.712159563
		2015	0.0442	1,174,694,000	3516	0.156874646	0.088124054	0.641903375
		2016	0.0278	1,174,694,000	4216	0.1560981	0.096908923	0.614441376
		2017	0.0081	1,521,976,000	4624	0.135617576	0.097398729	0.643249457
23	African Banking Corporation	2013	0.0646	2,205,349,000	6312	0.077906207	0.004298282	2.857833902
		2014	0.0149	2,278,632,000	7236	0.089929568	0.065492489	0.630299921
		2015	0.0161	2,612,196,000	7538	0.098875691	0.172287296	0.704415632
		2016	0.0099	2,612,196,000	7936	0.105610561	0.189056051	0.669966997
		2017	0.0082	2,864,896,000	8270	0.100306402	0.215930609	0.660014514
24	Development Bank of Kenya	2013	0.0035	1,791,282,000	5079	0.130671972	-0.000351534	3.350041717

		2014	0.0188	1,833,519,000	5716	0.102925563	0.141663095	0.550430577
		2015	0.0105	2,063,476,000	6183	0.102992386	0.205630086	0.536740837
		2016	0.0058	2,063,476,000	6293	0.105859423	0.257276695	0.614114387
		2017	0.0035	2,271,773,000	6641	0.099080882	0.215686275	0.65625
25	Guardian Bank	2013	0.0455	1,106,465,000	3452	0.0918582	0.004141201	4.049006623
		2014	0.0259	1,246,172,000	3856	0.118660353	0.076444876	0.706540388
		2015	0.0225	1,392,016,000	4321	0.135806695	0.103667137	0.679444178
		2016	0.0205	1,392,016,000	4523	0.146140768	0.081944255	0.653117307
		2017	0.0144	1,632,803,000	4900	0.14598494	0.10890032	0.651964817
26	First community Bank	2013	0.0373	344,394,000	964	0.10048651	0.000492427	4.611322424
		2014	0.0067	348,004,000	1191	0.093140463	0.151951952	0.653881398
		2015	0.0007	429,951,000	2014	0.103948539	0.240808186	0.789160337
		2016	-0.0028	429,951,000	2135	0.097781045	0.323076175	0.797084614
		2017	0.0125	770,735,000	2724	0.081048387	0.40009095	0.633352535
27	Transnational Bank Limited	2013	0.0485	3,491,592,000	9995	0.092151584	0.002173132	5.284530959

		2014	0.0186	1,711,501,000	12262	0.177148438	0.080042366	0.645410156
		2015	0.0239	2,885,112,000	14723	0.183043767	0.099877367	0.696762556
		2016	0.0153	2,885,112,000	20352	0.188150979	0.126808371	0.671414238
		2017	0.0052	17,577,090,000	23869	0.183389995	0.216564834	0.715395823
28	Credit Bank Ltd	2013	0.0323	14,895,582,000	4163	0.097277329	0.000979246	6.84348064
		2014	-0.0102	671,821,000	7441	0.125437112	0.099541362	0.664072194
		2015	-0.0174	325,622,000	9422	0.130747545	0.069707634	0.718188004
		2016	0.13	325,622,000	14631	0.198574004	0.080855054	0.685186035
		2017	0.0124	145,122,000	17688	0.179329416	0.086225543	0.703145524
29	MOriental Comm. Bank	2013	0.007	7,621,432,000	4920	0.088768374	0.000502963	7.105751391
		2014	0.0107	1,469,631,000	8522	0.176508017	0.108704214	0.646220412
		2015	0.0049	1,439,307,000	10747	0.239053672	0.148871372	0.657015066
		2016	0.0036	1,339,327,000	16551	0.271975806	0.120415659	0.716603831
		2017	0.011	343,672,000	19969	0.262834452	0.104508461	0.731871041
30	Paramount-Universal Bank	2013	0.0178	1,429,921,000	5677	0.066259808	0.000466985	6.249470669

		2014	0.0132	755,934,000	9604	0.126321861	0.197253665	0.518073447
		2015	0.016	1,068,560,000	12073	0.137754133	0.125674634	0.616093483
		2016	0.0111	1,068,560,000	18471	0.164951734	0.124622568	0.662230826
		2017	0.0101	1,368,190,000	22250	0.16298082	0.122616233	0.665024631
31	Middle East Bank of Kenya	2013	0.0111	18,396,560,000	6434	0.076829691	0.002013672	8.640825529
		2014	0.0128	1,943,263,000	10685	0.204985683	0.300080667	0.626410645
		2015	0.0075	266,418,000	13398	0.219619584	0.272636568	0.706058471
		2016	-0.0193	266,418,000	20391	0.224111578	0.297154244	0.767051968
		2017	-0.0081	46,208,000	24531	0.223198594	0.443553362	0.633079477
32	UBA BANK	2013	-0.0096	457,748,000	7192	0.095148248	0.003484473	12.93450135
		2014	-0.0697	887,338,000	11766	0.236963835	0.066242038	0.165054668
		2015	-0.0391	766,042,000	14723	0.142269631	0.02078853	0.358565737
		2016	0.0089	766,042,000	22311	0.380467774	0.022067995	0.5582396
		2017	0.0021	437,532,000	26812	0.332359723	0.045935328	0.508685626
33	Jamii Bora Bank	2013	0.01	8,706	8706	0	0.000948655	6.913124108

		2014	0.0073	13,929	13929	0.167479799	0.093131188	0.492758042
		2015	0.0022	17,374	17374	0.13025861	0.072257825	0.641580265
		2016	-0.0312	26,152	26152	0.170821674	0.203957597	0.667596032
		2017	-0.0593	31,374	31374	0.177651545	0.212105952	0.772624698

