EFFECTS OF INTERNET BANKING ON FINANCIAL PERFORMANCE OF COMMERCIAL BANKS: CASE STUDY OF EQUITY BANK

BY

GITAU MAUREEN WAMUHU

UNITED STATES INTERNATIONAL UNIVERSITY AFRICA

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A Research Project Report Submitted to the Chandaria School of Business in Partial Fulfilment of the Requirements for the Masters of Business Administration (MBA)

UNITED STATES INTERNATIONAL UNIVERSITY AFRICA

SUMMER 2020
STUDENT’S DECLARATION

I, the undersigned, declare that this is my original work and has not been submitted to any other college, institution or university other than United States International University.

Signed: ___________________________  Date: ________________

Gitau Maureen Wamuhu (653921)

This research report has been presented for examination with our approval as the appointed supervisors.

Signed: ___________________________  Date: ________________

Mr. Kepha Oyaro

Signed: ___________________________  Date: ________________

Dean Chandaria School of Business
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ACKNOWLEDGEMENT

I would like to thank God for his blessings.

I would also like to acknowledge Professor Kepha Oyaro for his support and assistance in guiding me throughout this project.
DEDICATION

I dedicate this project to my mother Rhoda Gitau and sister Nadia Nguru for their immense support and encouragement.
ABSTRACT

The general objective of this study was to determine the effects of internet banking on the financial performance of commercial banks with a case of Equity Bank Limited. The specific objectives that guided the study were to: examine the effect of mobile banking on performance, analyze the effect of online banking on performance; and assess the effect of online security on financial performance of commercial banks.

This study was based on primary data due to the nature of the variable to be generated and the type of population characteristics. The target population comprised of 126 managers working at Equity Bank Limited. Questionnaire was used to aid the collection of primary data. Stratified sampling technique was deployed. Data was collected, edited, coded, classified and analyzed using Statistics Package for Social Sciences (SPSS) software version 24 and later presented in frequency tables and figures.

The first objective of the study aimed to determine the effect of mobile banking and performance of the organization. The findings revealed a positive and significant relationship between mobile banking and performance, $r (0.859); p$-value $< 0.01$.

The second objective of the study aimed to determine the effect of internet banking on performance of the organization. The findings revealed a positive and significant relationship between internet banking and performance, $r (0.547); p$-value $< 0.01$.

The third objective sought to determine the effect of online security system on performance of the organization. Correlational analysis was carried out to establish the relationship between online security system (independent variable) and performance (dependent variable) in the study. The findings revealed a significant relationship between online security system and performance, $r (0.798); p$-value $< 0.01$.

This study concluded that there is statistically significant relationship between mobile banking and performance. Mobile banking enhances competitive advantage for commercial banks by building a strong relationship with clients by offering new services of good quality and high secured, banks have invested in information technology to present services in order to get confidence and satisfaction that their customers aspire through mobile banking services. This study concluded that mobile banking is essential for creating convenience in banking
operations in the organization. This study concluded that internet banking influences the performance of the organization. Internet banking is considered to be one of the most value addition that has been done in the banking industry since they enable commercial banks to provide facilities through mobile devices reducing face to face banking transactions through an automated mobile banking services where ever possible. This study concluded that online security system influence performance of commercial banks. Online security system is essential for customer satisfaction since consumers feel confident when commercial banks have reliable online security system that protects consumers from online fraud as well as risk.

This study recommends that Equity Bank Limited should create more awareness on its mobile banking platforms among its customers in order to create a sustainable adoption of the technology as well as the platform. Since this study established a significant relationship between internet banking and performance of commercial bank. This study recommends that Equity Bank Limited should provide more knowledge to the customers on how they can easily be enabled on internet banking platforms to allow them carry out financial transactions. This study recommends that Equity Bank Limited should educate its customers on how they can stay protected when accessing financial services through the internet. This will attract customers to adopt internet banking as well as mobile banking since their privacy as well as security is protected.
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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Study

The implementation of internet technologies to businesses for improvements in their performances is not something new. As stated by (Saffu & Hinson, 2008), there is an increase in the use of e-commerce in businesses in the past ten years. The advantages of e-commerce include reduction in cost, increasing business opportunities, reducing lead time and providing a more personalized service to the consumers (Amin, 2016). An e-commerce tool that is being adopted by the banking industry is online banking or electronic banking. Online banking is the performance of banking activities through the use of the Internet. Online banking is also referred to as "Internet banking". A good online bank will offer customers just about every service traditionally available through a local branch, including accepting deposits (which is done online or through the mail), paying interest on savings and providing an online bill payment system (Investopedia, 2012).

Internet banking and electronic banking are said to be different according to (Olivia, 2011), She argues that internet banking narrows to only use of internet while Electronic banking allows an individual to access the account using electronic teller machines. (Charles, 2017) notes that online banking is a new phase in retail banking services. With the help of online banking there several types of services through which customers can get information and conduct their banking transaction such as balance inquiry, inter account transfers, utility bills payment, request check book among others, via a telecommunication network or internet without physically visit the branches. An example would be paying of electricity bills and rent where one does not have to line up at the bank to pay, they can simply make the payment online.

Internet banking may also be defined as delivery of banking services to customers through the use of the internet (Gordon, 2010). In the recent years it has become a popular way for banks to provide banking services to customers. The spread of internet banking is likely due to some of its benefits. For example, internet banking provides convenient transactions and other
activities to be performed at the comfort of the customers’ home or office and also at their most convenient time.

Banking via the Internet has attracted increasing attention from banks and other financial services industry participants, the business press, regulators, and law makers. Among the reasons for Internet banking audience is the notion that electronic banking and payments may grow rapidly, more or less in tandem with proliferating internet commerce; industry projections that Internet banking will cut banks’ costs, increase banks’ revenue growth, and make banking more convenient for customers; and some vexing public policy issues. Despite this attention, there is a death of systematic information on the nature and scope of Internet banking. Bankers and public policymakers alike have to plan using largely anecdotal evidence and conjecture (Kenneth, 2010).

For customers, internet banking has brought a lot of convenience in their wake but for banks, they are much more than that. Banks that have switched to online banking have experienced reduction in operational costs. Earlier customers had to physically go to the bank even to know their account balances and certainly every time to withdraw money from their accounts. Even when they had to make payments to other accounts from their saving or current account, they had to come to the bank to deposit Cheques. All this was done by personnel at the bank which unnecessarily resulted in wastage of time and manpower. But the use of internet banking has obliterated the need of personally visiting the bank for such purposes (Olivia, 2011).

Although past literatures have studied on the adoption of internet banking, many of these studies have tended to focus on other countries such as Europe and United States. However, Kenya is different from these countries given that the economy is still expanding in recent years and its e-commerce infrastructure is still developing. Thus, the adoption of internet banking is still at its infancy when compared to other developed nations. Therefore, the primary objective of this research is to understand the effect of online banking in Kenya on banks financial performance.

The concept of online banking as it is known today dates back to the early 1980s, when it was first envisioned and experimented with. However, on October 6 1995 the Presidential Savings Bank became the first bank to offer customers access to online services. The idea was quickly snapped up by other banks like Wells Fargo, Chase Manhattan and Security First Network
Bank. Today, quite a few banks operate solely via the Internet and have no 'four-wall' entity at all (Bridges, 2012).

In 2001, the Bank of America was the first bank in the world to reach 3 million online banking customers. Over the recent years, online banking has grown exponentially, and some banks came into existence which only existed online! These banks were able to offer better interest rates, more features, and other services because they had the advantage of not having to maintain the expenses of brick and mortar bank buildings (Tech, 2012).

In developed countries the success of internet banking can be seen by identifying the number of current banking registered users and frequency with which they use the service. In the United States over 10 million customers used online banking and numbers were expected to grow to 35 million by end of 2003, seven percent of UK customers used internet banking and this was also expected to go up to twenty eight percent by end of 2004. This was also experienced in Germany and Norway (Gerrad, 2010)

Internet banking in Kenya is a relatively new innovation which can be traced back to 2008 (CBK, Banking in Kenya, 2009). The first bank in Kenya to offer internet banking was the I&M bank who were granted the chatter to offer E-Commerce Internet system banking in the East African region in the year 2008 (I&M, 2008). Since then several banks have adopted internet banking which is now targeting the people living in the Diaspora. Currently Kenya has over 30 banks offering internet banking all which are members of the Society of Interbank Financial Telecommunication (SWIFT) and Kenya Exchange Service Bureau (KENEX) (CBK, 2011).

Most bank customers in Kenya are not aware of internet banking and the benefits that come with it which may stand out as being the obstacles to using internet banking. Another concern that leads to not using internet banking is that of security. Many people are afraid to make transactions online for the fear of losing money. However, this may not be the case necessarily as seen by Managing Director, Commercial Bank of Africa Isaac Awuondo who stated the features and benefits of internet banking as: Transacting whenever and wherever, Access your account transactions and information, Make transfers, Check and print statements and transfer funds between your personal accounts (Awuondo, 2007)
Financial performance measures are meant to evaluate how well a firm can use its assets from its primary mode of business to generate revenue. It is a general measure of an organization's overall financial health over a given period of time. Many have recommended the balanced scorecard which provides a framework, which proposes the use of financial and non-financial measures of performance via balancing four perspectives - financial, customers, internal business processes, and learning and growth (Kaplan and Norton, 1992).

The proposed measures for financial analysis include: profitability, liquidity and solvency. Profitability analysis is a component of enterprise resource planning that allows investors to forecast the profitability of a proposal or optimize the profitability of an existing project. The known profitability ratios are the return on assets (ROA), return on equity (ROE), operating profit margin and net income. The ROA measures the net income produced by total assets during a period by comparing net income to the average total assets. This means that, the return on assets ratio measures how efficiently a company can manage its assets to produce profits during a period. The ROE measures how much profit each dollar of common stockholders’ equity generates. It is useful to consider the ROE in relation to ROA to determine if the firm is making a profitable return on their borrowed money. The operating profit margin measures what percentage of total revenues is made up by operating income. Net income comes directly off of the income statement and is calculated by subtracting taxes and other deductions from gross income, for a business it is the revenue left from subtracting all expenses, taxes and costs (Robinson & Pirie, 2015).

Liquidity measures the ability of the business to convert an asset or security into ready cash without affecting its market price. Liquidity can be interpreted both structurally and operationally. Structural liquidity refers to assets and liabilities while operational liquidity refers to cash flow measures. (Quach, 2005) indicated that solvency measures the amount of borrowed capital used by the business relative the amount of owner’s equity capital invested in the business. In other words, solvency is the ability of a company to meet its long term debt and financial obligations. Solvency measures also provide an indication of the business’ ability to withstand risks by providing information about the firm’s ability to continue operating after a major financial adversity.
Two recommended measures of liquidity are the current ratio and working capital. The current ratio measures the relationship between total current assets and total current liabilities. The higher the ratio, the more liquid the firm is said to be. Working capital is a measure of the amount of funds available to purchase inputs and inventory items after the sale of current assets and payment of all current liabilities (Robinson & Pirie, 2015).

Three widely used financial ratios to measure solvency are the debt-to-asset ratio, the equity to-asset ratio which is known as percent ownership and the debt-to-equity ratio also referred to as the leverage ratio (Quach, 2005). These three solvency ratios provide equivalent information, so the best choice is strictly a matter of personal preference. The debt-to-asset ratio expresses total firm liabilities as a proportion of total firm assets. The higher the ratio, the greater the risk exposure of the firm. The equity-to-asset ratio expresses the proportion of total assets financed by the owner’s equity. The debt-to-equity ratio reflects a company’s total debt to total equity.

Equity Bank Limited is a financial service provider that has its headquarters in Nairobi, Kenya. Equity bank is one of the innovative banks in the Kenyan economy since it has developed various banking products under its Fintech holdings to support its operations. Equity bank has adopted the basic innovations that is electronic, mobile and internet banking and it has taken extra mile to develop a sim card to enable banking of its customers most effective (Mwiti, 2018). The organization is licensed and authorized to perform financial transaction by the commercial bank, Central Bank of Kenya, and the national banking regulators (Okoth, 2018).

The bank has evolved to be an all-inclusive bank, with over 11 Million accounts which make over fifty percent of the banks in Kenya making it the largest customer base bank in the region. Equity Bank is a subsidiary of Equity Group Holdings which has subsidiaries in South Sudan, Uganda, Rwanda, Tanzania and DRC. It is also listed in the Nairobi Securities Exchange (NSE), Rwanda Stock Exchange (RSE) and Uganda Securities Exchange (USE). With their Eazzy Banking App and online platform EazzyBiz, customers are able to bank from anywhere at anytime and it allows customers to send money, pay for goods and services, pay bills and save for future goals (Equity Bank, 2014).

Profitability is the main focus of commercial banks this is the desire performance of commercial banks. All strategies including innovation are meant to realize the main objective
of attaining great performance which is measured by profitability and market share. (Dasgupta, 2011)

1.2 Statement of the problem
The quest for survival, global relevance, maintenance of existing market share and sustainable development makes exploitation of ICT imperative in the banking industry. Application of ICT concepts, techniques and the development of policies and strategies is a subject of fundamental importance and concern to all banks, and is a prerequisite for local and global competitiveness. ICT directly influences the strategies banks employ in offering various products and services in the industry.

According to the Global System for Mobile Communications Association (GSMA), about 40 per cent of Africa’s one billion population has mobile phones, but only 20 per cent have bank accounts (Anyanzwa, 2011). Citibank also points out that Kenya was one of the largest recipients of aid in Africa, with a total of $1.8 trillion (Sh165.6 trillion) worth of Official Development Assistance (ODA) received in 2009. But the bank raised concern that securely managing the receipt and distribution of donor aid flows within Kenya’s complex and often paper-based market creates many challenges.

Internet banking is used as a marketing tool to attract and retain customers, expand market reach, and improve service quality, the extent and the intensity of banking products and services offered online is likely to have a significant impact on the bank's overall performance. Some of the e-banking services introduced by financial institutions include the electronic funds transfer between accounts, payments of utility bills, airtime top ups, balance enquiries, loan applications, and cheque book requests.

A study by Kiragu (2017) reveals that, although the introduction of e-banking services has improved firms’ efficiency and effectiveness, it has taken up most of their resources and this has led to a negative impact on their financial performance. The emphasis of this impact has been placed majorly on the initial stage, that is, it has a higher negative impact on its time of adoption and declines gradually over the next financial periods. Pooja & Sing (2009) in their study on the effect of internet banking on financial performance of commercial banks concluded that internet banking had the least impact on financial performance of banks.
Ngungi (2013) carried out a research on the effect of online banking on financial performance of commercial banks in Kenya. A cross-sectional multiple regression on selected variables was employed to analyze the annual reports produced by CBK and NSE. Results of the study indicated a positive effect of online banking on financial performance of commercial banks in Kenya.

A similar study was conducted by Mulwa (2017) on the impact of internet banking on financial performance of commercial banks in Kenya. The aim of the study was addressing the topic at hand which had been done internationally by using the case of local banks. From the problem statement of the research, its main aim was simulating the existing international studies on similar topic by using Kenyan commercial banks (Mulwa, 2017). Findings of the study revealed a positive impact of internet banking on financial performance of commercial banks in Kenya. The results were inconsistent with those determined by Kiragu (2017) which established no significant relationship between the two variables.

Internet banking still remains a fictitious idea to most people, as not many embrace it due to lack of trust. With frequent cases of frauds seen within our country where cases of fraud have been reported in the basic electronic banking system like ATM cards most people would prefer taking money in cash than adopt technology. The emergence of mobile banking has made an assumption to many minds that they have adopted internet banking not understanding the differences. The researcher therefore intends to determine the impact of internet banking on financial performance and come up with relevant recommendations that may be used to create a better platform towards marketing internet banking not only to the people in other countries but as well as the locals towards achieving the vision 2030 target.

1.3 General Objective
The general objective of this study was to determine the effects of technological innovations on performance of commercial banks in Equity Bank Limited.

1.4 Specific Objectives
The following objectives guided this study.

1.4.1 To determine the effect of mobile banking on performance in Equity Bank Limited.

1.4.2 To determine the effect of internet banking on performance in Equity Bank Limited.
1.4.3 To determine the effect of online security banking on performance in Equity Bank Limited.

1.5 Significance of the Study

1.5.1 Equity Bank Limited

Equity Bank Limited benefited from the findings of this study by knowing the effects of internet banking on performance of commercial banks, hence, enabling the bank in creating strategies that are appropriate and in line with the dynamic technological inventions to support their business operations.

1.5.2 Banking Industry

This study was significant to various banking institutions and the industry as a whole in assessing the role of internet banking on banking performance and help the institutions to adopt the right technology that is essential to their banking performance. The findings also informed strategic planning of the financial institutions since technology is considered as one of the biggest disruptions in the banking industry.

1.5.3 Policy Makers

The regulatory framework and the governing body of financial institutions also benefited from the findings of this study on the effects of internet banking on commercial banks, based on the findings the policy makers can then formulate the right policies and laws that take into consideration the welfare of the banking industry in terms of technology inventions taking place in the business environment.

1.5.4 Scholars and Researchers

The study was also significant to the researchers and academicians that seek additional knowledge in the field of internet banking taking place in the banking industry. Scholars and researchers can also use the findings of the study in their literature review as far as their study touches the effects of technological inventions on performance of the banking industry.

1.6 Scope of the Study

The study focuses on determining the effects of internet banking on performance of commercial banks with a specific case of Equity Bank Limited. The duty stations surveyed for
this study were limited to Nairobi, targeting the top level managers and the middle level managers. The study covers three essential areas determining the effect of mobile banking on performance, determining the effect of online banking on performance and determining the effect of automated banking on performance in Equity Bank Limited.

1.7 Definition of Terms

1.7.1 Mobile Banking

Mobile banking refers to the act of making financial transactions on a mobile device (smartphone, tablet). This activity can be as simple as a bank sending fraud or usage activity to a client’s mobile phone or as complex as a client paying bills or sending money abroad (Chen, 2010)

1.7.3 Internet Banking

Internet banking is the process in which the core banking services can be accessed directly from the internet (Mwangi, 2010)

1.8 Chapter Summary

The chapter presented the background information in respect to problem being investigated, statement of the problem has also been highlighted in this chapter, the general objective of the study has been indicated with a focus to establish the effect of internet banking on performance, and the research objectives that guided the study have were introduce in this chapter. The significance of the study highlighting key stakeholders who are likely to benefit from the study has also been presented, followed by the scope of the study and definitions of terms used in the study. The next chapter will present the literature review of the study followed by chapter four that will present the results and findings obtained from the target respondents and the last chapter will present the discussion, conclusions and recommendations of the study
CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter will present the literature review on the effects of internet banking on performance of commercial banks by reviewing publication of various authors on the subject matter. The first section of the chapter presents the effect of mobile banking on performance of commercial bank, followed by the effect of online banking on performance of commercial banks and the last section will present the literature on the effect of online security on performance of commercial banks. The chapter also presents a chapter summary at the end highlighting all the major elements covered in the chapter.

2.2 The Effect of Mobile Banking on Performance of Commercial Banks

Mobile banking is said to be the service provided by financial institution in cooperation with mobile phone operators, that allows its customer with busy lives to conveniently do their banking remotely using their mobile devices like a smart phone or tablet anytime (Tinashe & Kelvin, 2016). It is about getting banking services to those who may not have bank access or bank accounts and those who are at the lower level of the economic pyramid. This is different from the related internet banking which uses a software called known as an app that is offered by the financial institution for transactional purpose despite other financial institutions having restrictions on which accounts can be accessed through mobile banking (Riquelme & Rios, 2010).

In the recent years, technology has advanced and has changed the way businesses operate. It has brought about the evolution of mobile banking transforming how the banking sector carries out business. Singh and Srivastava (2018), suggest that mobile banking requires the provision and the assistance of banking and financial service with the help of mobile telecommunication device. The services cut across the carrying out of balance checks, account transactions, payments, credit applications and other banking transactions through a mobile device like a smartphone which is the most used device in developed nations or the personal digital assistant (Mbama & Ezepue, 2018).

This innovations are stemming from the telecommunication revolution in the late twentieth century, mobile banking simplifies the transfer of monetary transaction from a bank account
to other bank accounts to even presentation and printing of bank statements by a client point of convenience (Mullan, Bradley, & Loane, 2017). It is whereby the banking service provider put up a platform in which their customers easily transact from remote locations of their convenience such as their homes or workplaces. Customers no longer need to visit a banking hall to do their transactions as the core banking services such as payment of bills, production of statements, transfer of cash from one account to another account and payment of goods and services at a shopping store. The banking institution usually provide any form of support to a client on a twenty four hours basis through a hotline number provided or on an instant chat service (Mbama & Ezepue, 2018).

Payment system providers and mobile operators have begun using branchless banking models which reduce cost through taking small value transactions out of the banking hall into local retail shops like, airtime vendors, gas stations and shopkeepers, register new accounts accept client deposits, process transfer fees and issue withdrawal using the clients mobile phone then communicating information back to the telecommunication provider or bank. This enables clients to send and receive electronic money wherever and whenever there is cell coverage (Gowanit & Chaiyawat, 2016). To ensure the security for transactions, mobile banking on the smartphone application has put more than one layer of authentication. Case in point is the banking application fusing with artificial intelligence, whereby mobile banking requires to use finger print detection aside from the traditional username and password to grant access to the mobile banking platform (Adewoye, 2013). These features of authentication are almost common to all banking application as security is of more importance when transacting on a mobile device.

The speedy implementation of the mobile banking application among the population with statistics indicating that two out of five customers in the developed world prefer to use mobile banking when conducting transactions for the obvious reasons as the ease of convenience in the banking process (Curwen & Whalley, 2011). Mobile banking has had various effects on the performance of commercial banks in Kenya with an outward interest for every commercial bank to adopt the technology. It is a technology that is an essential and a top priority for every player in the Kenyan financial sector. Each year it is observed that the commercial banks set out huge expenditure budgets for the expansion, adoption and maintenance of their mobile
banking platforms and system. For the banking institution to survive competition in the market, there is need to put in place an innovation that guarantees convenience to the customers. The convenience to link to a bank account through a mobile gadget is seen as power and empowerment to the customer owing to the fact that they have total financial control over their funds at any time of day or night (Riquelme & Rios, 2010).

Anderson (2010) suggests that technological developments have not only influenced lifestyle but has had an impact on the way customers conduct their banking activities. In the ancient days, commercial banks used mobile vehicles to transfer their services to clients particularly the ones in rural areas. This was followed by a move of using email and internet services in offering services to clients. Tobbin (2012) in the last decade, has seen an unbelievable expansion in the mobile growth in developing nations. Nonetheless, of great importance is that while the mobile phones offer a number of features like that of mobile banking, approximately half of the global populations have not accepted mobile banking and monetary services. (Priya, Gandhi, & Shaikh, 2018).

According to Priya, Gandhi and Shaikh (2018) over the years, commercial banks have expanded the innovative products and services and offered a wide range of them in the effort to increase efficiency which is the most critical goal of any commercial bank. In search of competitive advantage in the technological financial industry banks have acknowledged value and differentiated themselves from the others through new service distribution. Banks administrative process of account opening left out many rural dwellers as they did not qualify to own accounts. With competition, banks had to simplify the process quite a number of banks have various M-banking products for example Equity bank M-Kesho, KCB bank Mobibank and Mshwari of Commercial Bank of Africa. Chiu and Bool (2017) argues that although various and at times the competing labels and definitions have been used while discussing the provision of financial services through mobile phone networks mobile money focuses on the convergence of mobile telephone and financial services.

2.2.1 Financial Inclusion

Mobile banking, which is a vital merger of the banking system and has a firm standing in the banking industry has allowed for customers to transact with convenience thereby not needing to visit any banking hall (Ayachit, 2015). Banks depend on customer deposits in order to make
available funds to conduct the business of lending and financing. For this to happen, banks need adequate levels of liquidity, the more cash at their disposal the many projects they are able to undertake and finance. Financial inclusion of all category of earners is important in boosting the liquidity level of the bank. It is highly important to note the category of earners that are considered as low-income earners in the financial sector (Cruz & Laukkanen, 2010).

Aside from banks taking deposits from customers, commercial banks provide for the much-needed credit to the economy of the country (Ghosh, 2016). Under regulation from the central banks, financial institutions make accessible credit to business enterprises and individuals seeking extra funding for projects they want to develop (Riquelme & Rios, 2010). Commercial banks also offer credit to government institutions which they do fund some of the various project developments for the government.

Mobile banking has reformed this phenomenon as most platforms allow deposits to be made directly into the banks. For this to take place, commercial banks have merged their mobile banking system with the mobile money systems offered by telecommunication providers in all the countries that have licensed mobile telecoms (Singh & Srivastava, 2018). Customers can send money at any time of their convenience and the overall outcome is the increase of liquidity of the commercial banks. This has resulted to commercial banks having a competitive advantage over their competitors in the highly competitive market (Tran & Corner, 2016).

2.2.2 Customer Attraction

The banking sector experiences competition in these modern days, being that expanding the market is the quest for commercial banks to increase their presence (Asfour & Haddad, 2014). It is a jungle where the small players in the banking sector are easily being overrun by the big players in the financial sector. There is a hunt for new market opportunities at every wake and turn of day. It is important to note that it is not only adopting the new forms of technology that will guarantee staying at the top but also the ability to adopt the technology at a rate that is faster than the competitor (Singh & Srivastava, 2018). A measure of market performance is based on how the organization is expanding not only in the physical space but the virtual space. Virtual spaces enable any organization to spread its wings to newer markets and territories thus expanding and maximizing on its potential. Expanding in the virtual space means that the financial institution expand in terms of embracing new technologies as the most significant
way in the institutions ability to undertake its operation in a rather seamless and convenient manner (Singh & Srivastava, 2018).

2.3 The Effect of Internet Banking on Performance of Commercial Banks

Internet Banking are the systems that enable bank customers to get access to their accounts and general information on bank products and services through the use of bank’s website, without the intervention or inconvenience of sending letters, faxes, original signatures and telephone confirmations (Singh & Srivastava, 2018). Internet banking gained awareness towards the end of the 20th century when the internet started becoming available to the general public. The internet was mostly a preserve for large organization and military organization. The internet was an expensive form of communication thereby not making it feasible to connect to the general public in that the return on investment was mostly marginal and took really a long time for organizations that wanted to venture commercially and sell the internet connection for a lengthy period to recoup their investments (Curwen & Whalley, 2011). There is a substantial effort towards creating “virtual banking halls” where the banking customers can manage their transaction without necessarily having the inconvenience of visiting the real banking hall (Adewoye, 2013).

Frempong (2014) states that internet banking is the use of electronic and telecommunication networks in implementing a wide range of value-added products and services to the bank customers. Internet banking is the product of e-commerce in the area of banking and financial services. Commercial banks provide payment services for their consumers making a shelter term for the process by which individuals may carry out banking transactions electronically without the use of a brick and mortar institution (Singh & Srivastava, 2018).

Internet banking services are normally free (or at a nominal charge) to use and enable customers to do their banking at a time that is convenient to them. It relieves the load on the bank’s call centers and the branch network (Kihara, 2015). Some internet banks do not have any ‘real’ branches at all, but exist purely as internet accessed banks. Depending on the bank, services available to internet users include transfer of funds between accounts, payment of bills, request for statements or viewing statements on-line, view their investment portfolios and even buy/sell securities. The provision of internet banking services is done either by the bank’s core banking system or, more usually, through specialist application packages that
control all of the bank’s ‘multi-channel delivery’ (e.g. telephone banking, call-centre banking, internet banking, mobile telephone banking, etc.) which then connect to the relevant core banking system depending on the specific service the customer wishes to use (Curwen & Whalley, 2011). A bank’s information security department may prefer that the bank uses a separate application to act as an interface between its internal systems and the internet. This will provide an element of separation between external and internal systems and restrict internet users to the internet interface layer only and not allow direct entry into the bank’s internal processing systems (Muisyo & Alala, 2014).

Internet has become the prop of business in the world. It is virtually impossible to conduct business without directly engaging the internet as it is a means in which data and information is exchanged (Jenusha & Karthiyayini, 2016). Information systems are linked via the internet and the banking industry has stood to benefit immensely in that their information systems can be interlinked forming a web. It has contributed to the ease of doing business in the world, as it only requires an internet connection to get everything going (Kangethe, 2013).

In the past few years internet banking has been accepted and rapidly growing, about 55 percent of private banking customers in Finland have online banking contracts with their banks (Anderson, 2010). According to Hojjati and Rabi (2013), the first world countries mostly the United States of America and the European Union in general are seen as the leaders in internet banking. They are the markets with the highest adoption rates in internet banking in the world. This is attributable to the fact that internet infrastructure is readily available and well developed. The fact of the two economic regions of the world having a well-established banking system and being the primary test markets for this revolutionary technology in the 1980s also makes them the leaders in internet banking. The rest of the world is quickly following suit in the adoption of this technology as it is the frontier into the future of the banking business (Chiu & Bool, 2017).

There is a commendable effort by commercial institutions especially in Kenya to push for adoption of the internet banking as a primary way of replacing the traditional banking system with the results showing that there is a reward in the efforts that are being employed (Demoulin & Djelassi, 2013). The rush to adoption of the internet banking option and platforms has brought about a shakeup in the banking industry, as the technology is revolution in that it
changes the way banking traditionally used to be conducted. The easy to use mobile platforms require that customers of the bank conduct the activities that were once being done by the employer of the bank. To allow for effective transactions in the online platforms is the adoption of a raft of security measures that ensure security protocols are not breached and thereby making the whole process convenient and free from fraud. Multi-level security protocols are employed and the users are encouraged to log into the internet banking platforms from secure connections and always keep the banking details to themselves (Demoulin & Djelassi, 2013).

Internet banking platforms provide customer care service at an instance through the various online portal and users can conveniently get helps on any queries they may have (Nejad, 2016). Businesses are going global and in line with the banks attempt to retain customers and attract newer customers is the massive step to largely invest in the internet banking sector. Internet banking is the most appropriate tool of transaction for businesses in that it provides for access of bank accounts from a far or from a foreign area provided that they have internet connection. The benefits of internet banking are varied. To the customer, it means 24/7 access to banking services; greater convenience and speed of executing transactions; no queues or waiting on hold; checking of account balances, transfer of funds to other accounts, ease of account monitoring and so on. To the bank, internet banking is an effective strategy of providing banking services to its customers that enables it to reduce its operating overheads and gain customer loyalty in the increasingly competitive environment (Jenusha & Karthiyayini, 2016)

2.3.1 Efficiency

Efficiency is essential for any company transacting business. The organization, in this aspect are the commercial banks they rely on efficiency to attract more customers and seek a better market position. Customer retention and growth is a direct indication of good and efficient performance by any organization and it depends steadily on good management of the organization (Gowanit & Chaiyawat, 2016). In the case of commercial banks, faster growth is a guarantee that the investment is finally paying off and that the financial institutions are gaining a firm stand in the location markets. With the internet banking platforms, banking industries have seen an tremendous rate of efficiency, an obvious sign of the return on their investments as a whole. New customers have been drawn into the wave of internet banking adding up the number of those already on the online banking platforms. Internet banking
platforms has made it easy for customers to open up bank accounts with just a few clicks they are able to open an account after providing the necessary credentials. This has increased the number of customers in the category of internet banking and greatly increased the population of banked individuals (Mutua, 2010).

The initial challenges such as a bounced cheque are now a thing of the past for internet banking customers as they can monitor their accounts and track deposited cheques to know if it has cleared and which payments have and have not been done (Curwen & Whalley, 2011). The availability of data captured online makes it much easier in budgeting and tracking where the customers’ money goes because online banking enables customers to view what they are doing without having to step into bank, hence, bringing a desirable efficiency in the banking operations as well as cutting down on costs they would incur in offering service to the clients manually (Farah, Hasni, & Abbas, 2018).

2.4 The Effect of Online security on Performance of Commercial Banks

2.4.1 Attacks on Online Systems

According to Kant and Jaiswal (2017), there are three types of Internet banking that are being employed in the market place: information, communication and transaction. Information is the most basic level of internet banking. The bank has marketing information about its products and services on a stand-alone server. This level of internet banking service can be provided by the bank itself or by sourcing it out. Communication is the type of internet banking which allows interaction between the banks’ system and the customer. It may be limited to electronic mail, account inquiry, loan applications, or static file updates but the risk is higher with this configuration as compared to the earlier systems. Transaction is a system of internet banking where customers are allowed to execute financial operations.

One example of hacking was when, the Kenyan Prime Bank, Development bank, and CFC Stanbic Bank websites which were hacked by Rwandan hackers, this shows how vulnerable the system can be. Hackers have various ways that they can try to access into a system. The problems of the systems today are inherent within the setup of the communications and also within the computers itself (Mutua, 2010). The current focus of security is on session-layer protocols and the flaws in end-to-end computing. A secure end-to-end transaction requires a secure protocol to communicate over untrusted channels, and a trustee code at both endpoints.
It is really important to have a secure protocol because the trusted channels really don’t exist in most of the environment (Chirchir & Juma, 2016).

A common attack is social engineering which does not involve knowledge of any type of computer system. Social engineering can be defined as manipulating consumers into disclosing personal information by posing as a system administrator or customer service representative (Curwen & Whalley , 2011). Social engineers use surveillance and a consumer’s limited knowledge of computer systems to their advantage by collecting information that would allow them to access private accounts. Attackers can use port scanners to ascertain entry points into a system and use various techniques to steal information. This type of software sends signals to a machine or router and records the message the machine then responds with to ascertain information and entry points (Ayachit, 2015). The main purpose of a port scanner is to gather information related to the hardware and software that a system is running so that a plan of attack can be developed.

Password cracking can involve different types of vulnerabilities and decrypting techniques; however, the most popular form of password cracking is a brute force attack (Anderson, 2010). Brute force password attacks involve guessing usernames and passwords for a specific website in order to gain access to a server. Brute force cracking takes advantage of systems that do not require strong passwords, thus users will often use common names and activities making it simple for a password cracker to gain access to a system. Other password cracking methods include using hash tables to decrypt password files that may divulge an entire systems user name and password list (Nejad, 2016).

Denial of service attacks are used to overwhelm a server so that it does not respond service requests. It is an attack on the systems resources that is launched from a large number of other host machines that are infected with malicious software controlled by the attacker. The attacker will install virus or Trojan software onto an abundance of user PC’s and instruct them to perform the attack on a specific server (Koriyow & Karugu , 2018). Denial of service attacks can be used by competitors to interrupt the service of another E-commerce retailer or by attackers who may want to bring down a web server for the purpose of disabling some type of security feature (Gulati, 2015).
2.4.2 Modes of Online System Security

Cyber security in Kenya is the single biggest threat to business in terms of the consumption and use of Information Communication Technologies (ICT). Actually, over the recent months we have seen a rise in cases of cyber-attacks such as ransom ware and data leakage, some of which have even gone undetected. One such incident that went viral on regional social media circles involved a leading Kenyan bank. A hacker was supposedly able to access through a data systems breach, more than 500,000 customers’ details, including names and phone numbers and which were then plastered on various online platforms (Coderias, 2017).

Serianu Limited, the publishers of the Kenya Cyber security report, notes that Kenyan companies lost over Sh15 billion in 2015 through Cybercrime. On top of this pile of victim losses sits the public sector at Sh5 billion followed by the financial services sector at Sh4 billion. As of 2018, malware attacks are worsening, criminals are tweaking malwares and banking trojans to better target organizations. Another study by consulting house PwC, notes that the number of cyber security incidents across industries increased by 38% in 2015, which is the biggest increase in the 12 years since the first global study. The mobile phone is undoubtably the universal communication device of choice for many. The Communications Authority of Kenya states that we have 49.5 million mobile phone subscribers in Kenya, 46 million who access and are constantly on the Internet. A huge proportion of this fraction estimated at about 95% does not have mobile security in place (Kihara, 2015).

Having a strong password should perhaps be the first step in proactively securing your device and online banking access. An easy technique is developing a strong but simple password regime this is called ‘pass phrasing’ which simply means using a sequence of words or numbers to control access to a computer system. It is also important to never reuse your password for any accounts whether it is a social media account or your bank account, this can lead to a total hack into the accounts in case it leaks from any of them. To prevent this, one can choose to use a password manager that will store all of them and allow you to remember just one master password (Kahandawa & Wijayanayake, 2014).

Similarly, to enjoy the Internet and maximize protection while connecting to an online banking account, one should install a trusted security solution on their devices. This will preferably be a reliable, multilayered and updated security solution. For example, ESET Smart Security
offers protection from multiple types of malware as well as malicious tricks that might be disguised as harmless emails or websites. Cybercriminals always come up with new ways to access your sensitive data. They may pretend to be your banker or pose as an innocuous notification in your email asking you to change your password (Mullan, Bradley, & Loane, 2017).

2.4.3 Effects of Online Systems Security on the Financial Performance

Internet banking is a new concept in many countries (Mbama & Ezepue, 2018). Trust comes from factors such as perceived privacy and security. One major factor in electronic channels that may influence consumers perceptions and intentions to adopt and use internet banking services. Absence of trust is noted to be one of the hindrances to the adoption of internet banking (Tobbin, 2012). Trust is required more when customers process more sensitive personal information especially financial information.

The online environment has its own myriad of challenges as it does not lend itself to traditional ways of establishing trust between exchange participants, (Kenneth, 2010). A customer wishing to engage in online transaction is faced with a nagging reminder that there is a chance that the system might not be that safe. It all comes to the level of risk associated with the intended transaction and the acceptable risk going with it. (Tao & Chang, 2014) suggest that trust privacy and security issues are interrelated in the online environment. Every risk averse individual customer will be concerned whether their online transactions are safe from numerous risks associated with it or not. Research has shown that “risk and trust are inseparable components indecision-making” (Morrison & Firmstone, 2013). Researchers further allude that to place trust on a party involves risk-taking in decision making. (Coderias, 2017) found that security and privacy concerns are identified as the “biggest obstacles” to the acceptance of Internet banking in Australia. Trust is very crucial and complex in internet banking than traditional banking due to its virtual environment. Thus, to complete the purchase transaction, customers have to trust the online business and online transaction of the bank. Without trust the consumer will avoid making any transaction online.

Privacy and security of information is an asset to an individual (Lassa & Manolis, 2015), most applications require individuals to give personal information such as social security numbers, bank account numbers, account information, and identifying transactions and thus people
everywhere tend to be concerned for their privacy and security (Mbama & Ezepue, 2018). With respect to the perception towards internet banking many experts has acknowledged consumers’ concerns for security, privacy, and trust. Changchit (2008) observed that in this era of a digital age, internet users are concerned with many privacy issues as this continue to affect the daily personal financial information. Saeednia and Abdollahi (2012) studied privacy and found that privacy directly and significantly influences trust as a mediator variable to promote affective commitment of the clients of online banking.

Nasri (2011) argued that perceived risk arises from the uncertainty that customers face when they cannot foresee the consequences of their purchase decisions. Consumers associate security risk with the loss of bank account or credit account numbers, passwords, etc., which can result in the loss of money. Customers tend to increase purchases only if they perceive that credit card and other sensitive information is safe. Previous research has shown that perceived security risk is an important predictor of internet banking adoption Further research by Safeena et al., (2011) on internet banking adoption in India revealed that perceived usefulness, perceived ease of use and perceived risk were the most important factors that influence the adoption of online banking and also help to make strategy formulation process. Findings from the research study suggested longitudinal study in the future which will help to identify the research model in different time periods and make comparisons and thus provide more views into the phenomenon of the adoption of online banking.

Malhotra and Singh (2010) have shown that trust works as a mechanism for reducing consumers’ perceived risk in Internet shopping. Recent research on internet banking has shown that trust reduces perceived risk and invigorates the usage of online banking services (Mbama & Ezepue, 2018). Kant and Jaiswal (2017) concluded that trust in online banking and its infrastructure reduces customers’ transaction uncertainty and related risks associated with the possibility that a bank might behave opportunistically. When we trust people, we automatically assume that those trusted will behave as they are expected to, reducing the complexity of the interaction.

2.5 Chapter Summary
This chapter reviewed literature on the effects of internet banking on performance of commercial banks. The chapter reviewed literature on the effect of mobile banking on
performance of commercial banks followed by the literature on the effect of internet banking on the performance of commercial banks and lastly the literature on the effect of online security banking on performance of commercial bank. Chapter three presents the research methodology that the study adopted in addressing the research problem.
CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction

This chapter presented the research methodology used in the study with the aim of addressing the research problem. The research methodology of this study included, the research design of the study highlighting the approach that the study will take, study population, the sample size, followed by sampling technique, data analysis methods and the procedures that will be used to analyse the data collected. The chapter provided a chapter summary at the end with an attempt of highlighting all the components covered in the chapter.

3.2 Research Design

Research design according to Andrew B Kirumbi (2018) is a set of methods and procedures used in collecting and analyzing measures of the variables specified in research problem. The research design surrounds the blueprint used for data collection, measurements and data analysis. This study embraced descriptive survey research design. Descriptive survey refers to the attempt of seeking to get information which best describes the existing phenomena through need for responses from the target respondents their attitudes, behaviours, views and values towards the existing phenomena (Barnes & Holland, 2015). This method was selected since it is regarded as the most appropriate method for obtaining factual and attitudinal information that can effectively address the research problem, since it enabled the researcher to obtain opinions, characteristics, and beliefs of the respondent (Rozario, 2014).

3.3 Population and Sampling Design

3.3.1 Population

Population can be defined as a well-defined group of individuals or objects that are known to have similar attributes or characteristics (Seger, 2012). For this study, the target population was top level and middle level managers that work for Equity Bank Limited.

3.3.2 Sampling Design

3.3.2.1 Sampling Frame
According to Sapsford, 2011, sampling frame is defined as a list that represents the population of the study from which the researcher is able to draw a sample. Sampling frame being the source material or a device from which the sample of this study is drawn, the sampling frame was obtained from the Human Resource Office at Equity Bank Limited.

### 3.3.2.2 Sampling Technique

Sampling technique is said to be the method used by researchers to ensure that different groups that are either heterogeneous or homogeneous are well represented in the final selection of the sample to be studied (Cooper & Schindler, 2014). This study used the stratified sampling method in ensuring that all the levels of management are well represented in the selection of the respondents for the study. Stratified sampling is the ideal method in ensuring that there is no bias in selection of the respondents (Lewis & Liao, 2009), therefore, it was used in picking managers to take part in the study.

### 3.3.2.3 Sample Size

Sample size refers to the number of observations taken from a population through which statistical inferences for the whole population are made (Cooper & Schindler, 2014). In determining the sample size, the researcher is guided by the level of confidence that they need to have in the data, the kind of analysis to be conducted, the accuracy and the total population of the study. This study used Yamane’s formula to determine the sample size as follows assuming the confidence level is 95% (Cooper & Schindler, 2014).

\[
n = \frac{N}{(1 + Ne^2)}
\]

Where:
- \( n \) = sample size
- \( N \) = study population
- \( e \) = alpha level, 0.05

\[
n = \frac{126}{1 + 126(0.05)}
\]

\[
= 96
\]
From the Yamane’s Formula above, the sample size of the study was determined. Based on the study population of 126 respondents, the sample size based on the formula was 96.

**Table 3.1: Sample Size Distribution**

<table>
<thead>
<tr>
<th>Population Area</th>
<th>Population</th>
<th>Sample</th>
<th>Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior Management</td>
<td>4</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td>General managers</td>
<td>31</td>
<td>29</td>
<td>30%</td>
</tr>
<tr>
<td>Senior Operations</td>
<td>39</td>
<td>25</td>
<td>26%</td>
</tr>
<tr>
<td>Supervisors</td>
<td>52</td>
<td>39</td>
<td>41%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>126</strong></td>
<td><strong>96</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

### 3.4 Data Collection Methods

Cooper and Schidler (2014) referred to data collection as the process of gathering and measuring information of data from the respondents of the study in manner that is well established and systematic with the aim of responding to the research questions or objectives. The primary instrument for data collection that was used in this study was Questionnaires. Questionnaire can be defined as the research instrument that contains a number of questions for the purpose of obtaining information from the respondents of the study (Robinson, 2018). The questionnaire used a Likert Scale of the 5 measurements that is (Strongly Disagree, Disagree, Neutral, Agree and Strongly Agree). The first section of the questionnaire had demographic information of the respondents, then the second section consisted of the questions to address the first objective of the research, followed by the third section which had questions for the second objective of the study and the last section of the questionnaire had the questions addressing the last objective of this study. (Howard-Payne, 2015) suggest that questionnaires are crucial tools for collection of primary data in research. Therefore, the use of questionnaire in this study is justifiable to the extent that the study only captured primary data from the respondents.
3.5 Research Procedures

Cooper and Schindler (2014) define research procedures as the detailed description that consists of the steps by step guidance on how the research should be carried out and meet the objectives intended. For this particular study, after approval of the research proposal, a letter was drafted to the Manager of Human Resource at Equity Bank Limited asking for permission to allow the study to be conducted from their premises, after the approval, a pilot testing was carried out using 10 respondents to determine the level validity and reliability of the questionnaire being used in data collection. Once the pilot test was complete, any weaknesses and inconsistence that were determined from the study questionnaire, were corrected before the actual data collection takes place. This was followed by the researcher appointing research assistant that went to the office of Equity Bank Limited, located the possible respondents and explained to them what the study intended to fulfil and how their bank would benefit from it. The research assistants gave the respondents a minimum of five days to fill the questionnaires being dropped at their office, then made a follow up to make sure that all the questionnaires have been filled. After counter checking all the sections with an attempt of making sure that all the sections were dully filled by the respondents, any questionnaire that had missing section, were returned back to the respondents and sought for the missing information. Then all the questionnaires were given back to the researcher to perform data analysis.

3.6 Data Analysis Methods

Data analysis is the process by which researchers evaluate data using analytical and logical reasoning to examine each component of data provided (Cooper & Schindler, 2014). This study used both descriptive and inferential statistics, whereby descriptive statistics examined percentages, frequencies, standard deviation and means while inferential statistics examined the correlation between the study variables. Data analysis software was used to analyse the data collected, this study used Statistical Package for Social Studies (SPSS) in data analysis, and the findings were presented in tables and figures.

3.7 Chapter Summary

This chapter highlighted the research methodology, first, the research design was presented, which was descriptive survey, the population of the respondents was also presented which is a total of 126 top executives and middle level managers working at Equity Bank Limited,
sampling technique was highlighted, the sample size was also presented consisting of the senior and middle level managers. The chapter presented the data collection methods that a close-ended questionnaire that was used, followed by the research procedures and data analysis methods. Chapter four provides results and findings based on the research methodology.
CHAPTER FOUR

4.0 RESULTS AND FINDINGS

4.1 Introduction

This chapter presents the results and findings gathered from the respondents of the study. The first part of the chapter covers the demographics information of the respondents, followed by the findings on the effect of mobile banking on performance, then the findings on the effect of internet banking on performance and lastly the findings online security banking on performance.

4.2 Response Rate and Demographic Information

4.2.1 Response Rate

The study had a response rate of 70%, and this accounted for the 69 questionnaires that were dully filled and the remaining 30% accounts for the 29 questionnaires that were not dully filled. A response rate of 70% was adequate for data analysis.

![Figure 4.1: Response Rate](image)

4.2.2 Demographic Information

This section presents the general information provided by the respondents including gender, age, number of years in the organization, level of education and job description.
4.2.2.1 Respondents Gender

Respondents were asked to indicate their gender, 49% of the respondents were female and 51% were male as shown in Figure 4.2. This implies that the study had a diverse gender representation.

![Figure 4.2: Respondents Gender](image)

4.2.2 Respondents Age

When the respondents were asked to indicate their age, 14% aged between 18-25 years, 18% aged between 26-33 years, 22% aged between the age of 34-40 years, 34% aged between 41-47 years and 12% above 48 years. This implies that the respondents the study had a diverse age representation.
4.2.3 Number of Years in the Organization

When the respondents were asked to indicate the number of years they have been in the organization, 34% have been in the firm for 8-10 years, 7% for more than 10 years, 26% for 5-7 years and 12% for less than a year as shown in Figure 4.4. This implies that the respondents had sufficient knowledge of the organization.

Figure 4.4: Number of Years in the Organization
4.2.4 Education Level

When the respondents were asked to indicate their highest level of education, 12% had a diploma, 26% had a bachelor’s degree and 62% had a master’s degree as shown in Figure 4.5. This implies that the respondents had the ability to read and interpret the findings sought in this study.

![Pie chart showing education level distribution]

Figure 4.5: Education Level

4.2.5 Job Designation

Respondents were asked to indicate their level of management, 39% were in lower level management, 48% were in middle level management and 13% were in senior management as shown in Figure 4.6. This implies that the respondents had sufficient knowledge of the organization.
4.3 The Effect of Mobile Banking on Performance

This study sought to determine the effect of mobile banking on performance. The findings are presented as follows;

4.3.1 Descriptive Statistics for Mobile Banking and Performance

The findings in Table 4.1 present the respondents’ feedback on the effect of mobile banking on organizational performance. The responses were tabulated in means and standard deviation derived from a Likert Scale of 1-5, where; 1-strongly disagree, 2-disagree, 3-neutral, 4-agree and 5-strongly agree. The findings show that the respondents agreed that Mobile banking applications have enhanced service delivery in your organization, mean = 4.22 and SD = 0.951. The findings show that the respondents agreed that mobile banking enhances productivity in the organization, mean = 4.16 and SD = 0.665. The findings show that the respondents agreed that mobile banking applications have brought convenience in your service delivery channels, mean = 4.16 and SD = 0.828.

The findings show that the respondents agreed that mobile banking applications have increased your service usage due to its convenience, mean = 4.28 and SD = 0.670. The findings show that the respondents agreed that mobile banking applications have enhanced innovative service delivery channels in your bank, mean = 4.43 and SD = 0.499. The findings show that the
respondents agreed that mobile banking application has expanded your loan portfolio in the organization, mean = 4.31 and SD = 0.743.

Furthermore, the findings show that the respondents mobile banking is crucial for efficiency in your banking operations, mean = 4.12 and SD = 0.591. The respondents were also in agreement that mobile banking platform enhances financial inclusion with a mean = 4.42 and SD = 0.497. The findings also show that mobile banking platform is crucial for customer attraction in the organization, with a mean = 4.39 and SD = 0.695.

Table 4.1: Descriptive Statistics for Mobile Banking and Performance

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile banking applications have enhanced service delivery in your organization.</td>
<td>67</td>
<td>4.22</td>
<td>.951</td>
</tr>
<tr>
<td>Mobile banking enhances productivity in the organization.</td>
<td>67</td>
<td>4.16</td>
<td>.665</td>
</tr>
<tr>
<td>Mobile banking applications have brought convenience in your service delivery channels.</td>
<td>67</td>
<td>4.16</td>
<td>.828</td>
</tr>
<tr>
<td>Mobile banking applications have increased your service usage due to its convenience.</td>
<td>67</td>
<td>4.28</td>
<td>.670</td>
</tr>
<tr>
<td>Mobile banking applications have enhanced innovative service delivery channels in your bank.</td>
<td>67</td>
<td>4.43</td>
<td>.499</td>
</tr>
<tr>
<td>Mobile banking application has expanded your loan portfolio in the organization.</td>
<td>67</td>
<td>4.31</td>
<td>.743</td>
</tr>
<tr>
<td>Mobile banking is crucial for efficiency in your banking operations.</td>
<td>67</td>
<td>4.12</td>
<td>.591</td>
</tr>
<tr>
<td>Mobile banking platform enhances Financial inclusion</td>
<td>67</td>
<td>4.42</td>
<td>.497</td>
</tr>
<tr>
<td>Mobile banking platform is crucial for customer attraction in the organization.</td>
<td>67</td>
<td>4.39</td>
<td>.695</td>
</tr>
<tr>
<td>Valid N (Listwise)</td>
<td>67</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.3.2 Correlation between Mobile Banking and Performance

Correlational analysis was carried out to establish the relationship between mobile banking (independent variable) and performance (dependent variable) in the study.

The findings in Table 4.2 presents a correlation between mobile banking being the independent variable and performance being the dependent variable. The findings revealed a positive and significant relationship between Mobile banking and Performance, $r (0.859); p-value < 0.01$.

Table 4.2: Correlation between Mobile Banking and Performance

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Variable</th>
<th>Performance</th>
<th>Mobile Banking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Performance</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td>0.859**</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>67</td>
<td>67</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

4.3.3 Regression for Mobile Banking and Performance

Regression model was carried out to determine the underlying relationship between the independent variable (mobile banking) and dependent variable (performance). The findings in Table 4.3 presents the fitness of model of regression model in determining the varying in the dependent variable cause change in the dependent indicator. The findings revealed an adjusted $R$ squared value of $(0.733)$ which implies that $73.3\%$ variation in performance is attributed to mobile banking and the remaining $26.7\%$ is attributed to the factors outside the model.
Table 4.3: Regression for Mobile Banking and Performance

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.859&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.737</td>
<td>.733</td>
<td>.19913</td>
</tr>
</tbody>
</table>

<sup>a</sup> Predictors: (Constant), Mobile Banking

The ANOVA test results presented in Table 4.4 indicates that the Fisher statistics value is 182.613 with a p-value of 0.000. This indicates that; F (1, 65) = 182.613, p = 0.000 (p-value < 0.01). This implies that there exists a substantial variance between the independent variable mobile banking and dependent variable performance.

Table 4.4: ANOVA for Mobile Banking and Performance

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>7.241</td>
<td>1</td>
<td>7.241</td>
<td>182.613</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>2.577</td>
<td>65</td>
<td>.040</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>9.819</td>
<td>66</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> Dependent Variable: Performance
<sup>b</sup> Predictors: (Constant), Mobile Banking

The coefficients Table 4.5, indicates the beta coefficient values for the variables under study computed as, constant (β0) = 1.051 and beta for mobile banking (β1) = 0.755. The p-value for mobile banking is recorded as 0.000 (p=0.000, p-value < 0.01). The findings imply that there is a significant relationship between mobile banking and performance.
The regression model was established as follows:

\[ Y \text{ (Performance)} = 1.051 + 0.755X1. \]

The findings therefore indicate that for every unit change in mobile banking there will be a 0.755 in performance.

### 4.4 The Effect of Internet Banking on Performance

This study sought to determine the effect of internet banking on performance. The findings are presented as follows;

#### 4.4.1 Descriptive Statistics for Internet Banking and Performance

The findings in Table 4.6 presents the respondents’ feedback on the effect of internet banking on organizational performance. The responses were tabulated in means and standard deviation derived from a Likert Scale of 1-5, where; 1-strongly disagree, 2-disagree, 3-neutral, 4-agree and 5-strongly agree. The findings show that the respondents agreed that internet banking allows customers to access banking services without necessarily visiting the banking halls, mean = 4.25 and SD = 0.766. The findings revealed that the respondents agreed that internet banking is crucial for the performance of the bank, mean = 4.22 and SD = 0.755.

The findings revealed that the respondents agreed that internet banking is essential for efficient banking process among customers, mean = 4.07 and SD = 0.893. The respondents agreed that internet banking is essential for cost reduction for the organization, mean = 4.48 and SD = 0.704. The findings revealed that the respondents were in agreement that internet banking plays a great role in banking service delivery in the organization, mean = 4.28 and SD = 0.867.

---

**Table 4.5: Coefficient Table for Mobile Banking and Performance**

<table>
<thead>
<tr>
<th>Model</th>
<th>Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>1.051</td>
<td>.240</td>
<td>4.375</td>
<td>.000</td>
</tr>
<tr>
<td>Mobile Banking</td>
<td>.755</td>
<td>.056</td>
<td>.859</td>
<td>13.513</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Performance
The findings revealed that the respondents were in agreement that internet banking is essential for providing customer service in the organization, mean = 4.24 and SD = 0.854. The respondents were also in agreement that efficiency in baking operations is enhanced through internet banking, mean = 4.24 and SD = 0.854. The findings also agreed that internet banking platforms have ensured 24 hours service delivery to your clients, mean = 4.46 and SD = 0.990.

The findings of this study also show that internet banking platforms supports your customer service response services, mean = 4.31 and SD = 0.874. The findings also show that the respondents agreed that internet banking platforms have enabled electronic funds transfer service in your bank, mean = 4.31 and SD = 0.925.

Table 4.6: Descriptive Statistics for Internet Banking and Performance

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet banking allows customers to access banking services without necessarily visiting the banking halls.</td>
<td>67</td>
<td>4.25</td>
<td>.766</td>
</tr>
<tr>
<td>Internet banking is crucial for the performance of the bank.</td>
<td>67</td>
<td>4.22</td>
<td>.755</td>
</tr>
<tr>
<td>Internet banking is essential for efficient banking process among customers.</td>
<td>67</td>
<td>4.07</td>
<td>.893</td>
</tr>
<tr>
<td>Internet banking is essential for cost reduction for the organization.</td>
<td>67</td>
<td>4.48</td>
<td>.704</td>
</tr>
<tr>
<td>Internet banking plays a great role in banking service delivery in the organization.</td>
<td>67</td>
<td>4.28</td>
<td>.867</td>
</tr>
<tr>
<td>Internet banking is essential for providing customer service in the organization.</td>
<td>67</td>
<td>4.24</td>
<td>.854</td>
</tr>
<tr>
<td>Efficiency in baking operations is enhanced through internet banking.</td>
<td>67</td>
<td>4.24</td>
<td>.854</td>
</tr>
<tr>
<td>Internet banking platforms have ensured 24 hours service delivery to your clients.</td>
<td>67</td>
<td>4.46</td>
<td>.990</td>
</tr>
<tr>
<td>Internet banking platforms supports your customer service response services.</td>
<td>67</td>
<td>4.31</td>
<td>.874</td>
</tr>
<tr>
<td>Internet banking platforms have enabled electronic funds transfer service in your bank.</td>
<td>67</td>
<td>4.31</td>
<td>.925</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>67</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.4.2 Correlation for Internet Banking and Performance

Correlational analysis was carried out to establish the relationship between internet banking (independent variable) and performance (dependent variable) in the study.

The findings in Table 4.7 presents a correlation between internet banking being the independent variable and performance being the dependent variable. The findings revealed a positive and significant relationship between mobile banking and performance, r (0.547); p-value < 0.01.

Table 4.7: Correlation for Internet Banking and Performance

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Variable</th>
<th>Performance</th>
<th>Internet Banking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Performance</td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
<td>67</td>
</tr>
<tr>
<td>Internet Banking</td>
<td>Pearson Correlation</td>
<td>.547**</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>67</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>67</td>
<td>67</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

4.4.3 Regression for Internet Banking and Performance

Regression model was carried out to determine the underlying relationship between the independent variable (internet banking) and dependent variable (performance). The findings in Table 4.8 presents the fitness of model of regression model in determining the varying in the dependent variable cause change in the dependent indicator. The findings revealed an adjusted R squared value of (0.289) which implies that 28.9% variation in performance is attributed to internet banking and the remaining 71.1% is attributed to the factors outside the model.

Table 4.8: Regression for Internet Banking and Performance

<table>
<thead>
<tr>
<th>Model Summary</th>
<th>Adjusted R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>R Square</td>
</tr>
<tr>
<td>R</td>
<td>R Square</td>
</tr>
</tbody>
</table>
The ANOVA test results presented in Table 4.9 indicates that the Fisher statistics value is 27.8 with a p-value of 0.000. This indicates that; F (1, 65) = 27.8, p = 0.000 (p-value < 0.01). This implies that there exists a substantial variance between the independent variable internet banking and dependent variable performance.

**Table 4.9: ANOVA for Internet Banking and Performance**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Regression</td>
<td>2.941</td>
<td>1</td>
<td>2.941</td>
<td>27.800</td>
<td>.000&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Residual</td>
<td>6.877</td>
<td>65</td>
<td>.106</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>9.819</td>
<td>66</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Performance  
b. Predictors: (Constant), Internet Banking

The coefficients Table 4.10, indicates the beta coefficient values for the variables under study computed as, constant (β0) = 1.464 and beta for internet banking (β1) = 0.657. The p-value for internet banking is recorded as 0.000 (p=0.000, p-value < 0.01). The findings imply that there is a significant relationship between internet banking and performance.

**Table 4.10: Coefficient Table for Internet Banking and Performance**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>1.464</td>
<td>.536</td>
</tr>
<tr>
<td>Internet Banking</td>
<td>.657</td>
<td>.125</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Performance
The regression model was established as follows:

\[ Y \text{ (Performance)} = 1.464 + 0.657X1. \]

The findings therefore indicate that for every unit change in internet banking there will be a 0.657 in performance.

4.5 The Effect of Online Security System on Performance

This study sought to determine the effect of online security system on performance. The findings are presented as follows;

4.5.1 Descriptive Statistics for Online Security System and Performance

The findings in Table 4.10 present the respondents’ feedback on the effect of internet banking on organizational performance. The responses were tabulated in means and standard deviation derived from a Likert Scale of 1-5, where; 1-strongly disagree, 2-disagree, 3-neutral, 4-agree and 5-strongly agree. The findings revealed that the respondents agreed that online systems security enhances performance of the organization, mean = 4.48 and SD = 0.503. The findings revealed that the respondents agreed that online systems security is essential for the organization since it offers customer protection, mean = 4.21 and SD = 0.897.

The study also revealed that the respondents agreed that privacy is enhanced through online systems security firms in the bank, mean = 4.27 and SD = 0.730. The respondents were also in agreement that online systems security enhances customer satisfaction in the organization, mean = 4.42 and SD = 0.873. The respondents agreed that online systems security is essential for developing company reputation among customers, mean = 4.30 and SD = 0.739. The findings show that the respondents agreed that online systems security enables customers to perform secured transactions, mean = 4.25 and SD = 0.910.

The findings show that the respondents agreed that systems security systems improves service delivery among customers, mean = 4.22 and SD = 0.867. The findings show that the respondents were in agreement that online security systems influence the adoption of internet banking services among customers, mean = 4.33 and SD = 0.877. The findings show that the respondents agreed that online security systems provides security measures to clients on how to protect their banking activities, mean = 4.49 and SD = 0.842.
Table 4. 11: Descriptive Statistics for Online Security System and Performance

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online systems security enhances performance of the organization.</td>
<td>67</td>
<td>4.48</td>
<td>.503</td>
</tr>
<tr>
<td>Online systems security is essential for the organization since it offers customer protection.</td>
<td>67</td>
<td>4.21</td>
<td>.897</td>
</tr>
<tr>
<td>Privacy is enhanced through online systems security firms in the bank.</td>
<td>67</td>
<td>4.27</td>
<td>.730</td>
</tr>
<tr>
<td>Online systems security enhances customer satisfaction in the organization.</td>
<td>67</td>
<td>4.42</td>
<td>.873</td>
</tr>
<tr>
<td>Online systems security is essential for developing company reputation among customers.</td>
<td>67</td>
<td>4.30</td>
<td>.739</td>
</tr>
<tr>
<td>Online systems security enables customers to perform secured transactions.</td>
<td>67</td>
<td>4.25</td>
<td>.910</td>
</tr>
<tr>
<td>Systems security systems improves service delivery among customers.</td>
<td>67</td>
<td>4.22</td>
<td>.867</td>
</tr>
<tr>
<td>Online security systems influence the adoption of internet banking services among customers.</td>
<td>67</td>
<td>4.33</td>
<td>.877</td>
</tr>
<tr>
<td>Online security systems provides security measures to clients on how to protect their banking activities.</td>
<td>67</td>
<td>4.49</td>
<td>.842</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>67</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.5.2 Correlation between Online Security System and Performance

Correlational analysis was carried out to establish the relationship between online security system (independent variable) and performance (dependent variable) in the study. The findings in Table 4.12 presents a correlation between online security system being the independent variable and performance being the dependent variable. The findings revealed a significant relationship between online security system and performance, \( r (0.798); p\)-value < 0.01.
Table 4.12: Correlation between Online Security System and Performance

<table>
<thead>
<tr>
<th>variable</th>
<th>Performance</th>
<th>Online Security System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance</td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>67</td>
</tr>
<tr>
<td>Online Security System</td>
<td>Pearson Correlation</td>
<td>.798**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>67</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

4.5.3 Regression for Online Security System and Performance

Regression model was carried out to determine the underlying relationship between the independent variable (online security system) and dependent variable (performance). The findings in Table 4.13 presents the fitness of model of regression model in determining the varying in the dependent variable cause change in the dependent indicator. The findings revealed an adjusted R squared value of (.632) which implies that 63.2% variation in performance is attributed to online security system and the remaining 28.9% is attributed to the factors outside the model.

Table 4.13: Regression for Online Security System and Performance

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.798a</td>
<td>.637</td>
<td>.632</td>
<td>.23414</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Online Security System

The ANOVA test results presented in Table 4.14 indicates that the Fisher statistics value is 182.613 with a p-value of 0.000. This indicates that; F (1, 65) = 114.105, p = 0.000 (p-value < 0.01). This implies that there exists a substantial variance between the independent variable and dependent variable performance.
Table 4. 14: ANOVA for Online Security System and Performance

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>6.255</td>
<td>1</td>
<td>6.255</td>
<td>114.105</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>3.563</td>
<td>65</td>
<td>.055</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>9.819</td>
<td>66</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Performance
b. Predictors: (Constant), Online Security System

The coefficients Table 4.15, indicates the beta coefficient values for the variables under study computed as, constant (β0) = 0.679 and beta for internet banking (β1) = 0.832. The p-value for online security system is recorded as 0.000 (p=0.000, p-value < 0.01). The findings imply that there is a significant relationship between online security system and performance.

Table 4. 15: Coefficient Table for Online Security Systems

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>(Constant)</td>
<td>.679</td>
<td>.338</td>
</tr>
<tr>
<td>Online Security Systems</td>
<td>.832</td>
<td>.078</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Performance

The regression model was established as follows:

Y (Performance) = 0.679 + 0.832X1.

The findings indicate that for every unit change in online security system there will be a 0.832 in performance.
4.6 Chapter Summary

This chapter has presented findings gathered from the target respondents. The findings have revealed that there exists a significant relationship between mobile banking and performance. The findings also show a significant relationship between internet banking and performance. Lastly, a significant relationship between online security system and performance has been revealed. Chapter five presents the discussion, conclusion and recommendations.
CHAPTER FIVE

5.0 DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the discussion, conclusion and recommendations of the study on the effect of internet banking on performance of commercial banks with a case of Equity Bank Limited. This first part of the chapter presents the discussion, followed by conclusions and lastly recommendations in line with specific objectives.

5.2 Summary

The general objective of this study was to determine the effects of internet banking on performance of commercial banks with a case of Equity Bank Limited. The specific objectives that guided the study were to: examine the effect of mobile banking on performance, analyze the effect of internet banking on performance; and assess the effect of online security on financial performance of commercial banks.

This study was based on primary data due to the nature of the variable to be generated and the type of population characteristics. The target population comprised of 126 managers working at Equity Bank Limited. Questionnaire was used to aid the collection of primary data. Stratified sampling technique was deployed. Data was collected, edited, coded, classified and analyzed using Statistics Package for Social Sciences (SPSS) software version 24 and later presented in frequency tables and figures.

The first objective of the study aimed to determine the effect of mobile banking and performance of the organization. The findings revealed a positive and significant relationship between mobile banking and performance, r (0.859); p-value < 0.01.

The second objective of the study aimed to determine the effect of internet banking on performance of the organization. The findings revealed a positive and significant relationship between mobile banking and performance, r (0.547); p-value < 0.01.

The third objective sought to determine the effect of online security system on performance of the organization. Correlational analysis carried out to established a relationship between online security system (independent variable) and performance (dependent variable) in the study. The
findings revealed a significant relationship between online security system and performance, r
(0.798); p-value < 0.01.

5.3 Discussion

5.3.1 The Effect of Mobile Banking on Performance

This study aimed to determine the effect of mobile banking on performance. The findings
revealed that there is a significant relationship between mobile banking and performance.
These findings correspond to Kihara (2015) who indicates argues that mobile banking has had
notable effects on the performance of commercial banks in Kenya with seeming interest for
every commercial bank to adopt the technology. It is a technology that is a necessity and a top
priority for every player in the Kenyan financial sector. Each year there can be observed that
the commercial banks set out huge expenditure budgets for the expansion, adoption and
maintenance of their mobile banking platforms and system. For the banking institution to
survive competition in the market, there is need to put up the innovation that guarantees
convenience to the customers. The convenience to link to a bank account through a mobile
gadget is seen as power and empowerment to the customer owing to the fact that he or she has
total financial control over their funds at any time of day or night (Riquelme & Rios, 2010).

The findings are also in line with Ghosh (2016) who argue that mobile banking involves the
use of mobile phone or another mobile device in carrying out financial transactions that are
directly linked to the customer account. Singh and Srivastava (2018), suggest that mobile
banking involves the provision and the availing of banking and financial service with the help
of mobile telecommunication device. The services cut across the carrying out of balance
checks, account transactions, payments, credit applications and other banking transactions
through a mobile device like a smartphone which is the most used device in developed nations
or the personal digital assistant (Mbama & Ezepue, 2018).

In addition, Mullan et.al (2017) indicates that an innovation stemming from the
telecommunication revolution in the late twentieth century, mobile banking brings the
convenience of making monetary transaction from a bank account to other bank accounts to
even presentation and printing of bank statements by a client point of convenience. According
to Mbama and Ezepue (2018) it is whereby the banking service provider provides a platform
in which their customers conveniently transact securely from remote locations usually
locations of their convenience such as their homes or workplaces. Customers need not to visit a bank premise to do their transactions as the core banking services such as payment of bills, production of statements, transfer of cash from one account to another account and payment of goods and services at a shopping store. The banking institution usually provide any form of support to a client on a twenty four hours basis through mostly a hotline number provided or on an instant chat service.

The findings show that mobile banking is essential in customer attraction. These findings are in line with the work of Curwen and Whalley (2011) who indicate that there is a rapid uptake of the mobile banking application among the population with statistics indicating that two out of five customers in the developed world prefer the use of mobile banking to when conducting transactions for the obvious reasons as the ease of convenience in the banking process. According to Nejad (2016) the increased the functionality of the mobile banking since the more features were introduced on the applications and it ensured better security for transaction thereby reducing potential fraud considerably. To ensure the security for transactions, mobile banking on the smartphone application has gone to put more than one layer of authentication. Case in point is the banking application fusing with artificial intelligence, whereby mobile banking requires to use finger print detection aside from the traditional username and password to grant access to the mobile banking platform (Adewoye, 2013).

The findings also revealed that mobile banking enhances financial inclusion. According to Ayachit (2015) mobile banking, which is a critical integration of the banking system and has a firm footing in the banking industry has allowed for consumers to transact with convenience thereby not needing to visit any banking hall. Cruz and Laukkanen (2010) argue that commercial banks rely on customer deposits in order to make available funds to conduct the business of lending and financing. For this to happen, banks require high levels of liquidity as the more cash at their disposal the many projects they are able to finance and lend out. Financial inclusion of all category of earners is critical in boosting the liquidity level of the bank. It is critical not to ignore the bracket of earners that are considered as low income earners in the financial sector or the banking sector.

It was revealed that mobile banking is essential for creating convenience in the banking operations. According to Singh and Srivastava (2018) mobile banking has revolutionized this
phenomenal as most of the platforms allow deposits to be made directly into the banks. To achieve this, commercial banks have integrated their mobile banking system with the mobile money systems offered by telecommunication companies in the all the countries that support and license mobile telecoms money. Tran and Corner (2016) indicates that bank customers can deposit money at any time of their convenience and the overall effect is the rise of liquidity of the commercial banks. This has resulted to commercial banks having a competitive edge over their competitors in the highly competitive market.

5.3.2 The Effect of Internet Banking on Performance

This study also sought to investigate the effect of internet banking on performance. The findings revealed that there is a positive relationship between internet banking and performance of commercial bank. According to Singh and Srivastava (2018) internet allows the core banking system to be linked to customers and in turn, the customer can enjoy the banking service at any convenience via a device that can access the internet. Curwen and Whalley (2011) internet banking enjoyed popularity towards the end of the 20th century when the internet started becoming available to the general public. The internet was mostly a preserve for large organization and mostly military organization. It was also an expensive form of communication thereby not making it feasible to connect the general public in that the return on investment was mostly marginal and took really a long time for organizations that set out on the venture to commercially sell the internet connection a lengthy period to recoup their investments.

The findings revealed that the internet banking allows customers to access banking services without necessarily visiting the banking halls. According to Adewoye (2013) due to internet banking technology there is a considerable effort towards creating “virtual banking halls” where the banking customers can manage their transaction without necessarily having the hassles of visiting the real banking hall. Frempong (2014) indicates that online banking is the use of electronic and telecommunication networks in delivering a wide range of value added products and services to the bank customers. The use of information technology in the banking sector is known as online banking. Online banking is the product of e-commerce in the area of banking and financial services. Commercial banks also offer payment services on behalf of their consumers who conduct financial transactions in various electronic shops. Commercial
banks provide payment services on the behalf of their consumers making an umbrella term for the process by which individuals may carry out banking transactions electronically without the use of a brick and mortar institution (Singh & Srivastava, 2018).

The findings revealed that internet banking plays a great role in banking service delivery in the organization. According to Mutua (2010) there is a commendable effort by commercial institutions especially in Kenya to push for adoption of the internet banking as a primary way of replacing the traditional banking system with the results showing that there is a reward in the efforts that are being employed. The rush to adoption of the online banking option and platforms has brought about a shakeup in the banking industry, as the technology is revolution in that it changes the way banking traditionally used to be conducted. The easy to use mobile platforms require that customers of the bank conduct the activities that were once being done by the employer of the bank. To allow for effective transactions in the online platforms is the adoption of a raft of security measures that ensure security protocols are not breached and thereby making the whole process convenient and free from fraud. Multi-level security protocols are employed and the users are encouraged to log into the internet banking platforms from secure connections and always keep the banking details to themselves (Demoulin & Djelassi, 2013).

The findings of the study also revealed that internet banking is essential for creating efficiency in the banking operations. With the online banking platforms, banking industries have been seen gaining the tremendous rate of efficiency, an obvious sign of the return on their investments as a whole. New and curios customers have been drawn into the wave of online banking adding up to the number already using the online banking platforms (Cruz & Laukkanen, 2010). According to Ayachit (2015) the online banking platforms are such that they provide for opening of banking accounts at only few clicks after they person wishing to open a bank account provides the required credentials. This has thus boosted to the additional of customers into the bracket of online banking and consequently increasing the population of banked individuals. Efficiency is crucial for any organization transacting business. The organization, in this aspect commercial banks rely on efficiency to attract more customers and seek a better market position. Customer retention and growth is a direct indication of good and
efficient performance by any organization and it relies on heavily on good management of the organization (Gowanit & Chaiyawat, 2016).

5.3.3 The Effect of Online Security System on Performance

This study sought to determine the effect of online security system on performance. The findings revealed that a significant relationship exists between online security system and performance. According to Sidkar, Kumar and Makkad (2015) indicates online security system are essential for the organization since it allows online mobile banking services that have enabled commercial banks to provide real time gross settlement procedures whereby the customer can easily initiate real time payments when making payments for their goods and purchases and the transaction needs to take place instantly without having to wait for a long period as compared to traditional banking. In a modern world of commercial activities, with rapid growth of economic activities it requires banks to have fast, reliable and convenient payment systems and procedures that will support the ways businesses are conducted for them to gain a competitive advantage of staying relevant in the banking sector (Asfour & Haddad, 2014).

The findings show that online systems security enables customers to perform secured transactions. According to Lassa and Manolis (2015) privacy and security of information is an asset to an individual. Many applications require individuals to give personal information such as social security numbers, bank account numbers, account information like balances, and identifying transactions and thus people of from walks of life tend to be concerned for their privacy and security. With respect to the attitude toward and adoption of internet banking many experts has acknowledged consumers” concerns regarding security, privacy, and trust. Changchit (2008) observed that in today’s digital age, internet users are concerned with many privacy issues as this digital age continue to affect a daily personal financial information. Saeednia and Abdollahi (2012) studied privacy and found that privacy directly and significantly influences trust as a mediator variable to promote effective commitment of the clients of online banking.

It was revealed that online security systems influence the adoption of internet banking services among customers. According to Curwen and Whalley (2011) social engineering is among the most common attacks does not involve knowledge of any type of computer system. Tricking
consumers into reveling sensitive information by posing as a system administrator or customer service representative is known as social engineering. Social engineers use surveillance and a consumer’s limited knowledge of computer systems to their advantage by collecting information that would allow them to access private accounts. Attackers can use port scanners to ascertain entry points into a system and use various techniques to steal information. This type of software sends signals to a machine or router and records the message the machine responds with to ascertain information and entry points (Ayachit, 2015). The main purpose of a port scanner is to gather information related to hardware and software that a system is running so that a plan of attack can be developed.

The findings revealed that online security systems influence the adoption of internet banking services among customers. According to Nasri (2011) who researched on factors influencing the adoption of internet banking in Tunisia and findings of the study reveal that internet banking usage is much 39 persuaded by factors such as risk, convenience, security and also prior internet knowledge. Demographic factors show significant impact on the behavior to use internet banking. Banks should take some steps to upgrade their security, low risk and prior internet knowledge for making good marketing strategies. Further research by Safeena et al., (2011) on internet banking adoption in India revealed that perceived usefulness, perceived ease of use and perceived risk were the most important factors that influence the adoption of online banking and also help to make strategy formulation process. Findings from the research study suggested longitudinal study in the future which will help to identify the research model in different time periods and make comparisons and thus provide more views into the phenomenon of the adoption of online banking.

5.4 Conclusion

5.4.1 The Effect of Mobile Banking on Performance

This study concluded that there is statistically significant relationship between mobile banking and performance. Mobile banking enhances competitive advantage for commercial banks by building a strong relationship with clients by offering new services of good quality and high secured, banks have invested in information technology to present services in order to get
confidence and satisfaction that their customers aspire through mobile banking services. This study concluded that mobile banking is essential for creating convenience in banking operations in the organization. This study also concluded that mobile banking is essential for cost reduction in the organization since the organization can rely on technology for its customers to conduct transactions without visiting the banking halls that requires them to retain a higher number of employees.

5.4.2 The Effect of Internet Banking on Performance

This study concluded that internet banking influences the performance of the organization. Internet banking is considered to be one of the most value addition that has been done in the banking industry since they enable commercial banks to provide facilities through mobile devices reducing face to face banking transactions through an automated mobile banking services wherever possible. This study concluded that internet banking services have enabled commercial banks to provide real time gross settlement procedures whereby the customer can easily initiate real time payments when making payments for their goods and purchases and the transaction needs to take place instantly without having to wait for a long period as compared to traditional banking.

5.4.3 The Effect of Online Security System on Performance

This study concluded that online security system influence performance of commercial banks. Online security system is essential for customer satisfaction since consumers feel confident when commercial banks have reliable online security system that protects consumers from online fraud as well as risk. This study concludes that social engineering affects the adoption as well as the uptake of electronic banking for commercial banks.

5.5 Recommendation

5.5.1 Recommendations for Improvement

5.5.1.1 The Effect of Mobile Banking on Performance

This study recommends that Equity Bank Limited should create more awareness on its mobile banking platforms among its customers in order to create a sustainable adoption of the technology as well as the platform. This study also recommends that Equity Bank Limited
should incorporate its banking products and services with telecommunication firms for an effective implementation of mobile banking services. This study recommends that Equity Bank Limited should encourage its customer base to make use of their mobile banking platforms which is more convenient as opposed to physical banking in the banking halls.

5.5.1.2 The Effect of Internet Banking on Performance

Since this study established a significant relationship between internet banking and performance of commercial bank. This study recommends that Equity Bank Limited should provide more knowledge to the customers on how they can easily be enabled on internet banking platform s to allow them carry out financial transactions. This study also recommends that Equity Bank Limited should market its banking products and services on internet banking to enhance more sales as well as increase the volumes of transactions carried out by customers.

5.5.1.3 The Effect of Online Security System on Performance

This study recommends that Equity Bank Limited should educate its customers on how they can stay protected when accessing financial services through the internet. This will attract customers to adopt internet banking as well as mobile banking since their privacy as well as security is protected. This study also recommends that Equity Bank Limited should constant monitor any possible fraudulent activities that can pose threat or risk that may jeopardize its customers when making electronic transactions.

5.5.2 Recommendations for Future Studies

This study investigated the effects of technological innovations on performance of commercial banks with a case study of Equity Bank Limited. This study was limited to three objectives including; mobile banking, internet banking and online security systems. Future studies can explore other variables such as mobile money services, digital banking platforms and digital lending technology.
REFERENCES


Bridges. (2012). *Technology Adoption*.


11\textsuperscript{th} MARCH 2020

GITAU MAUREEN WAMUHU

P.O. BOX 14634,0800

NAIROBI

Dear Sir/Madam,

RE: REQUEST FOR YOUR PARTICIPATION IN MY STUDY

I am a student at United States International University-Africa undertaking a Masters in Business Administration. As part of the requirement for the award of the degree, I am currently conducting a research study titled \textit{Effects of Internet Banking on Financial Performance of Commercial Banks: A case study of Equity bank}.

This study will be beneficial to the entire banking industry since it will provide information on the effects of internet banking on the financial performance of their operations. The views and opinions obtained are confidential and will only be used for the purpose of this research proposal.

Kindly take a few minutes in responding to the study questionnaire provided. Your participation is highly valued.

Yours Sincerely,

Maureen Gitau
APPENDIX II: QUESTIONNAIRE

SECTION I: GENERAL INFORMATION

1. Indicate your gender
   Male ☐  Female ☐

2. Indicate your age range
   18-25 Years ☐
   26-33 Years ☐
   34-40 Years ☐
   41-47 Years ☐
   48 and Above ☐

3. Indicate how many years you have worked at the Organization
   0-1 Years ☐
   2-4 Years ☐
   5-7 Years ☐
   8-10 Years ☐
   Above 10 Years ☐

4. Indicate your highest level of education.
   Certificate ☐
   Diploma ☐
   Bachelor’s Degree ☐
   Master’s Degree ☐
   Doctorate Degree ☐

5. Kindly indicate your job description.
   Senior Management ☐
   Middle Level Management ☐
   Lower Level Management ☐
SECTION II: The effect of mobile banking on Financial performance of commercial banks

<table>
<thead>
<tr>
<th>No</th>
<th>Questions: Answer the following questions on the effect of mobile banking on performance to the best of your knowledge using the following Likert scale. Strongly Disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, Strongly Agree = 5.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<tbody>
<tr>
<td>1.</td>
<td>Mobile banking applications have enhanced service delivery in your organization.</td>
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<td>2.</td>
<td>Mobile banking enhances productivity in the organization.</td>
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<td>3.</td>
<td>Mobile banking applications have brought convenience in your service delivery channels.</td>
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<td>4.</td>
<td>Mobile banking applications have increased your service usage due to its convenience.</td>
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<td>5.</td>
<td>Mobile banking applications have enhanced innovative service delivery channels in your bank.</td>
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<td>6.</td>
<td>Mobile banking application has expanded your loan portfolio in the organization.</td>
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<td>7.</td>
<td>Mobile banking is crucial for efficiency in your banking operations.</td>
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<td>8.</td>
<td>Mobile banking enhances financial inclusion.</td>
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<td>9.</td>
<td>Mobile banking platform is crucial for customer attraction in the organization.</td>
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SECTION III: The Effect of Internet banking on Financial performance of commercial banks

<table>
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<tr>
<th>No</th>
<th>Questions: Answer the following questions on the effect of internet banking on performance to the best of your knowledge using the following Likert scale. Strongly Disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, Strongly Agree = 5.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<tbody>
<tr>
<td>1.</td>
<td>Internet banking allows customers to access banking services without necessarily visiting the banking halls.</td>
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</tbody>
</table>
2. Internet banking is crucial for the performance of the bank.
3. Internet banking is essential for efficient banking process among customers.
4. Internet banking is essential for cost reduction for the organization.
5. Internet banking plays a great role in banking service delivery in the organization.
6. Internet banking is essential for providing customer service in the organization.
7. Efficiency in baking operations is enhanced through internet banking.
   Internet banking platforms have ensured 24 hours service delivery to your clients.
8. Internet banking platforms supports your customer service response services.
9. Internet banking platforms have enabled electronic funds transfer service in your bank.

SECTION IV: The Effects of Online Security Systems on Financial performance of commercial banks

No | Questions | 1 | 2 | 3 | 4 | 5
---|-----------|---|---|---|---|---
1. | Online systems security enhances performance of the organization. |   |   |   |   |   |
2. | Online systems security is essential for the organization since it offers customer protection. |   |   |   |   |   |
3. | Privacy is enhanced through online systems security firms in the bank. |   |   |   |   |   |
4. | Online systems security enhances customer satisfaction in the organization. |   |   |   |   |   |
5. | Online systems security is essential for developing company reputation among customers. |   |   |   |   |   |

**Questions:** Answer the following questions on the effects of online security systems to the best of your knowledge using the following Likert scale. Strongly Disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, Strongly Agree = 5.
<p>| | |</p>
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<tr>
<td>6.</td>
<td>Online systems security enables customers to perform secured transactions.</td>
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<tr>
<td>7.</td>
<td>Systems security systems improves service delivery among customers.</td>
</tr>
<tr>
<td>8.</td>
<td>Online security systems influence the adoption of internet banking services among customers.</td>
</tr>
<tr>
<td>9.</td>
<td>Online security systems provides security measures to clients on how to protect their banking activities.</td>
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</tbody>
</table>

Thank you for your participation
12th March 2020

To whom it may concern

RESEARCH PROJECT BY – GITAU WAMUHU MAUREEN - ID #: 653921

The bearer of this letter is a student at the United States International University-Africa pursuing a Master in Business Administration.

As part of the program, she is required to undertake a research project on “Effects of Internet Banking on Financial Performance of Commercial Banks: Case Study of Equity Bank.” This requires her to collect data and information from various relevant institutions.

Kindly assist by enabling her access data, information and contacts with respondents who can complete her questionnaires. I assure you that the information provided will be treated with the utmost confidentiality.

Should you have any queries regarding the student research please feel free to contact me on my email, tookech@usi.ac.ke or phone, +254 730116168

Yours sincerely

Timothy Okoch – (PhD), Accounting, Finance and Economics.
Department Chair, Chandaria School of Business
APPENDIX IV: NACOSTI PERMIT

RESEARCH LICENSE

This is to certify that Ms. Maureen Gitau of United States International University Africa, has been licensed to conduct research in Nairobi on the topic: EFFECTS OF INTERNET BANKING ON FINANCIAL PERFORMANCE OF COMMERCIAL BANKS: CASE STUDY OF EQUITY BANK for the period ending: 23 June 2021.

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