

**ELECTRONIC BANKING AND FINANCIAL PERFORMANCE OF  
COMMERCIAL BANKS IN KENYA.**


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**A RESEARCH PROJECT REPORT SUBMITTED TO THE SCHOOL  
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REQUIREMENTS FOR THE AWARD OF MASTERS OF BUSINESS  
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## DECLARATION AND APPROVAL

The research project report is original work and never has it been presented for any award in any learning institution. This is an academic requirement that can't be replicated without earlier composed authorization of the creator as well as the University.

Signature.......... Date...16/11/2021

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D61/27391/2019

## SUPERVISOR'S APPROVAL

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

Signature : 

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## **DEDICATION**

I dedicate this project to God Almighty. I also dedicate this work to my parents; Dr Paul Owuor and Emily Owuor who have empowered me as far as possible and whose support have ensured that I give it everything necessary to complete this study. To my siblings: Dalton, Enock and Everlyne who have been stood by me throughout this journey.

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## **ABSTRACT**

E-banking constitutes the use of ATMs, mobile and internet banking, automated teller machines, television based banking and automated personal computer banking. Despite the

significance of e-banking in clarifying financial execution, the effect of e-banking on banks performance is as yet misconstrued. The study therefore, did seek to analyze the effect of e-banking on financial performance of commercial banks in Kenya. Three theories namely; technology acceptance model, financial inclusion theory and innovation diffusion theory provided the theoretical foundation for this study. This study did embrace a documentary review research design. The unit of study were the registered and licensed commercial banks operating in Kenya. According to Central Bank of Kenya there are 42 commercial banks licensed to operate in Kenya as per the year 2021 where the researcher conducted a census of all the 42 commercial banks. Secondary data was collected from the commercial bank reports for the year 2017-2020 and was analyzed using descriptive and inferential statistics. Reports from of 40 commercial banks were obtained since the remaining two were suspended by the concerned ministry. The study established that every bank had at least one form of electronic banking service. Inferential statistics showed that a positive correlation exists between value of mobile banking, value of ATM transactions and average net income. While there is an average correlation between internet, banking cards banking and average net income. The multiple regression model showed that the adjusted R-square=0.955 which shows that the value of predictors (mobile banking, internet banking, Banking Cards, ATM) contributes to 95.5% of the financial performance (Average net income). The study concludes that electronic banking have an effect on financial performance among commercial banks in Kenya. The study recommends to the banking industry managerial units to formulate policies of innovation and practices that would enhance electronic banking usage in propelling their performance in their respective institutions.

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## **LIST OF ABBREVIATIONS & ACRONMYS**

<b>ATM:</b>	Automated Teller Machines
<b>CBK:</b>	Central Bank of Kenya
<b>EFT:</b>	Electronic Financial Transfer
<b>IT:</b>	Information Technology
<b>KAB:</b>	Kenya Association of Bankers
<b>MTN:</b>	Mobile Telephone Network
<b>PC:</b>	Personal Computer
<b>RTGS:</b>	Real Time Gross Settlements
<b>TAM:</b>	Technology Acceptance Model
<b>SPSS:</b>	Statistical Package of Social Sciences

# CHAPTER ONE

## INTRODUCTION

### 1.1. Background of the Study

Electronic banking includes the offering of banking items and administrations through electronic channels. Banking Services are associated with developments in terms of technology in the modern world whose aim is to increase efficiency therefore giving businesses a competitive advantage (Cheng, 2014). According to Giordani (2018), e-banking constitutes the use of ATMs, mobile and internet banking, automated teller machines, television based banking and automated personal computer banking. Those banking institutions that provide e-banking services are considered market leaders in terms of implementation of technology (Keremet, 2016). There is a reason that contributed to the growth of electronic banking as defined by Mutinda (2014), who stated that the growth of e-banking is as a result of increase in the number of mobile phones that are currently being used especially in the developing countries.

E-banking has become a significant mode of banking in developing and developed countries across the world but at the top of the list is Northern European countries which have emerged on top in the adoption of e-banking (Bhavnani, and Chiu, Janakiram, 2016). Mari, Rafael and Francisco (2017) concluded that growth of regional GDP is greatly influenced by product innovations. Hendrickson and Nichols (2016) in their study also established that there is an increase in performance by organizations that employ innovation in their operations. Due to the positive outcome experienced with the adoption of e-banking, most countries are embracing it for instance in Mexico where the formal

banking system has been replaced by e banking. Innovations in technology has therefore brought about financial services to the markets globally.

Another case observed in Ghana is that mobile operators such as Airtel money and MTN money have partnered with banks to provide electronic banking services (Zeithaml, 2016). Access of financial services in Ghana has been influenced by branchless banking and this has boosted the economy of the said country (Anyasi & Otubu, 2018). An analysis of the pros and cons of electronic banking by Nedumaran (2018) revealed that the advantages of e banking outweigh the disadvantages. These advantages are: there is convenience in carrying out any financial transactions since it can be done anywhere at any time thus eliminating the need for customers to stand in queues to get banking services thus very fast and effective service, the customer is not limited to working hours to get the service and the operational costs of banks are also reduced due to cut-backs on bank staff. However, some of the demerits of electronic banking are: issues of security since online banking website can be hacked, bank debit card frauds and there is no customer contact with the bank hence any issues experienced by the customers may not be solved.

In Kenya, the vision 2030 emphasized that the application and implementation of innovation and technology in order to increase efficiency and productivity to boost the pillars which it is based. These pillars are social, political and economic. Kenya has adopted e-banking as its operational strategies in order to improve services being offered by increasing efficiency in the operations. The application of e banking is therefore a core requirement for any organization to run effectively and have an edge against its competitors in terms of market share and increased efficiency and productivity of a business which lowers operational cost thus giving the business competitive advantage and higher returns.

The study was anchored using three theoretical models; the Innovation Diffusion theory, Financial Exclusion theory and Technology Acceptance Model. The Innovation Diffusion Theory advanced by Rogers (1962) it sought to provide the explanation on the rate in which an innovation introduced in an organization spread. In this case, it sought to establish the rate in which some of the electronic banking innovations spreads in its usage. Chakrabarty (2011) proposed the second theory, the financial exclusion theory, this theory states that financial resource development can lead to economic development or growth. In this study, use and applicability of electronic banking as a resource led to increased financial performance. The third theory advanced by Fred David (1989), the Technology acceptance model seeks to explain that performance of a new technology is depended on the acceptability and usage of the users. In this study, acceptance of electronic technology in banking is dependent on whether the customers will accept and use it. Based on the three theories, relation between financial performance and electronic banking has been interactively explained to outline the acceptability, spread and contributions.

### **1.1.1. Concept of Electronic Banking**

The banking system across the world has seen several changes in banking services, noticeably is the use of computer and electronic technology. Several authors have defined the term electronic banking. Ogare (2013) defines electronic technology on the use of internet to transact business services. According to the author it involves use of ATMs cards, internet banking, and master cards to conduct services like checking bank balances, making payments, accounts opening and transferring funds. Baariu (2015) defines electronic banking as the process of embracing use of computer technology aided technology to enable self-service among banking customers.

The application of electronic banking is predominantly used across the commercial banks in the world. Nedumaran (2018) states that electronic banking has become part of the products and services the commercial banks are offering to its customers. Therefore, its use and applicability cannot be ignored in the financial sector. To comprehensively understand the elements of electronic banking as pointed out by the mentioned Ogare (2013) and Baariu (2015), the study will group some of the electronic banking products into four categories; mobile, internet, ATM and debit cards banking.

The use of electronic banking has made financial exchanges simpler worldwide, thus quickly acquiring acknowledgment in our country Kenya, particularly after the rise of the Coronavirus pandemic, which has made numerous people to move to e-banking. Practically all Banks in Kenya have adopted e-banking. Its most prominent guarantee is more ideal, more important data available to more individuals, at a diminished expense of data access (DeYoung, 2005).

### **1.1.2. Concept of Financial Performance**

The major goal of any manager of a commercial bank is to achieve the desired financial performance this is according to Muema (2014). Different authors have defined financial management according to the nature of the organizations objectives or goals. Baariu (2015) defines it generally as a process in which the business entity achieves the required profitability. On a different view, Otieno and Kahonge (2014) defines it as the return on investments after the business has employed its resources while Muema (2014) defines financial management as return on assets, that is the value of investments the business gets after employing its current and non-current assets. Different from the above definitions by

the authors, Naim (2017) describes financial management as the ration between the cost to income in organizations.

The financial performance in the banking sector is slightly different from other sectors due to the services offered, mode of banking and nature of transactions (Kipngetich, 2011). Therefore, it is essential that financial performance of commercial banks be determined using different dimensions. Nzioka (2016) argues that commercial banks have continued employing resources by developing new innovative products and services, which is realistic to compare its financial performance with ratio's like: cost to income, return on investments or return on assets. This is also supported by Wambua (2015) who states that general financial performance of commercial banks is highly depended on the returns its gets after investing its resources. Imperatively, return on investments, return on assets and cost to income ratio were used to measure the financial performance of commercial banks.

### **1.1.3. Electronic Banking and Financial Performance**

The mode of banking employed by commercial banks can be used to determine the financial performance this is according to Muema, (2014). According to the author, commercial banks focus on having more customers to be served with different products, systems and methods which translates to more transaction leading to more incomes. Electronic banking therefore provides an avenue in which more customers are served through a self-service mechanism. Observed by Padwal (1995), banking is viewed as a business that manages cash exchanges as well as facilitating quicker and efficient services enhancing customer satisfaction.

According to Padwal (1995) the more the customers are satisfied through the services being offered the more they are loyal and the banks can maintain a larger positive financial base. Financial institutions are seen to minimize their respective costs by the use of electronic banking this was argued by Otieno and Kahonge (2014). According to the authors, the use of electronic banking as been accurate and efficient enough in reducing errors and losses which have helped to minimizing costs. It has reduced other administrative costs, enhanced arithmetic proficiency and expanded the quality of customer service.

Advanced innovation in e-banking according to Nzioka (2016) takes a significant part in contribution better administrations at insignificant expenses thus enhancing organization financial performance. A few imaginative IT-based administrations, for example, ATMs and debit Cards have given various helpful service enhancers to clients; consequently, as the assistance quality improves, the likelihood of consumer loyalty increments. Nzioka (2016) further observes that an expansion in consumer loyalty, thus, increments common arrangement, client maintenance, and an obligation of trust between the client and bank hence improving financial performance.

#### **1.1.4. Commercial Banks in Kenya**

The CBK yearly monetary report for the monetary year 2019/2020, indicated that Kenya had 42 business banks, one home loan account organization, 14 microfinance banks, nine delegate workplaces of unfamiliar banks, 69 unfamiliar trade authorities, 19 cash settlement suppliers, and three credit reference departments(CBK, 2020). These commercial banks serve both corporate and retail customers, more of them are located within the town central business while others having branches outside the town periphery.



In mid-2005, Kenya's financial industry presented RTGS. This was followed by the use of electronic financial transfer (EFT) systems widely used in October 2009. Earlier, before 2005, the most innovative products were use of the automated teller machines and banking cards. This was intended to reduce queues and lessen long lines during deposits and transfers. Thereafter, other electronic innovations followed like the use internet banking and use of mobile banking through software applications. As the financial society keeps on making attacks into the retail section of the market, it is turning out to be more vital that clients should be given an incentive for their well-deserved stores (Market insight, 2005).

Commercial banks around the country are currently utilizing ICT in their administration arrangement as an approach to ensure endurance. The CBK (2021) and Banking association of Kenya estimates that a huge number of all the customers are aware and currently using electronic banking products offered by their respective banks. Large number of these banks in the region through their central administrative headquarters are using substantial number of resources to ensure that the users are using some of the electronic banking products.

## **1.2. Statement of the Problem**

E-banking can possibly change the financial performance in the banking industry. Aside from individual expenses, innovation is typically the biggest thing in the spending plan of a bank that is quickly developing. This, along these lines, implies that clients don't have to line before the customary banks to open their entryways to pull out cash from their records and also don't have to surge an opportunity to make an exchange before the banks close. In the current world, the trading of computerized information isn't restricted to time or place. Information is being shared overall paying little heed to topographical and political limits. Business banks offer e-banking administrations to extend piece of the overall industry or

as an expense saving technique to diminish desk work and staff. The Internet additionally gives banks impressive freedom to extend their client reach past existing limits. Innovation has added to changing numerous individuals' established ideas that they have been acquainted with in their lives.

There are studies reviewed which provide methodological and theoretical gaps that the current study sought fill. Past analysts like Pooja and Singh (2009), Francesca and Claeys (2010), Batiz-Lazo, and Woldesenbet (2006), and Mwanja and Muganda (2011) have delivered blended outcomes with respect to the effect of advancements on bank execution. Pooja and Singh (2009), in their investigations reasoned that there was minimal impact of development on bank performance, while Batiz-Lazo and Woldesenbet (2006) and Mwanja and Muganda (2011) inferred that monetary advancement had a major commitment to banking performance. This blended end made the need to do an examination from a Kenyan setting to understand the impact of E-Banking on business banks financial performance.

Despite the significance of e-banking in clarifying financial execution, the effect of e-counts on banks execution is as yet misconstrued for two primary reasons; first, there is an absence of comprehension about the drivers of advancement, and also, development's effect on bank's exhibition stays untested Mabrouk and Mamoghli (2010). This is by addressing whether mobile banking, internet banking, Automated teller machine and debit or credit card banking influence financial performance. The study therefore sought to answer to explain the question that does electronic banking effect financial performance of commercial banks in Kenya?

### **1.3. Objective of the Study**

To analyze the effect of e-banking on financial performance of commercial banks in Kenya.

### **1.4. Value of the study**

The investigation tries to show the current status of electronic banking in Kenya. The study findings predictably provide value to the industry, academia and policy makers where various beneficiaries will profit. The findings are anticipated to be useful in policy formulation for future decision making and planning. Those in managerial positions in organizations or institutions can use findings from this study to formulate policies that cover use, and regulation of electronic technologies in enhancing their financial performance. Furthermore, national policies on electronic banking and financial performance can be formulated by the relevant ministry and regulatory departments of finance in the country.

In respect to industry and practice, the findings are anticipated to improve the methods, systems and products that commercial or financial institutions would offer to its customers. The study will provide relevant data that will enable managers to formulate strategies that are up to date to normal operations of their respective banks. They can use findings to justify the importance of embracing electronic banking in enhancing financial performance of their respective banks.

In the field of academia, the study findings will provide enriching theoretical and empirical secondary source of information on electronic banking and financial performance which will be available in soft and hard copies. Scholars or learners can use findings as a reference for their assignments and scholarly work while future researchers can use the gaps in this study to formulate future research topics or enrich their own literature reviews.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This section presents a review of relevant theories and empirical studies explaining the relation between the study variables. Furthermore, the section outlines summary of gaps obtained after reviewing the literature, and conceptualization of the variables using an illustration.

#### **2.2 Theoretical Review**

Three theories namely; technology acceptance model, financial inclusion theory and innovation diffusion theory provided the theoretical foundation for this study.

##### **2.2.1 Innovation Diffusion Theory**

This hypothesis, achieved by E.M. Rogers in 1962, is one of the most established sociology speculations. Rogers' hypothesis was created in the expansive setting of advancements, all things considered, and not IT in essence. Since his enunciation of the hypothesis, others have distinguished notable impacts explicitly for IT selection practices by inspecting elective models established in friendly brain science (Ajzen and Fishbein, 1980; Fishbein and Ajzen, 1975; Ajzen and Madden, 1986), social learning hypothesis (Bandura, 1997), and social impact speculations (Fulk et al., 1990).

The hypothesis insists that organizations take part in the dissemination of development to acquire upper hand, lessen costs and secure their essential positions (Bradley et al., 2002). It additionally assists with understanding clients' conduct better in the reception or non-appropriation of an advancement (Vaugh and Schavione, 2010). Information includes

monitoring the accessibility of the framework and its functionalities prompting a proactive looking for of data on the best way to utilize it (Kamarulzaman and Azmi, 2010).

Influence is the development of an uplifting disposition towards the innovation. Choices includes receive or reject choice on the advancement while execution includes dynamic use of the development. The last stage is the affirmation stage in which there is positive supporting centered around certain outcomes from development (Mandola, 2013). Hussein (2010) claims that dissemination rate is influenced by various elements including the development's relative advantages, similarity, and intricacy. This hypothesis is relevant to this investigation in the setting the pace of use of the Mobile counts on the monetary execution of the banks.

### **2.2.2 Financial Inclusion Theory**

The theory of financial inclusion according to Ngumo (2012), was an original idea of British government administrative units. The monetary consideration hypothesis was upheld by Chakrabarty in 2011. Monetary consideration alludes to the way toward shielding admittance to appropriate monetary items and administrations needed by all areas of the general public everywhere and vulnerable gatherings like feeblers segments and helpless pay bunches explicitly, at a sensible expense, in an equitable and clear way, by standard associations players (Vijayalakshmi, 2010).

As indicated by Vijayalakshmi (2010), admittance to monetary administrations, for example, Mobile cash move ought to be available when required, and items ought to be altered to explicit necessities; the costs for these administrations should be of a sensible cost, including every inestimable expense, such as going for significant distance to a bank

and all the more critically, it needs to make a feeling of business, convert into results for the suppliers of these administrations, and thus be open on a ceaseless ground of the target of the broad monetary fenced in area is to give a different scope of administrations for accomplishing an overall arrangement of administrations for the improvement of the country (Gardeva and Rhyne, 2011).

The point of this hypothesis is to permit everybody to share totally in the formal monetary framework, which will in the long run benefit people, the business firms which serve them, and society by and large (McKinsey and friends, 2010). The hypothesis is appropriate in this examination in the setting that web Banking administrations are effectively accessible and economically accessible to shoppers. The hypothesis is additionally appropriate to this investigation as the exploration inspects how the utilization of internet banking empowers more spending on given things.

### **2.2.3 Technology Acceptance Model (TAM)**

Fred David built up the technology acceptance model in 1989. The TAM model is viewed as the most persuasive and generally utilized hypothesis depicting an individual acknowledgment information framework (Lee et al., 2003). The model previously entailed; saw convenience, seen straightforwardness to utilize, demeanor toward utilizing, and the current framework employments. Additional factors i.e., outer factors and social goal were later added (Eramus et al., 2015).

Venkatesh and Davis (2000) proposed extra factor to the first TAM model, and they considered different elements alluded to as outside factors that may impact the convictions

of an individual toward a framework, such factors are framework attributes, client preparing, client investment in the plan and the idea of the usage cycle (Chullur, 2009).

The model has been utilized by numerous scientists in considering the reception and dispersion of different data framework advances (Riyadh et al., 2009). Cap shows that apparent helpfulness and saw convenience foresee mentality toward utilizing portable cash administrations, seen handiness likewise impact the clients' conduct goal (BI) utilizing versatile cash benefits, a decision to utilize additionally decide the genuine of utilizing Mobile cash administrations.

### **2.3 Empirical Literature Review**

The utility of electronic in banking sector is explained by several studies, Porteous (2016) observes that M-banking usage has led to higher productivity in financial institutions where small amount of money has been able to be deposited or withdraw directly from respective personal bank accounts. Banking institutions management have enjoyed more productivity from numerous transactions performed by the use of m-banking (Porteous, 2016). This brings about the improved financial performance of the financial industry. As per Nasikye (2014), Mobile banking (m-banking) includes utilizing a cell phone or another cell phone to attempt monetary exchanges connected to a customer account. It alludes to furnishing banking and monetary assistance with portable media transmission gadgets (Owen 2015).

A study conducted by Sewpersad (2010) portrays ATMs as an electronic broadcasting gadget for communications which conveys services to the benefactors of monetary firms by allowing transactions to occur in a public space without any interruptions by bank staff, customers or agents. As indicated by Narteh (2015), comfort, dependability, security, and



convenience eclipsed as the significant components of ATMs administration quality. Fannie Mae Foundation report showed that mechanized teller machines serve around 420 million annually on average. Although the study points the usefulness and challenges of ATM it lacks the linkage with financial performance.

Studies have shown the use of online banking in business but have lacked to demonstrate its contribution to performance. For example, Steven (2012) internet banking likewise alluded to as online banking and is demonstrated by utilization of telecom organizations and web to give a broad cluster of improved monetary administrations and items to customers through a site or a framework worked by a monetary establishment.

Some of the studies have demonstrated the products emanating from e-banking but lacked to link with financial performance. Naim (2017) states that a debit card is a card used to make purchases rather than money. It is similar to Mastercard, but the cash is promptly moved straightforwardly from the cardholder's financial balance to pay for the exchange. Debit cards have become an unavoidable truth for most shoppers and are a piece of the purchaser culture. Kamal (2012) directed an exam of the Electronic debit card utilization and the impact on Bank's benefit: particularly the Rate of Return on proprietor's value structure. A review was applied on a sample of banks from Jordan, yearly reports were used to gather data and information and by getting back to the credit board in business banks. SPSS framework was used for analysis. The findings revealed that there is a positive association debit cards, the overall gain from debit cards and the Return on investments of banks.

A study indicating conceptual gap was performed by Tasmin, Alhaji, Norazlin and Josu (2013) who researched the results of internet banking on help service delivery at the

business banks in Malaysia. In particular, the investigation analyzed the impact of cost, security and comfort on admittance to banking administrations through internet banking. A cross-sectional research design was used and essential information assembled through surveys organization. Descriptive statistics, correlation and regression analysis analysed the data. It was discovered that there was positive and huge impact of online banking and administration conveyance of business banks. It was important to supplement quantitative information with subjective information.

Local study by Mateka, Gogo, and Omagwa (2015) tried to review the impact of internet banking in relation to the performance of recorded banks in Kenya. The investigation utilized the scientific method descriptive survey design. The objective populace was all representatives of recorded business banks in Kenya. A scientific random method of sampling was applied to mark the respondents of the aforementioned study. Questionnaires were the main source used to gather information. A critical finding of the examination uncovered that virtual banking has positive effect on bank earnings, working expenses, credit book and client stores.

The association between virtual banking and bank performance in Kenya was explained by a study by Mabwai, (2016). This study employed a descriptive design, and purposive sampling. The study only used data that was secondary in nature that was collected from statements issued from the bank. The outcomes uncovered that monetary performance in banks is influenced by the amount of mobile banking financial exchanges, capital amplexness, share of the market and the amount of the resources.

Yousif (2017) did an investigation on how customer service quality has been impacted with e-banking orientation. The target populace was customers of the banks in Saudi Arabia and

the collection of information done utilizing a questionnaire. Investigation of data obtained was done utilizing descriptive examination, factor investigation, and SPSS version 24. The investigation concluded that e-banking orientation positively impacts e-service security and reliability.

## **2.5 Summary of the Reviewed Literature**

Reviews of related studies pointed certain gaps in which the study sought to fulfil through the methodological formulation. These studies provided similar and valuable findings to the current study. Tasmin, Alhaji, Norazlin and Josu (2013) did a cross sectional design of the effect of internet banking on service delivery at the business banks in Malaysia. The gap in this research is that the study used a different research design and dependent variable from the current study. Similar in methodological approach, Mateka, Gogo, and Omagwa (2015) did a descriptive survey design on impact of internet banking in relation to the performance of recorded banks in Kenya. The gap in the study is that it used general performance rather than financial performance which will be used by the current study.

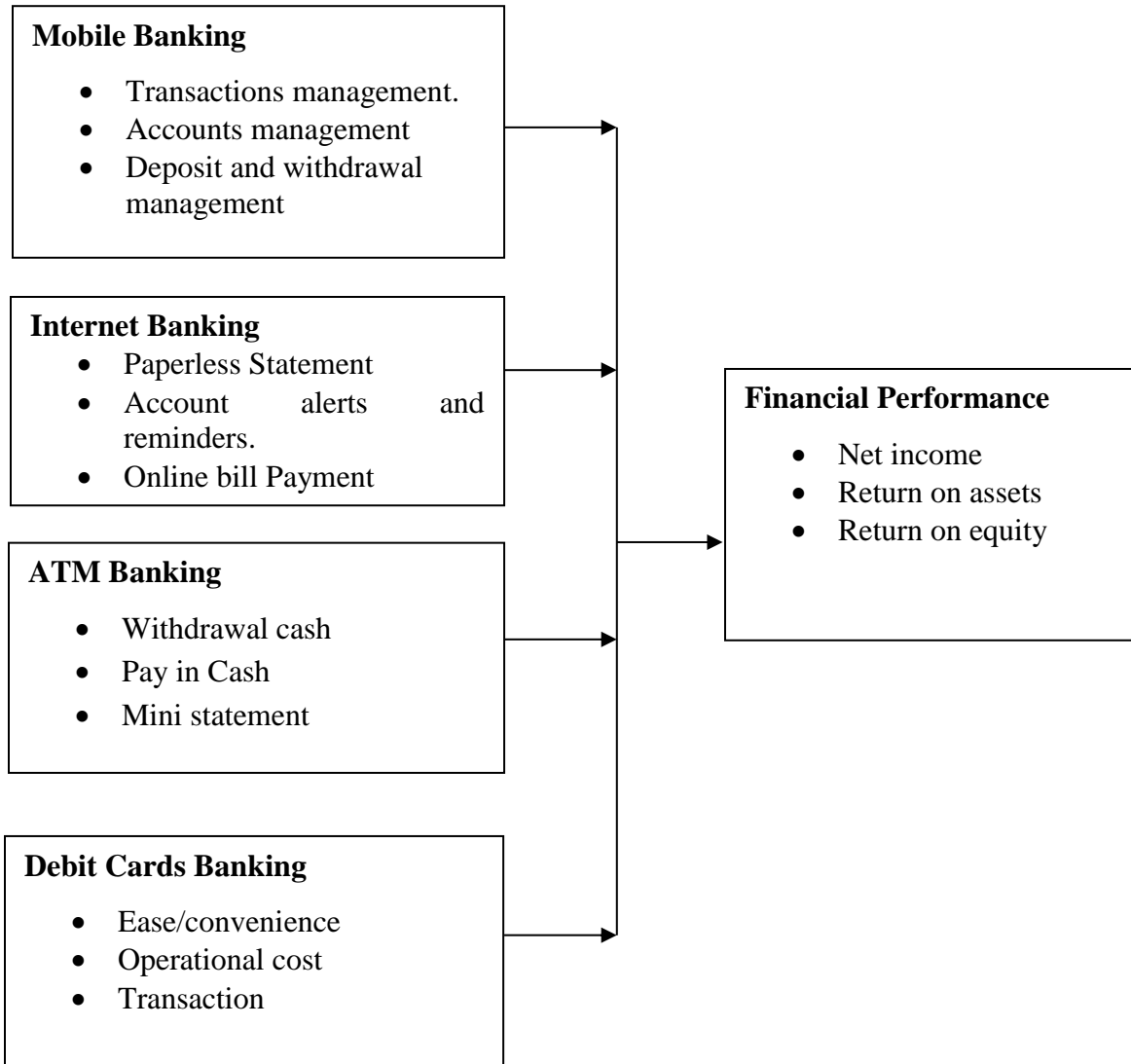
Different in the variables of the study but similar in research design to the current study, Mabwai, (2016) conducted a descriptive study on impact of virtual banking on the banks performance in Kenya. The gap is on the use of virtual banking and general performance which is different from the current study. Lastly, a descriptive study by Yousif (2017) which was aimed at establishing the influence of customer service quality on e-banking orientation. The gap in this study is on the use of different independent variable of the study and different contextual formulation of the variables of the study.

## **2.6 Conceptual Model**

Atkinson (2006) characterizes a conceptual framework as an exploration device that reasons to build up a comprehension of the factors under scrutiny. As indicated by him, a conceptual framework considers the hypothetical and conceptual issues encompassing examination work and structure an intelligent and predictable establishment that supported the turn of events and ID of existing factors. The independent variable of the investigation was electronic banking, particularly Mobile banking, internet banking, automated teller machine banking, and debit banking. The dependent variable of the examination was the financial performance of the commercial banks inside Nakuru CBD, as depicted in Figure 2.1.

**Independent Variable-Electronic Banking**

**Dependent Variable**



**Figure 2. 1: Conceptual Model**

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.0. Introduction**

This section provides principles used by the research to gather information to answer the study research questions. Several steps from right units of study, ways of collecting, analysing and presenting data is outlined in this chapter. These parts follow a step-to-step procedure which additionally forms the basis of the next chapter.

#### **3.1. Research design**

This alludes to the technique used to complete the purpose of the study. This investigation embraced documentary review. The design enabled a review of comprehensive secondary data to be collected, arrangement and organization of data collected in this study. As per Mugenda and Mugenda (2003), documentary review design is a guideline that enable research questions to be answered comprehensively from a target population. It's bit of leeway is that, it is utilized broadly to portray conduct, demeanour, trademark and qualities.

#### **3.2. Target Population**

The target population alludes a whole gathering of entities who have something in common (Kombo& Tromp, (2006). The unit of study were the registered and licensed 42 commercial banks operating in Kenya according to Central Bank of Kenya report of 2020.

Census is a technique whereby entire populace is studied (Mugenda, 2001). This system should be used exactly when there's a need to have information on each piece of the populace. Thusly, the methodology has the potential gain of being broad. Since the

populace was manageable, the investigator conducted a census of all the 42 commercial banks which provided suitable information viable to answer the study objectives.

### **3.4 Data Collection**

Secondary data was collected from the commercial bank reports for the year 2017-2020. The record checklists provided a guide used to gather data for this study. The record checklist was structured to answer the study objectives. The division was according to the variables of the study. A period of 7 days was scheduled for data collection. The data collected was scrutinized by the subject experts to ascertain their validity and reliability.

### **3.5 Data analysis**

Data analysis is a procedure used by a researcher to convert data collected into useful information relevant to the users. The information that was gathered in this investigation was quantitative in nature and was analyzed using descriptive and inferential statistics aided with SPSS computerized package windows version 24. Numerics obtained from the reports of the company were coded as strings type of data in SPSS which enabled analysis of data. The correlation and multi-regression model are the inferential statistics that were used to explain associations between variables.

The Pearson moment correlation coefficient ( $r$ ) was used to test the closeness the independent variables (Mobile, internet, ATM, Debit cards) have on the dependent variable (financial performance). Correlation was measured according to the scale;  $<0.3$ =No correlation,  $0.4-0.6$ =average correlation,  $>0.7$ =closely correlated. The multiple regression analysis sought to establish whether the independent variables (mobile, internet, ATM, debit/credit cards) can predict the dependent variable (financial performance). Before

acceptance of the multi-regression analysis the various for the model were tested. They included: multicollinearity, linearity. Homoscedastic, and independence of errors. The multi regression model was as follows:

Regression Model:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e \dots\dots\dots$$

Where;

Y – Financial performance (Dependent Variable)

$\beta_0$  – Constant Term, ( $\beta_1, \beta_2, \beta_3, \beta_4$ ) – Beta Coefficients

$X_1$  – Mobile banking

$X_2$  – Internet Banking

$X_3$  – ATM banking

$X_4$  . Debit/Credit banking

e- Error term

The information analyzed from the study was presented in form of frequency distribution tables.



## **CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND DISCUSSION**

### **4.1. Introduction**

The chapter presents data analysis, presentation and discussion of findings based on the themes of the study. Data was analysed using thematic analysis which was obtained from secondary sources. The unit of study of the study was commercial banks found in Kenya. The study was able to obtain 40 commercial banks out of the 42 which were registered in operate in Kenya under the central bank of bank 2020 since the two commercial banks were found to be have been suspended by the Kenyan Government.

### **4.2. General information**

The study reviewed various commercial banks records and secondary sources to establish the number of years the banks have been operational, and the number of branches. Furthermore, the study assessed whether the commercial banks have electronic banks. The secondary data answering the questions was presented in Table 1,2,3. Data in Table 1-3 was categorized in to three; banks with 50 & above years of operations, 20 to 49 years, and below 19 years.

**Table 1 Commercial banks with 50 & above years of operations**

<b>Name of the Bank</b>	<b>No of years in Business</b>	<b>No of branches</b>	<b>Electronic banking</b>
Bank of Baroda Limited	68	13	Digital banking
Bank of India	68	7	Internet banking
Absa (Barclays) Bank	105	108	Digital banking
Commercial Bank of Africa Limited	54	36	Digital banking
Cooperative Bank of Kenya Limited	53	142	Internet/Mobile banking
Habib Bank Limited	65	6	Internet Banking
KCB Bank Kenya Limited	125	199	Mobile/internet banking
National Bank of Kenya Limited	53	81	Mobile banking
Standard Chartered Bank Kenya	111	38	Internet banking

**Source: CBK:2020, KAB 2020**

Table 1 shows that all the ten commercial banks with 50 years of business experience have electronic banking either internet, digital or banking. A large number of these commercial banks have more branches across the country. Table 2 shows a category of banks with 20-49 years of experience.

**Table 2 Commercial banks between 20 -49 years of operations**

<b>Name of the Bank</b>	<b>No of years in Business</b>	<b>No of branches</b>	<b>Electronic banking</b>
African Banking Corporation Limited	27	11	Digital banking
Charterhouse Bank Limited	23	10	Closed
Citi Bank NA Kenya	47	3	None
Consolidated Bank of Kenya Limited	32	17	Internet Banking
Credit Bank Limited	27	15	Digital Banking
Development Bank of Kenya Limited	25	3	Mobile banking
Diamond Trust Bank Kenya Limited	27	49	Digital Banking
Spire Bank Limited	26	13	Internet Banking
Fidelity Commercial Bank Limited	25	15	Digital Banking
Guaranty Trust Bank Limited	26	16	Digital Banking
Giro Commercial Bank Limited	29	8	Mobile Banking
Guardian Bank Limited	26	10	Internet Banking
Habib Bank AG Zurich	43	6	Internet Banking
I&M Bank Limited	25	34	Internet Banking
Middle East Bank Limited	41	5	Digital Banking
NIC Bank Limited	26	31	Internet Banking
M-Oriental Bank Limited	30	9	Internet Banking
Paramount Bank Limited	26	7	Digital Banking
Prime Bank Limited	29	20	Internet Banking
Sidian Bank Limited	22	37	Internet Banking
Trans-National Bank Limited	36	21	Mobile Banking

**Source: CBK 2020, KAB 2020**

The findings in Table 2 shows all the 19 commercial banks with 20 to 49 years are using electronic banking. Majority of these commercial banks have operated between 20-49 years with digital, mobile and internet banking. The third category include commercial banks with less than 19 years of business operations.

**Table 3 Commercial banks between less than 20 years of operations**

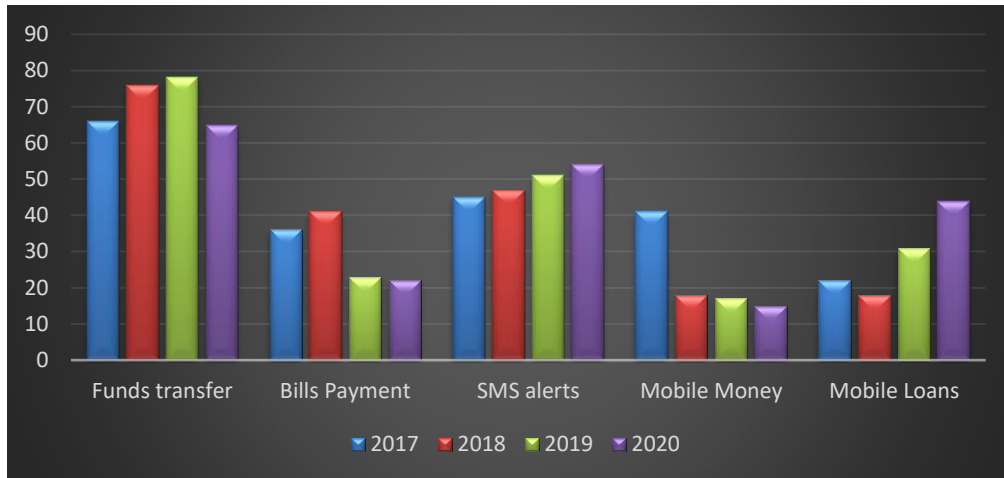
<b>Name of the Bank</b>	<b>No of years in Business</b>	<b>No of branches</b>	<b>Electronic banking</b>
Gulf African Bank Limited	14	17	Digital
Jamii Bora Bank Limited	11	27	Digital
UBA Kenya Bank Limited	12	4	Internet
Victoria Commercial bank	4	25	Mobile
Bank of African Kenya Limited	17	42	Internet
Stanbic Bank Kenya Limited	13	27	Digital
Ecobank Kenya Limited	13	31	Digital
Equity Bank Kenya Limited	17	167	Mobile/Digital
Family Bank Limited	14	88	Mobile
First Community Bank Limited	13	18	Internet

**Source: CBK 2020, KAB 2021**

Table 3 shows that the 10 commercial banks with 19 years of business operations have electronic banking. Both banks are either offering digital, internet and mobile banking. Each of these banks have several numbers of branches.

### **4.3. Mobile Banking and financial performance**

Mobile banking is one of the forms of electronic banking that commercial banks utilize in enhancing their financial performance. Secondary data was reviewed to answer the following questions; availability of mobile banking, products or services offered through mobile banking, and mobile banking performance during 2017 to 2020. The general information showed that some of the commercial banks have mobile aided applications to increase their performance. Figure 1 shows the mobile products or services offered by the financial banks.



**Figure 1 Mobile banking products or services**

**Source: CBK reports (2017,2018,2019, 2020)**

The findings in Figure 1 shows that funds transfer was dominant service offered by the commercial bank during the period 2017 to 2020, followed by SMS alerts, then bills payments and mobile loans and lastly mobile loans. The use of SMS alerts increased in use during the 2017 to 2020 period. Mobile money and loans declined during the year 2020 as compared to the other years. Table 4 shows a summary of mobile transactions, loan applications, and amount of loans as reported by central bank of Kenya 2010.

**Table 4 Mobile banking performance**

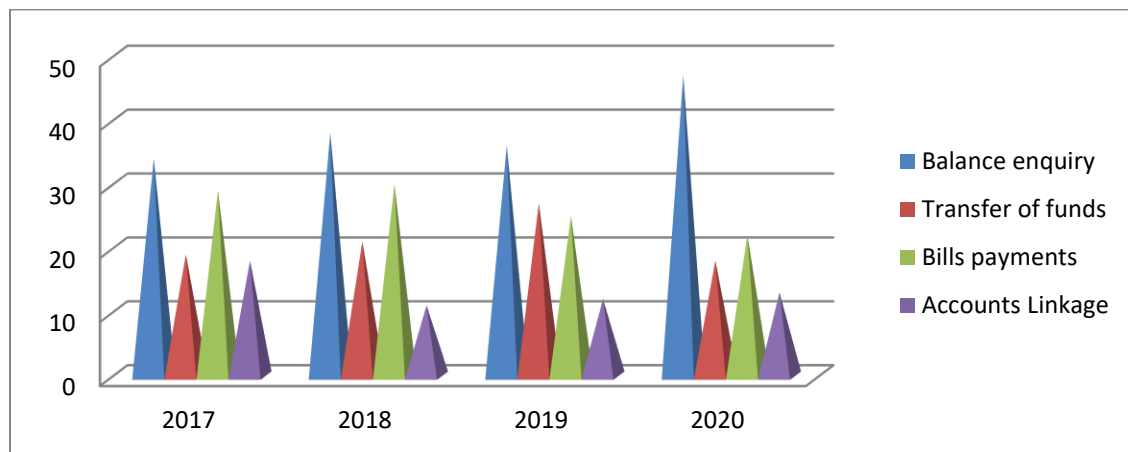
<b>Year</b>	<b>Mobile banking transaction (Billions)</b>	<b>Mobile loan applications (Millions)</b>	<b>Amount of Mobile Loans (Millions)</b>
2017	340.93	18.4	15102
2018	355.50	13.2	18543
2019	402.25	14.7	22552
2020	432.35	9.1	5450

**Source: CBK reports (2017,2018,2019, 2020), Julia (2019)**

From the Table 4 shows that the amount of mobile loans declined during the year 2017 to 2020, and this is also reflected with a decline in mobile loan applications. Mobile banking transactions increased during the period 2017 to 2020. In 2020 the general commercial mobile performance declined as reported by the CBK report.

#### 4.4. Internet Banking and financial performance

The study reviewed secondary records to establish whether commercial banks offer internet banking, if yes which are some of the services offered through internet banking, and performance metrics during 2017 to 2020. The CBK report of 2020 showed that 18 commercial banks had registered to offer internet banking. Figure 2 shows a summary of internet products offered by the commercial banks during the years 2017 to 2020.



**Figure 2 Internet Banking Products**

**Source: CBK reports (2017,2018,2019, 2020)**

The findings from the reviewed from Figure 2 shows that there was an increase among the banking customers who were making a balance enquiry over the four years period, and this was followed by the use of internet banking to make payments. Customers linking their

accounts during this period remained constant over the period. Transfer of funds increased between 2017 to 2019 but declined in 2020. Table 5 shows the performance summary of the internet banking as reported by the CBK 2020.

**Table 5 Internet Banking value of transactions**

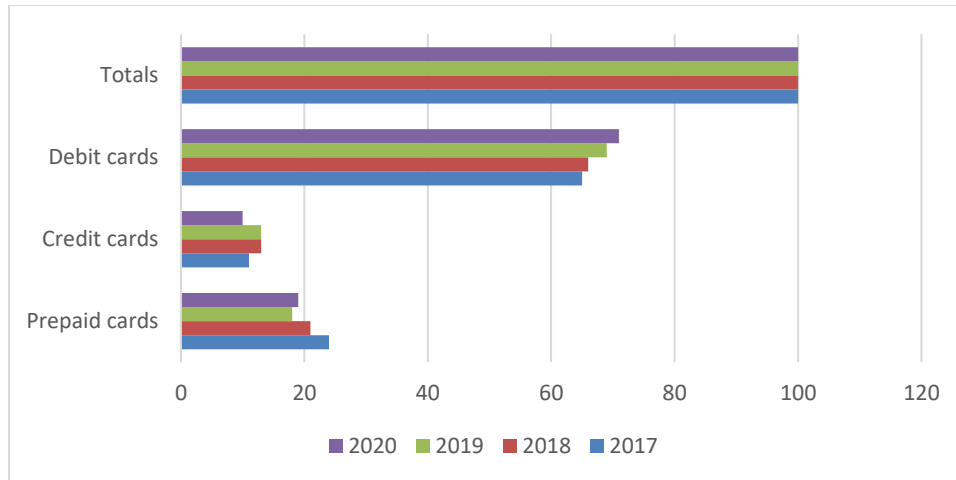
<b>Year</b>	<b>Internet Banking transaction (Billions)</b>	<b>Fees on Internet Banking (Millions)</b>
2017	23.3	54.7
2018	25.5	68.0
2019	30.2	74.5
2020	26.2	45.3

Source: CBK 2020

Table 5 shows that the internet banking transactions increased between 2017 to 2019 after which it declined in 2020. Similarly, the fees charges on internet banking increased between 2017 to 2019 after which it declined in 2020.

#### **4.5. Cards and Automated Teller Machine Usage**

Secondary data were reviewed to establish whether commercial banks have embraced the use of cards and automated Teller machines in their operations. Furthermore, the study sought to review on the performance of the commercial banks in respect to use of cards and automated teller machines. Figure 3 shows a summary of the card's usage during the years between 2017 to 2019 as reported by statistica.com.



**Source: Statistica.com, 2020**

**Figure 3: Banking Cards usage**

The findings reported in Figure 3 shows that percentage usage of the debit cards is more compared to other banking cards. The use of credit cards and prepaid cards declined over the four years period while that of debit cards increased during the stipulated periods.

The study sought to establish the number of transactions that are performed over the counter compared to the number of transactions performed using Automated Teller machines (ATM). The findings were reported in Table 6.

**Table 6 No of transactions over counter and ATM**

<b>Year</b>	<b>Over the counter banking transaction (Billions)</b>	<b>ATM transactions (Billions)</b>
2017	89.1	34.3
2018	95.6	54.6
2019	101	66.7
2020	82.4	71.4

Source: statistica.com, 2020



Table 6 findings shows that majority of the banking customers perform their transactions over the counter. There was an increase in number of transactions performed using the ATM in the four years period. Furthermore, a decline was witnessed in the year 2020 in the number of transactions performed over the counter.

#### **4.5.1. Banking cards and ATM value of transactions**

The study sought to establish the value of transaction that was performed through the ATMs using the debt cards and the value of transactions of the use of credit cards over the four years period. Table 7 shows a summary of these findings.

**Table 7 Banking cards and ATM value of transactions**

<b>VALUE OF TRANSACTIONS (BILLIONS KSH)</b>					
<b>Month</b>	<b>Year</b>	<b>Credit cards</b>	<b>Debit cards</b>	<b>ATM charges</b>	<b>Totals</b>
January	2020	743	59459	0.1	60202
	2019	815	40680	0.5	41495
	2018	894	39426	0.4	40320
	2017	1255	37846	0.3	39101
February	2020	626	53055	0.3	53681
	2019	679	57335	0.2	58014
	2018	773	36949	0.3	37722
	2017	1080	36820	0.2	37900
March	2020	611	51309	0.24	51920
	2019	673	63912	0.3	64585
	2018	835	39976	0.2	40811
	2017	1214	38968	0.3	40182
April	2020	447	34692	0.2	35139
	2019	701	62502	0.2	63203
	2018	802	38884	0.4	39686
	2017	1188	38868	0.2	40056
May	2020	433	41229	0.4	41662
	2019	504	40234	0.2	40738
	2018	1295	39556	0.2	40851
	2017	1272	38573	0.3	39845
June	2020	617	39578	0.04	40195
	2019	629	57283	0.2	57912
	2018	1211	39127	0.04	40338
	2017	1195	37651	0.1	38846
July	2020	506	50782	0.11	51288
	2019	627	53340	0.2	53967
	2018	1193	39196	0.06	40389
	2017	825	37985	0.3	38810

August	2020	542	56880	0.12	57422
	2019	643	58512	0.5	59155
	2018	1293	56985	0.3	58278
	2017	824	38178	0.3	39002
September	2020	576	58789	0.14	59365
	2019	737	58317	0.3	59054
	2018	802	35485	0.2	36287
	2017	818	37814	0.4	38632
October	2020	596	65628	0.12	66224
	2019	699	62197	0.3	62896
	2018	845	40743	0.5	41588
	2017	840	37784	0.3	38624
November	2020	451	61133	0.1	61584
	2019	669	58317	0.2	58986
	2018	796	40576	0.6	41372
	2017	803	38211	0.4	39014
December	2020	579	70206	0.1	70785
	2019	793	63719	0.2	64512
	2018	781	45448	0.5	46229
	2017	846	43606	0.5	44452

Source: Kenya association of Bankers, 2020.

The findings as outlined in Table 7 shows that over the 12 months period in all the four years (2017 to 2020) the value of transactions of the debit cards increased significantly. On the other hand, the value of transactions from the credit cards in all the twelve months of the four years (2017 to 2020) declined. But the total value of the transactions all transactions from the cards increased in all these years. Value charged on the ATMS remained averagely over the 12 months in all the four years.

#### 4.6. Financial performance of the commercial banks

The secondary showed the financial performance of the commercial banks. The financial performance is based on metrics namely; net revenue, return on assets, return on equity, cost income ratio. The CBK report of 2020 presented in Table 8 shows findings summary of these financial management metric.

**Table 8 Financial performance**

<b>Year</b>	<b>Average net income (Billions)</b>	<b>Return on Assets</b>	<b>Return on Equity</b>	<b>Cost-Income ratio</b>
2017	134.5	3.40%	20.80%	46.00%
2018	156.4	3.50%	22.60%	43.50%
2019	177.5	3.30%	21.70%	44.70%
2020	108.5	2.60%	18.50%	41.20%
<b>Average</b>	144.225	3.20%	20.90%	43.85%

**Source: CBK reports (2017,2018,2019, 2020)**

The findings in Table 8 shows that the net income increased between the years 2017 to 2019 and then declined in 2020. The average return on assets (ROA) was 3.2%, average return on Equity (ROE) was 20.9%, and cost-income ratio was 43.85%. The findings shows that the commercial banks perform well as reported by the financial performance metrics.

#### 4.7. Inferential statistics

Measures of association were used to establish the relationship between e-banking variables (Mobile, internet, card and ATM) with financial performance. The measures of association were correlation analysis and multiple regression model. These associations were tested at 95% significance level with the relevant statistical components.

### 4.7.1. Correlation analysis

The study did a correlation between average net income and number of transactions for mobile, internet banking, ATM and card transactions. Correlation values above 70% show that the variables are correlated. Findings of the correlation was reported in Table 9.

**Table 9 Correlations**

			<b>Mobile Banking</b>	<b>Internet Banking</b>	<b>Card usage</b>	<b>ATM Usage</b>	<b>Average net income</b>
Spearman's rho	Mobile Banking	Correlation Coefficient	1.000	.628**	.634**	.797**	.688**
		Sig. (2-tailed)	.	.000	.000	.000	.000
		N	40	40	40	40	40
	Internet Banking	Correlation Coefficient	.628**	1.000	.448**	.650**	.507**
		Sig. (2-tailed)	.000	.	.000	.000	.000
		N	40	40	40	40	40
	Card Usage	Correlation Coefficient	.634**	.448**	1.000	.712**	.556**
		Sig. (2-tailed)	.000	.000		.000	.000
		N	40	40	40	40	40
	ATM Usage	Correlation Coefficient	.797**	.650**	.712**	1.000	.697**
		Sig. (2-tailed)	.000	.000	.000		.000
		N	40	168	168	40	40
	Average net income	Correlation Coefficient	.688**	.507**	.556**	.697**	1.000
		Sig. (2-tailed)	.000	.000	.000	.000	.
		N	40	40	40	40	40

\*\* . Correlation is significant at the 0.05 level (2-tailed).

Findings in Table 9 shows that at 95% level of significance; a positive correlation ( $r=0.688$ ) exists between mobile banking and average net income. The is an average correlation ( $r=0.507$ ) between internet banking and average net income, and an average correlation ( $r=0.556$ ) as well exists between use of banking cards and net incomes. Lastly, a positive correlation ( $r=0.697$ ) exists between ATM transactions and average net incomes.

#### 4.7.2. Multiple regression Model

The multiple regression model was used to establish the extent to which e-banking predictors (mobile, internet, Cards and ATM) contribute to financial performance. The various assumptions were tested namely; multicollinearity, linearity. Homoscedastic, and independence of errors. The assumptions were not violated and therefore the multi-regression analysis was accepted. Table 10 shows the model summary of the association.

**Table 10 Model summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.978 <sup>a</sup>	.956	.955	.31890

a. Predictors: (Constant), mobile banking, internet banking, Banking Cards, ATM

b. Dependent Variable: Average net income

The model summary shows (Table 10) that the adjusted R-square=0.955 which shows that the value of predictors (mobile banking, internet banking, Banking Cards, ATM) contributes to 95.5% of the financial performance (Average net income). The study sought to establish whether the value of adjusted R-square is significant therefore ANOVA was tested and findings presented in Table 11.

**Table 11 ANOVA**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	337.383	2	84.346	829.387	.000 <sup>b</sup>
	Residual	15.560	40	.102		
	Total	352.943	38			

a. Dependent Variable: Average net income

b. Predictors: (Constant), mobile banking, internet banking, Banking Cards, ATM

The ANOVA findings (Table 11) shows that  $p\text{-value} < 0.05$ , which shows that  $F (df=38)=829.4$  is significant. Therefore, the study predictors are significant in contributing to performance. The study sought to establish the extent to which the predictors coefficient contributes to financial performance after they were found to be significant. Table 12 shows the coefficients of the relationship between the predictors and dependent variable.

**Table 12 Coefficients**

		<b>Coefficients<sup>a</sup></b>				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.013	.112		7.524	.000
	Mobile banking	.219	.116	.273	7.072	.000
	Internet banking	.052	.047	.374	7.444	.000
	Banking Cards	.065	.047	.059	1.377	.001
	ATM	.318	.046	.326	6.956	.000

a. Dependent Variable: Financial Performance

Table 12 findings shows that value of mobile banking transactions contributes 21.9% to one unit of financial performance (average net income) at  $t=7.524$ ,  $p < 0.05$ . The study further found that value of internet banking contributes 5.2% to one unit of financial performance (average net income) at  $t=7.444$ ,  $P < 0.05$ . While value of banking cards contributes to 6.5% to one unit of financial performance (average net income) at  $t=1.377$ ,  $p < 0.05$ . Lastly, value of ATM contributes to 31.8% to one unit of financial performance (average net income) at  $t=6.956$ ,  $p < 0.05$ . The multiple regression analysis model will therefore be presented as follows;

Regression Model:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2+ \beta_3X_3 + \beta_4X_4 + e \dots\dots\dots$$

Where;

Y – Financial performance (Dependent Variable)

$\beta_0$  – Constant Term, ( $\beta_1, \beta_2, \beta_3, \beta_4$ ) – Beta Coefficients

$X_1$  – Mobile banking

$X_2$  – Internet Banking =

$X_3$  – ATM banking

$X_4$  . Debit/Credit banking

e- Error term

$\beta_1=0.219, \beta_2=0.052, \beta_3=0.065, \beta_4=0.318$ ,

$e=0.112$

$\beta_0=1.013$

The regression model:

$$Y = 1.013 + 0.219X_1 + 0.052X_2+ 0.065X_3 + 0.318X_4 + 0.112$$

#### **4.7. Discussion of the findings**

The study established from the secondary data that commercial banks are either offering electronic banking in form of internet, mobile cards banking or ATMs, and large number of these commercial banks have more branches across the country. This finding is supported by a study by Gitau, Mukulu and Kihoro (2016) who stated that commercial banks due to competition have fully embraced electronic banking in their operations. The study further found that funds transfer via mobile and internet banking was dominant services offered by the commercial bank. This is well explained by Karani (2015) who opines that customer find transfer via mobile or internet more convenient and cheaper rather than visiting the banking halls for the service. The study found that for the four years (2017-2020) the value of mobile transactions had increased. Karani (2015) supports this



by stating that more usage and acquisition of mobile phones have led to increased use of mobile banking among banking customers.

The study established further that the percentage usage of the debit cards is more compared to other banking cards but majority of the banking customers were found to perform their transactions over the counter. Mutinda (2014) explains that a large of the customers prefer to visit banking halls due to suspicions issues. The increase use of debit cards is explained is due to awareness creation by the banking staff as pointed by Karani (2015). The study established that for the 4 years period the net income had increased this was reported by CBK (2010). The finding is supported by Anyasi and Otubu (2018) states that increased products being offered by the financial institutions electronically have boosted their income levels.

The study found a positive correlation exists between mobile banking and use of ATM banking and average net income. Similarly, to the finding Yousif (2017) found in their study that e-banking contributes to performance of banking institutions. The study found that financial performance is predicted by electronic banking components (mobile, internet, banking cards and ATM transactions). This relationship between predictors and dependent variable is well supported by a study conducted by Afandi (2017) who established that electronic banking significantly predicts financial performance of community banking institutions.

## **CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMEDATIONS**

### **5.1. Introduction**

The section presents a summary of the key findings reported and presented in chapter four data analysis, presentation and discussions. The chapter is organized to denote the key empirical and theoretical findings that answer the objective of the study. The chapter further points out the conclusion, recommendation, study limitations and suggestion for future studies.

### **5.2. Summary of the Findings**

The study was able to obtain 40 commercial banks out of the 42 which were registered in operate in Kenya under the central bank of bank 2020. Among these two commercial banks were found to be have been suspended by the Kenyan Government. The study found that all the commercial banks have electronic banking either internet, digital or banking. The study additionally established that funds transfer was dominant service transacted by the commercial bank during the period 2017 to 2020. Mobile money and loans declined during the year 2020 as compared to the other years.

The secondary data reviewed showed that the internet banking transactions increased between 2017 to 2019 after which it declined in 2020. Furthermore, there is a higher percentage usage of the debit cards as compared to other banking cards, and findings showed that over the 12 months period in all the four years (2017 to 2020) the value of transactions of the debit cards increased significantly. Majority of the banking customers perform their transactions over the counter. Secondary data showed that the net income had increased between the years 2017 to 2019 and then declined in 2020.

Inferential statistics showed that a positive correlation exists between value of mobile banking, value of ATM transactions and average net income. While there is an average correlation between internet, banking cards banking and average net income. The multiple regression model showed that the adjusted R-square=0.955 which shows that the value of predictors (mobile banking, internet banking, Banking Cards, ATM) contributes to 95.5% of the financial performance (Average net income).

## **5.2. Conclusion**

The study generally concludes that e-banking have an effect on financial performance among commercial banks in Kenya as revealed by inferential statistics multiple regression where the predictors of electronic banking contribute to financial performance. The study further concludes that mobile banking, internet banking, banking cards and Automated Teller Machine contribute to the net income of commercial banks. The financial performance of the commercial banks were in a upward trend but were affected in 2020 by the emergence of Covid-19 pandemic. Additionally, mobile banking, use of debit cards and ATM continue to increase in usage more than other forms of electronic banking elements. The study study therefore concludes that mobile banking, internet banking, banking cards and ATM predict financial performance of commercial banks.

## **5.3. Recommendations**

The study recommends the empirical findings obtained from the study for theory, managerial and practice. The study recommends to the banking industry managerial units to formulate policies that would enhance electronic banking usage in their respective institutions. The study recommends to managers and banking staff to develop programmes that would create awareness and build capacity to enhance use of out off counter services

offered by electronic banking for these contribute significantly to net income of the institutions.

The banking authorities should develop suitable security measures that would increase customer confidence in using electronic banking elements. The study recommends to the banking customers to embrace electronic banking for these is convenient, less costly and increasing accessibility. Customers should use ATM and debit cards to avoid congestions and long lines found in banking holes. The study recommended to future researchers, scholars or academicians to enrich their work from empirical findings of this study. Based on the gaps created by this study the researcher recommends that future research should seek to fulfil this gaps by conducting a similar study.

#### **5.4. Limitations of the Study**

There were conceptual, and methodological limitations that were observed in the study. But these limitations did not have any impact to the final outcome of the study. Some of the financial records for certain commercial institutions were not available this prompted the researcher to utilize the available records. There are certain aspects of research that can not be relied on secondary data only they required primary data to providing enriching empirical data. The period in which the study was conducted was too short compared to the volume of secondary data available for this study.

#### **5.5. Suggestion for further studies**

The researcher suggests the following based on the limitations pointed in the study. future studies need to collect primary data from the targetted population from these commercial banks. If secondary data is to be collected future studies need to be allocated sufficient time

to gather enough empirical data to answer the themes of the study. Future studies can conduct indepth studies on one of the variables of the study and financial performance.

## REFERENCES

- Afandi, H. (2017). Online banking applications and community bank performance. *International Journal of Bank Marketing*, 26(6), 418 – 439
- Anyasi, K., & Otubu, U. (2018). Provision of electronic banking in the UK and the Republic of Ireland. *International Journal of Bank Marketing*, 17(2), 72-82.
- CBK (2017). Bank supervision annual report for 2017. Retrieved on 7/11/2021. From: <https://www.centralbank.go.ke/2018/08/22/bank-supervision-annual-report-2017/>
- CBK (2018). Bank supervision annual report for 2018. Retrieved on 7/11/2021. From: <https://www.centralbank.go.ke/reports/bank-supervision-and-banking-sector-reports/>
- CBK (2019). Bank annual report 2020. Government Press. Retrieved on 9/11/2021 from; <https://www.centralbank.go.ke/reports/bank-supervision-and-banking-sector-reports/>
- CBK (2020). Bank annual report 2020. Government Press. Retrieved on 10/11/2021 from; <https://www.centralbank.go.ke/reports/cbk-reports-and-financial-statements/>
- CBK (2020). Bank supervision and banking sector reports for the year 2018-2020. Retrieved on 7/11/2020 from: <https://www.centralbank.go.ke/reports/bank-supervision-and-banking-sector-reports/>
- Diamond, L. & Khemani, I. (2016). The use of checks and other noncash payments, instruments in the United States. *Federal Reserve Bulletin*, 88(8), 360-74
- Gardeva, K., & Rhyne, U. (2011). Factors influencing the adoption behaviour of mobile banking: A South Korean perspective. *Journal of Internet Banking and Commerce*, 12(2), 1-9.
- Giordani, Y. (2018). Strategic value and electronic commerce adoption among small and medium-sized enterprises in a transitional economy. *Journal of Business & Industrial Marketing*, 23 (6), 396-404

- Gitau,H., Mukulu, Y., & Kihoro, U. (2016). The Impact of Electronic Banking on the Performance of Banks. *Journal of internet banking and commerce* 16(2): 101-120
- Hani, I. (2019). A Valid and Reliable Measurement Scale for the Perceived Service Quality of Banks", *International Journal of Bank Marketing*, Vol. 18 No.2, pp.84-91.
- Julia (2019). The impact of mobile technology adoption on financial performance of financial institutions in Kenya. Retrieved on 10/11/21 from: [https://seajbel.com/wp-content/uploads/2020/10/SEAJBEL22\\_221.pdf](https://seajbel.com/wp-content/uploads/2020/10/SEAJBEL22_221.pdf)
- Karani, J. (2015). Internet Banking: E-Banking Expansion and Regulatory Issues. Society of Government economists. Washington D.C,
- Kenya Association of Bankers (2020). Annual report and financial statements 2018-2020. Retrieved on 6/11/2021 from: <https://www.kba.co.ke/downloads.php>
- Keremet, T. (2016). Self-service Technologies: Understanding Consumer Contentment with Technology-Based Service Experiences", *Journal of Marketing*, Vol. October pp.48- 52.
- Langat, G. (2016). The performance of Internet-based business models: Evidence from the banking industry. *Journal of Business* 78 (3), 893–947.
- Mabwai, F. (2016). Adoption of Internet banking by Australian consumers: an empirical investigation. *International Journal of Bank Marketing*, 17(7), 324-334
- Mateka, F., Gogo, S., & Omagwa , K. (2015). First County Integrated Development Planning: Experiences and Lessons from Laikipia, Nandi, UasinGishu, and Meru Counties", *The Futures Bulletin*, Issue No 18, June 2014
- Mulwa, T. (2017). Challenges of e-Government Service Adaptation in Saudi Arabia from an e-Ready Citizen. *Perspective World Academy of Science, Engineering and Technology*, 43
- Mulyungi, S. (2016). , Integrated Financial Management Information system: Guidelines for effective implementation by Public Sector of South Africa

- Mutinda, Y. (2014). User Acceptance of Computer Technology: A comparison of Two Theoretical models. *Management Science* 35(8), 982-1003.
- Mutua, G. (2017). Introducing Financial Management Information Systems in Developing Countries“*OECD Journal on Budgeting*5 (3), 97-132
- Sing, A., & Komal, U. (2016). Factors Affecting the Successful Implementation of ICT Projects in Government. *The Electronic Journal of E-Government* Volume 3 Issue
- Statistica (2020). The statistics portal for market data and trend of commercial banks. Retrieved on 9/11/2021 from: <https://www.statista.com/>
- Wambua, K. (2015). Role of Integrated Financial Management Information System On Organizational Performance, A Case Study Of West Pokot County. *International Journal of Management and Commerce Innovations*. Vol. 4, Issue 2, pp: (84-92),
- World Bank (2018). Factors Influencing The Use of IFMIS in Public Sector, Research study, Nairobi, Kenya. [32] IMF. World bank Economic Outlook, Washington D.C.
- Yousif (2017). Effect of e-banking orientation on customer service quality, Saudi Arabia. *International Journal of Civil Engineering and Technology (IJCIET)*, Volume 8, Issue 9, pp. 546 – 563.



## APPENDICES

### APPENDIX I: DATA CAPTURE CHECKLIST

I presenting this data collection checklist as part of my studies at University of Nairobi, it part of the course requirement for a Master's in Business Administration (Finance option) degree. Your assistance in filling the questionnaire titled "ELECTRONIC BANKING ON FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA."

#### SECTION A: GENERAL INFORMATION.

1. Number of the years the bank has been in business?
2. Number of branches country wide?
3. Priority areas utilizing electronic banking technology?

#### SECTION B: MOBILE BANKING

4. Availability of mobile banking's.....
5. Products or services offered through mobile banking.....
6. Mobile banking performance during the specified period .....

#### SECTION C: INTERNET BANKING

7. Availability of internet banking.....
8. Services offered via internet banking.....
9. Internet banking performance during the specified periods.....

#### SECTION D: AUTOMATED TELLER MACHINE BANKING

10. Number of ATM per geographical region.....
11. Services offered via ATM technology.....
12. Performance accruing on use of ATMs on specified period.....

#### **PART E: DEBIT CARDS BANKING**

13. Availability and use of debit cards.....
14. Uses of the debit cards.....
15. Performance brought by the use of credit/debit cards on specified period?

**SECTION E: Financial Performance.**

<b>Year</b>	<b>Net incomes/revenues</b>	<b>Return on Assets</b>	<b>Return on Equity</b>	<b>Cost-income ratio</b>
2017				
2018				
2019				
2020				

## APPENDIX II: RESEARCH PLAN

<b>ACTIVITY</b>	<b>June 2021</b>	<b>July 2021</b>	<b>August 2021</b>	<b>Sept 2021</b>	<b>Oct 2021</b>
Chapter One					
Literature Review					
Research Methodology					
Data Collection Tool					
Proposal Defense					

### APPENDIX III: RESEARCH BUDGET

<b>DELIVERABLE/ITEM</b>	<b>UNIT /UNIT COSTS</b>	<b>TOTAL COSTS</b>
<b>Service/facilitation related costs</b>		
Internet/airtime charges	-	8400.00
SPSS & Data analysis	-	10300.00
Transport	-	4500.00
Lunch	-	4000.00
Editorials	-	8000.00
<b>Documentation and other costs</b>		
Printing services	-	6500.00
Bindings	-	2400.00
Flash disks purchase	2PCS @1500	3000.00
Contingencies	10% of other costs	4710.00
<b>GRAND TOTALS</b>		<b>51,810.00</b>