

# **MOBILE BANKING SERVICES AND FINANCIAL PERFORMANCE OF TIER ONE COMMERCIAL BANKS IN KENYA**

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## **ABSTRACT**

Kenya mobile banking arena is fast developing and shaping the landscape of cashless transactions exponentially. With introduction of mobile services in the banking industry, the commercial banks are faced with the challenge of embracing the new technological advances in the industry or lose business. The purpose of this study was to determine the effects of mobile banking services on financial performance of commercial banks in Kenya. The study was guided by the following specific objectives; to examine the effects of mobile banking withdrawal and deposits, loans, payment of bills and funds transfer on the financial performance of commercial banks in Kenya. The study was anchored by the following theories; diffusion of innovation theory, agency theory and stewardship Theory. This study employed descriptive research design. The study targeted 8 tier one commercial banks. The study used secondary data which was obtained from the published financial statements of the tier one commercial banks in Kenya. Descriptive statistics and inferential statistical techniques were used to analyze the data and presented in terms of tables and figures. Multivariate regression model based on cross sectional pooled data from the annual reports and other financial statements to assess the effect of mobile banking services on the financial performance was conducted. Regression analysis and correlation analysis was carried out to analyze the relationship between the variables. Based on the findings that mobile withdrawals have a significant positive influence on financial performance of tier one commercial banks in Kenya it can

be concluded that banks should always ensure that the mobile withdrawals are efficient and are sound to facilitate participation of the customers in using the banking applications as well as contribute to greater returns. On the other hand, the findings that mobile loans have a significant positive influence on financial performance of tier one commercial banks in Kenya it can be concluded that banks should always ensure that the mobile loans are efficient and are sound to facilitate participation of the customers in using the banking applications loans services as well as contribute to greater performance. Similarly, the findings that mobile banking payment of bills have a significant positive influence on financial performance of tier one commercial banks in Kenya it can be concluded that banks should always ensure that the mobile banking payment of bills are efficient, effective and are sound to facilitate participation of the customers in using the banking applications services as well as contribute to greater performance. On the mobile banking funds transfer, the findings indicate that there is a significant positive influence on financial performance of tier one commercial banks in Kenya it can be concluded that banks should always ensure that the mobile banking funds transfer are efficient, effective and are sound to facilitate participation of the customers in using the banking applications services on money transfer as well as contribute to greater performance. The study recommends that tier one commercial banks in Kenya should always offer mobile banking loans services at lower interest rates to encourage more borrowers. It is recommended that tier one commercial banks in Kenya should

always develop appropriate mobile banking payment of bills services which are informed by the changes in the environment and that accommodate the common customers in Kenya.

**Key Words:** *mobile banking services, financial performance, tier one commercial banks, Kenya*

## **INTRODUCTION**

Adewoye (2013) opines that e-banking utilization by contemporary financial institutions and concomitant revolution of the banking industry is a demonstration of the powerful and transformative role of technology in arguably all sectors of the economy. Mobile banking, an increasingly popular branch of e-commerce, for example, presents bank customers with self-service options that allow one to conveniently transact beyond conventional banking hours. Computer-based technology has gained currency even in the non-financial sector, as the world gravitates towards a cash economy.

Gonzalez (2011), observes that electronic banking services are not new to the banking sector as they have been availed remotely before. The banking industry is a primary technology consumer, hence playing a critical role in entrenching adoption of technology. Digital budget switch, along with small payments and company coins managements systems, automation of money access service and mechanisms for controlling retail bank are globally-entrenched services. However, Gakure and Ngumi (2013) observe that the internet is increasingly becoming the global medium for availing services and products to bank clients thus offering new commercial enterprise possibilities for banks in addition to for clients.

Because of an increasing number of competitive, saturated and dynamic commercial enterprise surroundings, there is a marked increase in client-inspired approaches among clients' banks all over the globe as a strategy of productively fulfilling rapid and converting client demands (Walker, Smither & Waldman, 2012). Technological advances have changed the arena noticeably, changing the manner wherein people behavior their private and business affairs. As observed by Chakrabarty (2010) middle banking solution permits banks to extend the total advantages of Automated Teller Machine (ATM), card banking, mobile banking, tele-banking and internet banking and various shipping channels to all customers permitting banks to provide a large number of purchaser-centric offerings round the clock from a central point in manner that transforms both corporate and retail financial services.

## **STATEMENT OF THE PROBLEM**

The roll out of mobile services in developing countries has generated a lot of interest among various players in the financial sector of the economy (Jenkins, 2014). 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. Mobile services 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 (Benedict, 2013). 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 growth during the last few years and it is becoming a major catalyst for economic and social development in many countries. Mobile banking services 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 to investigate the effect of mobile banking services on financial performance of the commercial banks. The performance of commercial banks in Kenya is critical for research given the significant role the banks play in the economy. Mbiti (2011) observe that the convenience, affordability, security and ease of operation that have come along with the introduction of m-banking concept have forced the commercial banks in Kenya to change from their traditional way of doing business to integrate the mobile transactions in their business. However, commercial banks today face challenges that range from debt crises to extremely tight competition in the market. This has led to commercial banks in Kenya not achieving their targets especially in relation to Return on Investment (ROI) and their Return on Equity (ROE) as observed by Okiro and Ndungu (2013). Kumar (2010) indicates that communication companies have kept the technological bar quite high and now they are offering banking services to the Kenyan population that has been locked out by the commercial banks. As the commercial banks in Kenya adopt mobile money technology in their ways of doing business, such key issues as cost of m-banking services, system security and speed of service and skills requirement need to be looked into with a view of establishing their overall effect on the performance of commercial banks. There are countless hurdles that threaten the ability of alternative banking avenues to increase incomes for banks (Maungu, 2015). The author also notes that among the various hurdles encountered were insecure platforms, sceptical customers, technical hitches, failure in communication network and errors in transactional processes. It is also noteworthy that while mobile banking services are available, customers still queue in banks for services (EBL, 2014). With customers lining for services that they could have done using their mobile phones. While banks have succeeded in leveraging available technology and providing alternative avenues to customers for banking services, the challenge they face today is optimizing the usage of these channels. Aduda and Kingoo (2012) investigated the role of electronic banking in Kenyan commercial banks' financial performance. Their study did not focus mobile banking. Another significant study was by Okiro and Ndungu (2013) who analysed how the performance of Kenya's financial institutions was influenced by mobile and internet banking. This study focused on non-financial aspects. Ngari and Muiruri (2014) assessed how Kenya's commercial banks' performance was impacted by financial innovations. The study did not focus on mobile banking services. Consequently, the focused of the proposed study will be the role of mobile banking in Kenya's tier-one commercial banks' financial performance.

## **GENERAL OBJECTIVE**

To investigate the effects of mobile banking services on financial performance of tier one commercial banks in Kenya.

## **SPECIFIC OBJECTIVES**

1. To assess the effect of mobile banking withdrawal on the financial performance of tier one commercial banks in Kenya.
2. To examine the effect of mobile banking loans on the financial performance of tier one commercial banks in Kenya.
3. To establish the effect of mobile banking payment of bills on the financial performance of tier one commercial banks in Kenya.
4. To identify the role of mobile banking funds transfer on the financial performance of tier one commercial banks in Kenya.

## **THEORETICAL REVIEW**

### **Financial Intermediation Theory**

This study was guided by Financial Intermediation Theory by Gurley and Shaw (1960). Gurley and Shaw (1960) assert that this theory is derived from two other theories: The Agency Theory and the Information Asymmetry Theory. There are several factors that hinder financial institutions from carrying out their mandates effectively, based on the Financial Intermediaries Theory. The most prominent of these determinants are limiting cost of transactions, lack of or insufficient information and legal environment of the industry. Financial intermediaries are primarily concerned with information dissemination, according to Leland and Pyle (2007). Another significant definition of financial intermediaries is by Diamond and Dybvig (2003) who regard these agents as being federation of depositors keen to see to it that savings are safeguarded.

According to Scholtens and Van Wensveen (2010), financial intermediaries exist to provide value creation through risk-sharing and risk-management services that are unavailable through financial markets; but services continuously change in response to financial market developments. The theory predicts that financial mediators should must expand their services in developing countries where information problems are more pronounced, and forecasts that financial intermediaries must contribute more to the GDPs of emerging economies compared to developed nations. However, Coval and Thakor (2015) observe that financial intermediary as a percentage of GDP is found to be higher in advanced economies, and the level of financial intermediary is positively correlated to economic advancement and GDP per capita.

Diamond (2008) asserts that financial intermediaries act on behalf of savers hence attaining economies of scale. The person saving funds must trust the financial intermediary's ability to

invest the former's savings prudently in viable projects. On the other hand, the agent must assure the depositor that in case the depositor is not contented with the usage of the funds, he or she can withdraw and take away his or her savings. The role of financial intermediaries is well-elaborated by the Financial Intermediaries Theory. At the core of this theory is the exposition of how financial intermediaries contribute to national economies. This theory assisted in analysing how the financial performance of tier one commercial banks is affected by the mobile banking services.

### **Diffusion of Innovation (DOI) Theory**

Rogers (1983) was credited with development of Diffusion of Innovations (DOI) Theory. This theory has its roots in communication, where it was used to elaborate the gradual growth and spread of a product or idea within a defined social system or population. In essence, an idea moves from an area of concentration and is finally adopted by people who were not within the area of origin of the idea. Adopting an idea implies that a person who was not practising such an idea or behaviour changes and becomes a follower or user. For example, a person may buy and start using a product after exposure to information about that idea. The rationale behind adoption is the perception that the idea or product being introduced is new or has some higher level of innovativeness.

According to Selwyn (2009), it is possible not to understand that people can reject new technology and not adopt it, despite the process of innovation. Often, people may not be receptive to technology despite that technology being functional and recent. Kingsley and Anderson (2010) opine that consumers may not adopt products uniformly. Some of the parameters in which people may differ when buying the same type of product include function, price and availability. This happens especially as the product or services becomes diversified. Further, owing to dissatisfaction with a product, current users may turn out to be non-users in future.

DOI was proposed by Rogers (1983) to underline elements of innovation, which determine whether a technological innovation is accepted or rejected. For an innovation to be adopted, the factors to consider are observeability, complexity, compatibility, trialability and relative advantages. Under observability, the key issue is the level to which other people can observe the technology. Complexity corresponds to the extent of mental and physical effort necessary to comprehend applied technology, in this case, mobile telephony. The concept of compatibility relates to the ability of the innovation to fit in with customer lifestyle, values and other personal needs. Trialability refers to the opportunity given to the person adopting the technology to try it out, weight the risks, and finally make the decision to take up the technology.

### **Agency Theory**

This study was guided by agency theory as proposed by Eisenhardt (1989). This theory scrutinizes the link between firms and their mediators. The agency problems in enterprise

principle revolve around whether good enough marketplace mechanisms exist for retailers to behave in methods advantageous to a firm's software in which case management and possession are disconnected. Beneath the phrases of agency concept, a primary (p) gives an agent power (a) to transact and decide for the predominant with the intention to maximize p's software alternatives. Agency Theory troubles can arise if: p and a have one-of-a-kind objectives; p and possess dissimilar proficiencies in comparing the performance of A; p and A have special collections of records applicable to the executive judgements A need to advance in representing p; or p and avoid risk at distinctive stages.

Aguilera, Filatotchev, Gospel and Jackson (2008) objected to challenge agency because of what they considered as being closed. These authors prefer to replace relative corporate governance with organizational social perspective as a strategy of describing the patterned disparity emanating from interrelationship between companies and their settings. Under this approach, corporate governance is understood in the context of effectiveness in attaining set targets. According to Singh (2005), this theory is wider in terms of how it defines effectiveness compared agency theory. Their framework they advance is wide-ranging for evaluating the influence of institutional context on the suitability of optional governance procedures.

According to (Eisenhardt, 1989), one of the underlying challenges with the Agency Theory is that principals lack the ability to supervise agents, partially or impartially. Furthermore, the former cannot decipher the latter's action or the information spawning such action. The proprietorship of commercial banks over time has shifted from individuals to largely institutional shareholding. This scenario compounds the environment within which agency banking operates. Banks have ventured into mobile banking, ventures that are licensed by Central Banks on the request of respective banks. In the context of Agency Theory, it is possible for complications to arise pitting mobile banking services providers on one hand and commercial banks on the other.

### **Technology Acceptance Model**

In 1986, Davis advanced a framework to predict how information is assimilated by users and how people access technology within organizations. This approach was named the Technology Acceptance Model (TAM). To improve the working environment in their organization, most firms are adopting technology as posited by Cracknell (2004). Technology has also been known to help in reducing costs and increasing efficiency in the organizations. Technology Acceptance Model concentrates on deals with acuties and not practicalities. The model suggests that decisions of manner, place and time for utilizing technology are the prerogative of the user.

The raw materials for developing TAM were derived from the Theory of Reasoned Action as Davis sought to understand why information technology was often rejected by individuals. Davis concluded that the key perceptions accruing to individual use of information technology revolved ease and usefulness of the technology. By perceived usefulness, the scholar referred to extent to which people supposed that their performance at work was boosted by access to technology. On

the other hand, perceived ease referred to the notion that the use of a certain form of technology was free from hassles. It was concluded that of the two factors, perceived usefulness was the most likely determinant of the decision to use or to eschew information technology.

According to Davis (1989), technology requires a positive attitude and the organization should also have a main objective towards adopting it. This theory renders itself amenable to the current study due because it expounds on how a user accepts information technology and utilizes it within an organization. There are bipolar implications in using technology despite it being the first process of acceptance. This theory entails how to accept technology by first finding out its advantages and implications. Performance is affected by acceptance through efficiency which is affected by the attitude and perception people have on technology adoption. Mobile banking requires acceptance of technology as it improves productivity and operational efficiency through strategic adoption.

### **Stewardship Theory**

This study was guided by Stewardship theory as proposed by Davis, Schoorman, Donaldson (1997). This is a different approach to the Agency Theory, whereby the interest of the manager precedes that of the shareholder. The Stewardship Theory stipulates strategies for curtailing losses for agents. These methods include monetary incentives, fringe benefits and making managers shareholders so as to encourage them to perform optimally since they partly own the firm. Instead of being a mere employee, keen to earn a salary and possibly change jobs for higher pay, the manager becomes a steward of the possessions of a company, working towards the company's profitability. In essence, managers under this theory do not pose challenges related to motivation.

According to Jay and Hesterly (2008), the Stewardship Theory is premised on the supposition that the welfare and prosperity of the organization will outweigh perceived individual benefits in managerial decision-making processes. Managerial motivation derives from the realization or perception that when the organization succeeds, the manager, as a shareholder, will benefit too. Such a manager strives to exceed expectations in performance, believing that a stable firm is advantageous to all stakeholders, the manager-steward inclusive.

Donaldson (2008) opines that under Stewardship Theory, company shareholders and managers have no differences. The key governance objective, therefore, is to establish the best working conditions for the relationship between owners and managers to thrive. Managers under this theory are benevolent when exercising control since the organizational structure is amenable to their needs. The bottom-line of this theory is the existence of congruence between the interest of principles and managers in the organization.



## **EMPIRICAL LITERATURE REVIEW**

### **Mobile Withdrawals and Financial Performance**

Nyabera (2017) studied how customer service delivery was impacted by mobile banking service at the Moi Avenue Branch of the Kenya Commercial Bank (KCB). The study took the form of a case study with a population of 5000 respondents drawn from KCB Moi Avenue branch. Data was collected using structured questionnaire. It was established that KCB Moi Avenue branch has adopted a number of mobile banking services to great extent and that Mobile banking service has assisted greatly in improving various aspects of customer service delivery. Whereas the study focused on how mobile banking service affects customer service at KCB. The current study focused on how mobile banking services influences financial performance of tier one commercial banks.

Kiprop, Ayuma and Ambrose (2016) investigated how commercial banks' financial performance was impacted by mobile banking in Kapsabet Town. Descriptive survey design as chosen for the study. Management teams, customers of the bank, departmental heads and bank employees comprised the study's population. Stratified random sampling method was the probability method adopted by the study. It was established that banks' financial performance and mobile banking were closely correlated at ( $p < 0.005$ ). It was established that sending and receiving money was easier through mobile platforms. The current study comprised accountants and finance managers of first tier Kenya commercial banks.

Okiro and Ndungu (2013) investigated how Kenya's financial institutions' performance was influenced by mobile and internet-banking. From the 30 institutions sampled, it was evident that there was a substantial process of transformation in the banking sector in Nairobi. Majority of the customers who used internet banking services were making inquiries on bank balances while the smallest number was concerned with e-commerce. On the hand, mobile banking was majorly used for withdrawing cash, with the least number of people purchasing products using their mobile phones. The study did not focus on financial performance. Therefore, the current study delve on the relationship between tier one banks' financial performance and mobile banking services.

Benedict (2013) studied how the financial performance of deposit-taking microfinance organizations was influenced by electronic banking. This descriptive design study had a population of nine registered deposit taking microfinance institutions in Kenya as at June 2013. Questionnaires and documentary information from the institutions annual accounts were used as data collection instruments. The study found that all the deposit taking microfinance institutions had adopted e-banking technologies. This in turn improves Kenya's deposit-taking banking institutions' performance and electronic banking were negatively correlated. The study did not focus on mobile banking. This study sought to investigate how financial performance of tier one commercial banks is influenced by mobile banking services.

## **Loans and Financial Performance**

Wamiori, Sakwa and Namusonge (2016) did a study on the how the financial performance of Kenya's manufacturing firms was influenced by access to finance. The study's population was Nairobi County's 199 manufacturing firms. Respondents were classified into twelve strata representing different manufacturing sectors. The study established that manufacturing firms' financial performance and access to finance were positively correlated. The study was based on financial performance of manufacturing industry but the focus of the current study examined financial performance of tier one commercial banks through mobile banking transactions.

Muisyo, Alala and Musiega (2014) study investigated Kakamega Town's financial institutions' performance were influenced by mobile banking. One hundred and fifteen respondents derived from 13 financial institutions comprised the study's sample. Data collection instruments were interview schedules, questionnaires and observation checklists. The study concluded that mobile money services were reliable and convenient to users hence higher levels of customer loyalty and satisfaction, although customers still experienced technical hitches intermittently. The study used primary data to investigate how banks' financial aspects were influenced by mobile money, but the this study looked at financial performance of tier commercial banks using secondary data and reliability test will calculated using Cronbach alpha coefficient.

Murigi (2014) study looked at how Mukuru Slums' small and micro enterprises (SMES) performed financially considering the influence of financial access. Data for this descriptive survey design study was collected from financial statements and through questionnaires. It was established that SMEs financial performance was positively correlated to financial access. Moreover, the study found out that 43 % of Mukuru Slums' SMEs relied on informal financing for their operations. This is in contrast to 34% and 23% of the institutions in the slums which relied on formal avenues and semiformal means respectively to finance their operations. From the foregoing, it is evident that SMEs that relied on informal sources to fund operations performed better than those that relied on official and semi-official strategies. The study was based on SMEs' financial performance. However, this study concentrate on financial performance of tier one commercial banks.

Adewoye (2013) studied how Nigerian commercial bank services were impacted by mobile banking. The study' sample comprised 140 bank staff from the upper and lower carders, who were required to fill questionnaires. It was established that transactional expediency, access to credit, rapid transaction alerts, lower service costs and time saved were the main ways in which mobile banking boosted service delivery in banks, hence boosting customer satisfaction. The study only focused on the effects on mobile banking on service delivery using primary data but the current study used secondary data to examine how loans obtained through mobile banking influences financial performance of tier one commercial banks.

## **Payment Bills and Financial Performance**

Mattson (2015) study examined how payment was transformed by mobile banking and how Chinese people perceived the impact of this linkage on the banking industry in the country. A number of consumers formed the sample of study. Linkages between different stakeholders in the industry was identified as being vital in relation to consumers' ability to pay their bills conveniently. It was also established that stakeholders' welfare was improved significantly when the needs of those parties were met satisfactorily. The study investigated how mobile banking management influenced general operations in banking industry but the focus of the current study was to examine how tier-one commercial banks perform financially when impacted by customer payment of bills through mobile banking services.

Njoroge (2014) investigated how Kenya's commercial banks' performance was impacted by mobile banking. The research took the form of a descriptive survey approach and was intended at identifying the specific effects of adoption and increased usage of mobile banking. Through linear regression, the study focused on changes in the volume of deposits and withdrawal, value of loans uptake, payments of utilities, statements requests and funds transfers. The study concluded that mobile banking was fast becoming an integral part of banking in the country, and had significant potential of transforming the performance of Kenya's commercial banks. The study used primary data and the main focus was on commercial banks' negative performance, but the current study will use panel regression analysis to analyse secondary data and focused on how tier-one commercial banks perform financially.

Kithaka (2014) studied how Kenya's commercial banks' financial performance was impacted by mobile banking. The study adopted a cross-sectional descriptive survey approach. Secondary data that informed this study included records such as audited financial statements that was available at the Nairobi Securities Exchange. CBK's repository also provided banks' financial statements based on CBK's yearly surveys of the banking sector. Over the years, there was an intercept of 1.076, according to the study. It was established that Kenya's commercial banks' performance was positively correlated to mobile banking. Unlike the proposed study, Kithaka (2014) did not delve into Kenya's tier one commercial banks' performance.

A study by Mutua (2013) investigated how the performance of Kenya's commercial banks was influenced by mobile banking. This descriptive research design study targeted over 40 commercial banks and six mobile phone service providers. Cumulative mobile cash transfers of five years since 2012 and respective numbers of users were statistically compared to the performance of banks and concomitant return on assets. Unlike other studies' findings, however, it was established that Kenya's commercial banks financial performance and mobile banking had a weak positive correlation. Mutua's (2013) study, though, was conducted in the telecommunication sector as opposed to the proposed one which is based on tier one commercial banks.

A study by Kim, Shin and Lee (2009) investigated undercurrents informing individuals' aims of utilizing mobile banking and initial trust of the technology. The 34 institutions that qualified for the study were chosen from a French-domiciled database. The research took the form of a survey and established that mobile payment approach was a preferred method of ensuring that goods are paid without much embezzlement of funds thus leading to amicable relations between various parties. The study concluded that addressing payment of bills using mobile services such as 'Lipa Na Mpesa and Buy Goods services ensured flawless business operations which translated to peaceful relations between retailers and consumers, hence a vibrant banking industry. The study hinged on the security through mobile banking transactions, in contrast to the proposed study which purposes to assess how Kenya's tier one commercial banks' financial performance is impacted by developments in mobile banking sector.

### **Funds Transfer and Financial Performance**

According to the findings of an investigation on electronic payments systems and mobile banking in Nigeria carried out by Agboola (2016), it was established that there has been a very significant change from the use of cash to electronic payments. It was clear from the study findings that the automation of payment systems had significantly reduced the volume of cash transactions handle by commercial banks. It was also evident that mobile banking has great potential of broadening the customer relationship; improve customer service delivery which will result to high rate of customer retention and customer loyalty. The study focused on non-financial performance of commercial in terms of customer relationship through mobile banking but the proposed study sought to investigate how Kenya's tier one commercial banks' financial performance is impacted by developments in mobile banking sector

Johnson (2012) posits that in 2012, a study, "Search for Inclusion in Kenya's Financial Landscape; The Rift Revealed", with a sample population of 800 people, was carried out in Kenya. The key instrument of data collection was a questionnaire which was administered to all respondents. Education and gender were identified as the most consistent determinant of financial service users. For example, more men than women were likely to be using MPESA services. This was particularly prevalent among young people. The same trend was witnessed in respect of operation of bank accounts. In addition, illiterate people were likely not to use MPESA service as opposed to those with elementary education or higher levels of learning.

A study by Masinge, (2010) investigated determinants of the uptake of mobile-phone based banking services and pertinent dynamics in the South African banking sector. Data was collected using a questionnaire. Using Analysis of Variance (ANOVA), it was established that the cost of transaction was a major determinant of uptake of mobile banking services. Masinge, (2010) delved into non-financial performance and adoption of mobile banking service, the current study established the relationship between financial performance of tier one commercial banks in Kenya mobile banking services.

Aker and Mbithi (2010) investigated the level of mobile phone penetration in Sub-Saharan Africa since 2000. Data was collected using a questionnaire. It was established that the pioneers of mobile phone uptake were those with education, youthful people, and the rich and urban dwellers. These factors were attributable to the forbidding costs of acquiring gadgets and accessing the service. Further, it was established that people using MPESA were likely to be educated, living in urban areas, richer and having bank accounts. In addition, majority of mobile money transfers were conducted in urban zones.

## **RESEARCH METHODOLOGY**

### **Research Design**

Descriptive research design was adopted in this study to test the relationship variables of the study. According to Kothari (2004), the major purpose of descriptive survey is to describe the phenomenon as it is, establishing current conditions, attitudes, and practices and looking for precise descriptions. Saunders (2011) asserts that descriptive research design helps establish causal relationships between variables by laying emphasis on examining a situation or phenomenon. Descriptive research purposes to provide detailed on phenomenon or population traits. Descriptive research design was adopted considering it aids the researcher to generalise the findings to a larger population. It is also more accurate as it entails explaining a phenomenon in an organized manner.

### **Target Population**

Ngechu (2014) asserts that the term ‘population’ in research refers to specific groups of persons, elements, items, households or services under scientific scrutiny. The target population for the study consisted of tier one commercial banks in Kenya. There are eight tier one commercial banks in Kenya according to Kenya Bankers Association report 2017.

### **Data Collection**

For purposes of this study, only secondary data was used. Secondary data was collected from the websites of the 8 Tier one 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 mobile banking withdrawal, mobile banking loans, mobile banking payment of bills and mobile banking funds transfer.

### **Data Analysis and Presentation**

Data analysis will be conducted using descriptive and inferential statistical techniques. Findings were presented findings in form of tables and figures. Multivariate regression model based on cross sectional pooled data from the annual reports and other financial statements to ascertain the influence of financial performance on mobile banking. To measure the relationship between

variables, the study employed correlation analysis and regression analysis. Test of significance was carried out for all variables using t-test at a 5% level of significance. To ascertain the relationship between variables and the extent to which they influence each other, the study employed inferential statistics, specifically correlation analysis and multiple regression analysis. The model for the study is specified as follows:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Where: Y= Financial Performance;  $\beta_0$  = Constant coefficient;  $X_1$  = Mobile Banking Withdrawal;  $X_2$  = Mobile Banking Loans;  $X_3$  = Mobile Banking Payment of Bills;  $X_4$  = Mobile Banking Funds Transfer;  $\beta_1, \beta_2, \beta_3, \beta_4$  =Regression Coefficients;  $\varepsilon$  = Error term

## **RESEARCH RESULTS**

The study sought to establish the relationship between the amounts of mobile banking withdrawals in commercial banks financial performance. The results reveal that mobile banking withdrawals had a positive effect on the financial performance of commercial banks in Kenya and this effect was significant at 5% level ( $B = 0.281, p = 0.004$ ). This is an indication that the more the number of mobile banking withdrawals in a commercial banks, the better the financial banks. The findings go hand in hand with the argument by Kathuo et al (2015) that as the monthly value withdrawals through mobile banking increases, the profitability of the commercial banks increase.

Descriptive results also show the number of mobile banking withdrawals by users keep on increasing from one year to another. This shows that customers are appreciating and embracing withdrawals through mobile banking platform. This could be attributed to the advantages offered by mobile banking which include convenience and flexibility. This is in line with the results Nyabera (2017) withdrawals made via mobilize banking application helped to promote efficiency and confidence in the financial system thus winning public trust.

The study also sought to establish the influence mobile banking loans and the financial performance of commercial banks in Kenya. The results show that mobile banking loans had a positive effect on the financial performance of commercial banks in Kenya and this effect was significant at 5% level ( $B = .668, p = 0.000$ ). This means that the higher mobile banking loans, the better financial performance since the bank is able reap more from itreats charged on loans issue through this plat form. This is in line with the results of Kingoo (2011) that Mobile banking has been made easy as loaning of borrowers is approved immediately the lenders confirm that the borrower's credit supports that of the loaning policy. Descriptive results also show that banks' financial performance and mobile banking were closely correlated. It was established that sending and receiving money was easier through mobile platforms. The current study will comprise accountants and finance managers of first tier Kenya commercial banks. The study also found that all the deposit taking microfinance institutions had adopted e-banking technologies. This in turn improves Kenya's deposit-taking banking institutions' performance and electronic

banking were negatively correlated. The study did not focus on mobile banking. The proposed study seeks to investigate how financial performance of tier one commercial banks is influenced by mobile banking services (Mari, 2006).

The study also sought to establish the influence of mobile banking payment of bills on the financial performance. The results also show that payment of bills through mobile banking system had a positive effect on the financial performance of commercial banks in Kenya and this effect was significant at 5% level ( $B = 0.798$ ,  $p = 0.115$ ). This means that increase in payment of bills through mobile banking, the more funds generated and thus the better the financial performance. This is also in line with previous literature such as Mutua (2013) payment of bills through mobile banking had a significant effect on the financial performance of commercial banks as most of the customers were found to do their transactions through their mobile phones as almost every one of them owns one which is efficient to them and thus improves the banks' profitability.

Payment of bills through mobile banking platform for financial institutions helped to enhance customer service to existing customers, automatic text loan repayment messages that notify customers about upcoming re-payments or loan disbursements or warn of late payment notices can save loan officers time and phone bills. These findings concurs with the study findings by Hughes and Lonie (2007) suggested that making Payment of bills through mobile banking platform ensures safety to the customers and its also effective when compared to all other forms of transferring money.

The study also sought to establish the influence of t mobile banking funds transfer on the financial performance of the bank. The results finally show that mobile banking funds transfer had a positive effect on the financial performance of commercial banks in Kenya and this effect was significant at 5% level ( $B = 0.359$ ,  $p = 0.002$ ). This means that the increase in mobile banking funds transfer, the higher the financial performance. This is in line with the results of previous studies such as Mutua (2013). Mobile banking funds transfer had a significant effect on the financial performance of commercial banks with many baking institutions indicating that increase in utilisation of m mobile banking funds transfer helped financial institutions to achieve greater scale in its operations which generally improved profitability.

Results further indicate that funds transfer via mobile banking application and all the deposit taking microfinance institutions had adopted e-banking technologies. This in turn improves Kenya's deposit-taking banking institutions' performance and electronic banking were negatively correlated. The study did not focus on mobile banking. The proposed study seeks to investigate how financial performance of tier one commercial banks is influenced by mobile banking services (Benedict, 2013).

**INFERENCE STATISTICS**

The Karl Pearson’s product-moment correlation was used to analyse the association between the independent and the dependent variables. The Pearson product-moment correlation coefficient (or Pearson correlation coefficient for short) is a measure of the strength of a linear association between two variables and is denoted by r. The Pearson correlation coefficient, r, can take a range of values from +1 to -1.

A value of 0 indicates that there is no association between the two variables. A value greater than 0 indicates a positive association, that is, as the value of one variable increases so does the value of the other variable. A value less than 0 indicates a negative association, that is, as the value of one variable increases the value of the other variable decreases. Pearson’s Correlation Coefficient was carried out and the results obtained are presented in table 1.

**Table 1: Pearson Product-moment Correlation**

		Banks financial performance Y	Mobile banking withdrawal X1	Mobile banking loans X2	Mobile banking payment billsX3	Mobile banking offunds transfer X4
Banks Financial Performance N Y	Pearson Correlation Sig. (2-tailed)	1	.491**	.772**	.822**	.544**
			.001	.000	.000	.000
		45	45	45	45	45
Mobile Banking Withdrawal N X1	Pearson Correlation Sig. (2-tailed)	.491**	1	.357*	.284	.206
		.001		.016	.058	.174
		45	45	45	45	45
Mobile Banking Loans N X2	Pearson Correlation Sig. (2-tailed)	.772**	.357*	1	.540**	.266
		.000	.016		.000	.078
		45	45	45	45	45
Mobile Banking Payment ofN Bills X3	Pearson Correlation Sig. (2-tailed)	.822**	.284	.540**	1	.439**
		.000	.058	.000		.003
		45	45	45	45	45
Mobile Banking Funds N Transfer X4	Pearson Correlation Sig. (2-tailed)	.544**	.206	.266	.439**	1
		.000	.174	.078	.003	
		45	45	45	45	45

The study findings in table 1 shows a significantly strong positive correlation between mobile banking withdrawal and banks financial performance (Pearson correlation coefficient r =0. 491 Sig. = .001). A significantly strong positive correlation also exists between mobile banking loans and banks financial performance (r = 0.772 Sig. = 0.000). A significantly strong positive



correlation also exists between mobile banking payment of bills and banks financial performance ( $r=0.822$  Sig. = 0.000). The study found strong significant correlation between mobile banking funds transfer and banks financial performance ( $r= .544$  Sig. =0.000). This is in line with the results of Kingoo (2011) that Mobile banking has been made easy as loaning of borrowers is approved immediately the lenders confirm that the borrower's credit supports that of the loaning policy.

Regression analysis was also performed to examine the relationship between mobile banking services and financial performance of tier one commercial banks.

**Table 2: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.943 <sup>a</sup>	.889	.878	2.45358

a. Predictors: (Constant), X4, X1, X2, X3

The coefficient of determination (R Square) is used to test the goodness-of-fit of the model. That is, R Square measures the proportion or percentage of the total variation in the dependent variable explained by the independent variable. The value of R Square lie between 0 and 1 and if R Square value is 1 the there is a perfect fit while R Square value 0 indicates that there is no relationship between dependent and independent variables. From the study findings in Table 2, the R Square value was 0.889 indicating that independent variables (mobile banking withdrawal, mobile banking loans, mobile banking payment of bills, mobile banking funds transfer) explain 88.9% variation in banks financial performance.

**Table 3: Analysis of Variance (ANOVA)**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1932.484	4	483.121	80.252	.000 <sup>b</sup>
	Residual	240.801	40	6.020		
	Total	2173.286	44			

a. Dependent Variable: Y

b. Predictors: (Constant), X1, X2, X3 X4

The analysis of variance shows an F value of 80.252 and a significance (p) value of 0.000 which indicates that not all the predictor variables (mobile banking withdrawal, mobile banking loans, mobile banking payment of bills, mobile banking funds transfer) explain variations in banks financial performance.

**Table 4: Regression Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 (Constant)	13.238	3.074		4.307	.000
Mobile Banking Withdrawal ( X1)	.281	.093	.173	3.036	.004
Mobile Banking Payment Of Bills (X2)	.668	.107	.405	6.272	.000
Mobile Banking Loans (X3)	.798	.115	.469	6.967	.000
Mobile Banking Funds Transfer (X4)	.359	.109	.194	3.301	.002

a. Dependent Variable: Y

The regression equation appears as follows:

$$Y_i = 13.238 + 0.281 X_1 - 0.668 X_2 + 0.798 X_3 + 0.359 X_4$$

Constant = 13.238, shows that if all the independent variables (mobile banking withdrawal, mobile banking loans, mobile banking payment of bills, mobile banking funds transfer) all rated as zero, banks financial performance would rate 13.238

From the above regression equation, it was revealed that a unit increase in mobile banking withdrawal would improve banks financial performance by factors of 0.281, unit increase in issuance of loans through mobile applications would improve the improve banks financial performance by factors of 0.668, unit increase in mobile banking payment of bills would promote the improve banks financial performance by factors of 0.798 and that further adoption of mobile banking funds transfer would improve banks financial performance by factors of 0.359 These findings are line with the results of previous studies by Benedict (2013) that Kenyan Commercial Banks’ performance positively related to application of funds transfer via mobile banking.

## CONCLUSIONS

Based on the findings that mobile withdrawals have a significant positive influence on financial performance of tier one commercial banks in Kenya it can be concluded that banks should always ensure that the mobile withdrawals are efficient and are sound to facilitate participation of the customers in using the banking applications as well as contribute to greater returns.

On the other hand, the findings that mobile loans have a significant positive influence on financial performance of tier one commercial banks in Kenya it can be concluded that banks should always ensure that the mobile loans are efficient and are sound to facilitate participation

of the customers in using the banking applications loans services as well as contribute to greater performance.

Similarly, the findings that mobile banking payment of bills have a significant positive influence on financial performance of tier one commercial banks in Kenya it can be concluded that banks should always ensure that the mobile banking payment of bills are efficient, effective and are sound to facilitate participation of the customers in using the banking applications services as well as contribute to greater performance.

On the mobile banking funds transfer, the findings indicate that there is a significant positive influence on financial performance of tier one commercial banks in Kenya it can be concluded that banks should always ensure that the mobile banking funds transfer are efficient, effective and are sound to facilitate participation of the customers in using the banking applications services on money transfer as well as contribute to greater performance.

## **RECOMMENDATIONS**

It is thus recommended that tier one commercial banks in Kenya should always develop appropriate mobile banking withdrawal services which are informed by the changes in the environment and that accommodate environmental dynamism.

The study recommends that tier one commercial banks in Kenya should always offer mobile banking loans services at lower interest rates to encourage more borrowers.

It is recommended that tier one commercial banks in Kenya should always develop appropriate mobile banking payment of bills services which are informed by the changes in the environment and that accommodate the common customers in Kenya.

The study recommends that tier one commercial banks in Kenya should always develop appropriate mobile banking funds transfer services which are efficient and easy to use. The mobile banking funds transfer services for the bank's charges should be friendly to accommodate the common Kenyan customers.

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