THE EFFECTS OF ELECTRONIC BANKING AS AN INNOVATION STRATEGY ON PERFORMANCE OF COMMERCIAL BANKS IN KENYA

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DECLARATION

This research project is my original work and has not been presented for the award of a degree in any other university or any other learning institution for examination purpose.

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This project has been submitted for examination with my approval as a university supervisor.

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DEDICATION

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ABBREVIATIONS AND ACRONYMS

ATMS : Automated Teller Machines

EC : Electronic Banking

CBK : Central Bank of Kenya

CAR : Capital Adequacy Ratio

CMA : Capital Markets Authority

ICT : Information and Communication Technology

IFRSs : International Financial Reporting Standards (IFRSs)

IT : Information Technology

KBA : Kenya Banker's Association

KNBS : Kenya National Bureau of Statistics

NSE : Nairobi Stock Exchange (NSE),

PESTEL: Political, Economic, Social, Technological, Ecological and Legal Factors.

PCs : Personal Computers.

PGs : Prudential Guidelines

PWC : Price Waters Coopers

ROA : Return on Assets

ROE : Return on Equity

POS : Point of Sale.

TAM : Technology Acceptance Model.

SPSS : Statistical Package for the Social Sciences

USA : United States of America

VRIO : Variability, Rarity, Imitability and Organization.

ABSTRACT

The goal of this study was to analyze the impact of e-banking as an innovation strategy on the performance of commercial banks in Kenya. The study adopted a descriptive research design that was cross sectional in approach. A drop and pick questionnaire was administered on the relevant bank's respondent headquartered in Nairobi, Kenya. A census survey was conducted on the total population of 42 commercial banks registered by CBK as at 30th June 2016.Most respondents accounting for 70% of the total respondents were in finance and operations and were also experienced in their field. Their responses informed the findings of this study. Secondary data for this study was analyzed using regression analysis of the dependent variable being profit before tax and independent variables being electronic banking innovation strategy proxied by POSs, electronic cards and ATMs. The analysis was generated from entering and sorting data through excel and subsequently analyzed through SPSS package. Results of this study indicate that e-banking strategy enhance performance of banks in terms of capital adequacy, asset quality, management efficiency, earnings, liquidity position, market risk sensitivity and client value addition by expanding efficiency in processes of deposit taking, withdrawals, account checking and payments at the comfort of their mobile phones, agents, internet or even ATMs. 90% respondents were in agreement of e-banking's positive effect on the performance of their banks. This study also found significantly strong relationship between e-banking strategy proxied by point of sales terminals and electronic cards issued and performance of commercial bank measured by profit before tax, where one point increase in electronic cards leads to 5 points increase in performance while one point increase in POS leads to 0.22 point increase in performance and one point increase in ATMs installed lead to a decline in performance by 3.473. However, results indicate that e-banking effectiveness in enhancing performance of commercial banks is affected by various challenges that include; rapid technological advancements, high e-banking infrastructure cost, security concerns, limited support by top management and regulators such as Central Bank of Kenya. Also, with the emergence of alternative e-banking platforms channels such as mobile money, offered by communications companies, a thorough research needs to be done to analyze their effect on performance of the commercial banks as well as strategies pursued by banks to counter this competitive threat. Finally, recommendations for this study include bank management to seek alternative funding for e-banking technology such as joint investment by all banks in a single e-banking platform to be shared and tailored for participants in the industry at a fraction of the original fee. They should also consider continuous innovations, training of staff and end users to ensure productivity of e-banking innovation tools. Great support is also required from top management from planning to implementation and evaluation of e-banking innovation strategy for its success. In conclusion, an appropriate in house risk management framework and an up to date regulatory framework by CBK is required to govern and mitigate risks and security concerns posed by electronic banking innovation strategy environment.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Electronic banking is a multi-channel model that delivers the traditional banking activities of deposit taking and lending using the bank teller assistance in a brick and mortar building to click and mortar retailer with bank customers processing transactions at their own convenience. E-banking offers services such as balance enquiry, funds transfer and bill payments, loan and credit card applications, foreign exchange transactions, account opening and brokerage, Schaecheter (2002). Electronic banking uses various channels to deliver banking services, these include; ATMs, internet banking, mobile banking and agency banking among others. Commercial banks faced by an ever dynamic competitive environment are in constant pursuit of adoption, innovation and or invention of e-banking strategies while also expanding business beyond geographical boundaries to improve their competitiveness and achieve performance goals such as profit maximization, customer satisfaction, and firm growth among others.

This study was guided by Resource Based View, Technology Acceptance Model (TAM) and Porters Five Force Model. RBV predict that firm's performance would differ based on the development of unique resources into distinctive competencies that may become a source for competitive edge over a firm's rivals, (King et al, 2008).E-Banking infrastructure is a resource for multi channels marketing, leading to a larger market share and also a source for economic value gained from software copyright. Lastly, having a firm's management organized to take full advantage of e-banking channels may result into enhanced performance. TAM points out that users' decision to take up new technology is influenced by perceived usefulness (PU) and Perceived Ease of Use (PEoU).

Banks are engaging and seeking e-banking strategies with the perception of improving performance. Porters Five Force model propagated by Strategy guru, Porter (2001), identified how the internet affects each of the five competitive forces namely; competitor rivalry, consumer and supplier bargaining powers, new entrants and substitution threats. The impact of e-banking innovation strategy on each force is either positive or negative on the performance of a bank.

Kenyan commercial banks are incorporating e-banking strategy with the perception that it may be a tool to not only gain competitive edge over their rivals both locally and globally but also to enhance their firm specific performance goals. They use electronic banking with the intention of firm growth by expanding into new markets both locally and globally, increasing profitability, increasing market share, improved productivity, cost efficiency among other performance goals. This study was aimed at evaluating whether electronic banking innovation strategy has a positive effect on banks' performance in Kenya.

1.1.1 Concept of Innovation Strategy

According to King et al (2008), an organization's strategy is a broad based formula for accomplishing its mission, determining its goals and establishing plans and policies for accomplishing those goals. Innovation is considered to be a critical requirement for growth and profitability goals of organizations, Ngugi & Karina (2013).Innovation strategy is a specialized form of differentiation strategy, Peng (2009), and this strategy aims at delivering perceived valuable and unique products to its customers. Innovation strategy offers three advantages;

Firstly, it allows for sustainability in competitive advantage where product innovators are the first to get "monopoly profits" until competitors emerge. Secondly, with innovation viewed as a new way of doing business firms may create novel products and services offerings and a new market subsequently. Finally, innovation enhances entrepreneurship, especially in SMEs, Peng (2009).The innovative firms are subsequently inspired for more innovations as they gain financially.

Innovations and developments in ICT in 21st century has been the force behind transformation in electronic commerce and more specifically e-banking systems in the global market and Kenya today. According to Aduda & Kingoo (2012), the force behind the transformation of commercial banks innovation is information technologies. E-banking innovation can be either software or hardware based. Subramanian & Nilankanta (1996), in their study noted that an organization can adopt either technical innovativeness and or administrative innovativeness with each affecting various components of firm performance.

1.1.2 Electronic Banking Strategy

According to Joseph et al (2015), E-banking entails banking business conducted via the web as opposed to a physical bank location. With this strategy, users check their accounts, settle bills online, transfer funds and acquire loans electronically. Banks can offer e-banking either as a web enabled physical entity offering internet banking to its users above the traditional banking channels or establish virtual, branchless or internet only bank, Furst et al (2000).These types of banks engage in online-based banking activities that are majorly focused in stock trading over and above the traditional banking activities, (King et al, 2008).

According to Ngango (2015), e-banking services are accessed through electronic devices like PCs, PDAs, ATMs, kiosk, or mobile phones. Being a multi-channel delivery model, there exists various forms of e-banking. These include; mobile banking, agency banking, internet banking, telephone banking among others.

E-banking has been adopted globally for various reasons these include ; as a competitive strategy , Saunders & Cornet (2011),saving of time and money for users , cost efficiency and an opportunity for enhancing market share as wider customer base including those remotely acquired either within a country or internationally is gained,(Peng, 2009). Furst et al (2015), posed reasons for banks in adopting internet banking in the USA. Key factors identified include holding company membership, urban location, efficiency, higher fixed cost to net operating income and non-interest income among others.

E-banking strategy is used by commercial banks in Kenya and globally as a strategy for achieving various goals such firm growth, profitability, cost minimization, among others. Electronic banking strategy can be viewed as a product related geographical diversification strategy, defined by Peng (2009), where a firm enters existing market with new products markets or processes. Ngango (2015) identifies types of electronic banking strategy platforms used namely ATMs, online banking, telephone banking, mobile banking and electronic cards.

In Kenya, agency banking is also used to support this strategy. E- Banking is expected to grow over time, less in tandem with proliferating electronic commerce growth. According to Jenkins (2006), e-banking in developing countries takes place at a slower pace than their developed economies counterparts due to higher availability of computers and easy access to the internet.

Fox & Beier (2006) are of the view that those with more disposable income are more likely to take advantage of the perks of online banking. With the advent of increased mobile usage, e-banking and specifically mobile banking is becoming more popular. This is also the case with small businesses, educated middle class and those with greater disposable income.

1.1.3 Organizational Performance

Performance provides the strongest linkage to organizational strategic goals measured by financial and non-financial indicators. According to Ngango (2015), organizational performance of firms relates to three result measures that include performance of financial indicators, product market and return on shareholders (such as EVA) performance. Hunjak & Drago (2001) outlined CAMELS rating as an appropriate method for evaluating a bank's performance. CAMELS system has five components, mentioned below, that are evaluated to rate performance of a bank. According to Wachira (2010),CAMELS ratings systems is a useful tool for identifying how well a bank is in terms of management ,earnings and cost of operations.

CAMEL stands for Capital Adequacy(C), Asset Quality(A), Management Efficiency(M), Earnings Ability(E), Liquidity(L) and sensitivity to risk(S) ,(Ongore & Kusa, 2013). Their study also noted that banks performance can be affected by a) bank specific variables influenced by internal decisions of a firm though its board of directors and management, and b) external or macroeconomic variables which are sector wide factors beyond control of and affect the performance of an organization. The authors note that this approach is most appropriate for measuring performance resulting from bank specific factors.

The authors have come up with ratios that would measure CAMEL components. C is obtainable through CAR. A can be measured through loans that are not performing to total loans ratio. To measure E, profits on operations to total income or operating expenses to total assets ratio is used as management determines the level of operating expenses. E is measurable through profitability ratio Return on Assets (ROA), (Ngango 2015). For the purpose of this study, profit before tax (PBT) is used to assess the Earnings part of the CAMEL model. These amounts will be obtained from CBK annual published reports. Liquidity management is measured by customer deposits to total assets and total loans to total customer deposits.

1.1.4 Electronic Banking Strategy and Organizational Performance

Various authors have varied views on performance and electronic commerce; Ansoff (1998) noted optimization of firm's results is achieved on condition that they have aggressive strategic activities that are in line with variability of the external surroundings .It also points out that these firms must possess resources that support each other for this goal to be realized. Bloch et al (1996) noted that e-commerce can provide a myriad of benefits to an organization, these include; improving promotion of products, newer channels for first hand savings, reduction in time required for marketing, delivering to customer demands improved image of the firm and goods and services Other benefits include technological and organizational learning, new product capabilities and a new business model. All these can lead to organizational performance improvement.

Numerous studies have pointed out the possible outcomes of e- banking and their impact on performance. According to King et al (2008), use of electronic transactions boosts efficiency through several methods therefore increasing market size and also improving product positioning in comparison with its alternatives. According to Ngango (2015), e-banking can provide strong tools for strategies and tactics which when appropriately applied creates an environment for gaining strength in competitiveness.

According to PWC (2016), in the recent periods, Kenyan banking sector has experienced growth in asset base, deposit taking, profits and offering of products. They note that that this has been made possible by banking industry pursuing strategies for expansion within the country and EAC at large. Also indeed are automating activities for numerous bank services .Other factors are attributed to complexity in customer needs rather than the usual "off-the-shelf" banking products.

1.1.5 Banking Industry in Kenya

As per CBK (2016), Kenya has 42 licensed commercial banks. Three of the commercial banks; Dubai, Chase and Imperial banks are currently under receivership. Kenya Government holds controlling stakes of 3 banks. Privately owned banks are 39 comprising of 14 foreign owned and 25 locally owned banks, having their controlling shareholders domiciled in Kenya. A commercial bank is a company that engages in activities of banking within Kenya, however, it does not include the CBK. Playing a crucial role in the Kenya and financial industry at large, heavy scrutiny is placed on these banks to ensure their compliance to the regulatory environment .This industry is governed by CBK Act (PGs), (CBK, 2016). PGs are mandated by the CBK, NSE, and CMA.

Other regulatory frameworks include Company's Act and Banking Act, (PWC, 2016) and accounting standards such as International Financial Reporting Standards (IFRSs). Commercial banks are required to submit compliance and financial reporting on strict frequencies to meet regulatory frameworks including Banking Act, Company's Act, CBK Act, Prudential Guidelines (PGs) and CMA.CBK has a special division, Banking Supervision department whose mission is to support its mandate is to ensure that the banks are sufficiently liquid, solvent and are function properly in the market as well as promote and maintain the safety, soundness and integrity of the Kenyan banking system by implementing policy framework in line with international practice for bank supervision and regulation.

Players in this industry have experienced competition over the last few years resulting from increased innovation among players and new entrants into the market, PWC (2016). As per CBK reports review (CBK, 2015), there was notable improvement in the results for banks in Kenya where total assets stood at Kshs. 3.65 trillion, loans in gross terms were 2.32 trillion, deposits were Kshs. 2.57 trillion. PBT of Kshs. 114.22 billion was realized for 9 months to 30th September 2015. In the same period, the number of customer accounts with respect to deposits and loan accounts stood at Kshs.33, 291,000 and 7,016,378 respectively (CBK, 2015).

1.1.6 Commercial Banks in Kenya

Commercial banks within Kenya have come together under the Kenyan Banker's Association (KBA), which serves as a lobby for the banking sector's interest, PWC (2016).As per KBA (2016), banks currently operating in Kenya have diverse products targeting specific market segments. Products and services offered in Kenya include loans, overdrafts, mortgages, trade finance, SME and business banking.

Other services include; corporate services, foreign exchange services, financial management advice, safe storage of valuables, mobile banking, Sharia compliant banking and personal banking. A research done by Bonface & Ambrose (2015), indicate that mobile companies are highly aggressive in technology that is now enabling them offer bank related products to Kenyans that subsequently pose competitive threat to banks. They have kept the technological bar quite high and are now offering banking services to the Kenyan population subsequently causing significant threat on commercial banks. 65,000 agents of mobile money like M-PESA are offered by Safaricom.The shops engaged by the competitors have the advantage of wide presentation in urban and rural Kenya.

The Innovative banks have partnered with mobile money companies to employ mobile solutions for their customers, allowing for efficient service delivery and deeper relationships with customers without the geographic limitations of a physical branch network. Kagendo (2015) notes that some of the e-banking strategies adopted by banks in Kenya include online banking, ATM infrastructure and mobile banking. PWC (2016) conclusions were that e-banking, advertising through social media and innovations can also contribute to profitability and growth of commercial banks.

1.2 Research Problem

Commercial banks in Kenya and the global market at large are using e-banking strategy to achieve their set goals. This is supported by PWC (2016) which pointed out that to remain competitive in the Kenyan banking sector, a number of banks have adopted internet banking to support their strategies and ultimately achieve their set firm goals. E-banking, viewed as a geographical diversification strategy, is expected to allow for entries into new geographical markets.

Also expected is increase in market share, industry competition and improved performance of these banks. Banks in Kenya have equally embraced E-banking strategies to improve performance. Many commercial banks choose e-banking as a strategic option to achieve their long term goals in the dynamic market (Kagendo, 2015). This study concludes that E-Banking strategies should be more than ICT infrastructures, efficiency and quality, but also client value addition through the e-banking strategies. According to King et al (2008), insufficient statistics exist on data as well as empirical studies with regard to e-commerce because this field is still new.

The concept of e-banking strategy and its impact on performance of commercial banks has received varied interpretations and findings among various authors, researchers and academia. Findings indicate that the impact of IT investments in banking is not always positive but heterogeneous. It's also noted that a bank's adoption of e-banking strategy may have an impact on an organization based on whether it is software or hardware based, whether it's in-house or outsourced as noted by, Beccalli (2007). There are also indications that there are factors that may affect effectiveness of e-banking strategy on the performance of an organization as pointed out by Ngango (2015).

Kagendo, 2015, concludes that E-banking strategies should be more than ICT infrastructures, efficiency and quality, but also client value addition through the e-banking strategies. With regard to effects of e- banking on commercial banks, thorough quantitative analysis on the impact of e-banking needs to be performed. Researchers Hernando & Nieto (2004) argued that with the wide usage of that internet limited analysis of quantitative data is available to evaluate its effects on performance of banks. Their study also suggests longitudinal studies to assess impact of e-banking on bank performance over time.

Review of research by various scholars indicates that limited knowledge exists on the proponents contributing to effectiveness of electronic banking and subsequently their effect on the performance of banks operating in the Kenya. Kolodinsky et al (2004) in their study explored e-banking adoption factors and their variability over time in the US economy. Usage of e-banking changed over time. However, there was no change on factors impacting the adoption of e-banking. The researchers noted inconsistencies on the effects of e-banking on performance of organizations. They also note that numerous studies support RBV (capabilities unique to firms) being determining factors for performance of participants in an industry.

This is further supported by Aduda and Kingoo (2012) .They argue that although potentially ICT and E-commerce contributes towards performance of firms, researchers are debating on whether it still contributes positively to a firm. These observations call for a replicative contextual research with regards to drivers or mitigations of electronic banking effectiveness.

E-banking exists in a highly turbulent internal and external environmental context. As noted by Hernando & Nieto (2004), it takes time for internet banking to affect the performance of banks due to various factors. The complex dynamics over time of both the internal and organizational environment under which the banking sector operates may have an impact on the effectiveness of performance of banks engaging in banking through electronic channels. The context under which an organization exists affects its strategic management approach. Current environment within which commercial banks in Kenya operate might have significance on its impact on a bank's business performance.

Management of a firm is sensitive to context that comprises the internal and external environment that include economic, socio-cultural, political and legal framework .The use of ICT to support strategies for achieving firm goals is also sensitive to the present context. It is therefore important for bankers, bank regulators, academia and researchers to understand how e-banking affects the financial performance of banks, (Mwangi, 2014).

Numerous studies that have focused on how e-banking affect bank performance have been restricted to specific points in time and place identified by the researchers .These studies have been country or regional specific or specifically case studies for the chosen years of study. In conclusion, and after considering the research gaps identified from the effect of time, heterogeneous findings from various empirical studies, contextual and the dynamic environment within which commercial banks operate. This begs the research question; What is the effect of electronic banking strategy on the performance of commercial banks in Kenya?

1.3 Research Objective

The objective of this study was to determine the effect of electronic banking as innovation strategy on the performance of commercial banks in Kenya.

1.4 Value of the Study

This study sought to establish the effects of e-banking strategy on the performance of commercial banks in Kenya. The results of the study are aimed at providing useful information to relevant policy holders, academicians and managers interested in e-banking. To start with, the findings of this study are expected to provide valuable information to policy holders such as the Government of Kenya, CBK and CMA.

Economic and other policy makers need solid a analytical foundation to understand e-banking's impact on policies of the economy and the industry especially with ease in which capital flight has potential to move between banks and across borders in an electronic set up creating great response for economic policy management, Shaetcher & Nsouli (2002). The findings will assist in formulating, implementing and evaluating policies affecting the banking industry and the economy of Kenya. For example reassessment of macroeconomic management policies, banking supervision and risk management frameworks that may be set up for commercial banks.

Secondly, for academicians, this study will contribute to knowledge building by asserting further, available theoretical and empirical material or literature on the topic of study which is e-banking and its effects on bank performance. The results of the study will also contribute towards identification of factors affecting the effectiveness of electronic banking strategy and e-commerce generally. The results of the study will also propel academic researchers towards identification of research gaps that would then motivate them towards conducting replicative or further research related to the topic of this study.

Lastly, as regards management and decision makers in the banking industry, will gain guidance on reality of general perceptions that e-banking will automatically bring benefits to firm's customers and other users of e-banking facilities. A study such as this would provide findings that are measurable and enable managers assess whether their investments in electronic banking are paying off, considering that banks are committing significant cash outlays to finance investments in IT and internet banking, Mwangi (2014). The findings will provide information on overcoming challenges and optimization of effectiveness of e- banking innovation strategy within their banks.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter analyzes literature available on e-banking and its effects on commercial bank performance. The first part of this chapter will analyze scholarly work on theoretical foundations related to e-commerce, e-banking and performance. The second part will review empirical studies related to the topic of this study.

2.2 Theoretical Foundation

This section identifies theories and models supporting the effects of implementing e-commerce and specifically e-banking on the performance of an organization. The overarching theory in this study is Resource Based View (RBV) and is supported by two models namely Technology Acceptance Model and Porter's Five Force Model.

2.2.1 Resource Based View

RBV proposes that resources and capabilities specific to a firm greatly determine its performance, (King et al, 2008); Where, firms differ in performance based on unique bundles of resources from which each firm develops competences that are a source for competitive advantage. RBV argue that firms that have structures and systems that are superior have higher profitability from lowered costs or improvement in quality of product (or its performance) and not from investing strategically.

Banks possessing innovative e-banking related infrastructure, software and hardware copyrights can accrue competitiveness over their rivals from these through offering of superior products and or services to its customers. King et al (2008) noted that for a diversification strategy tool to have a positive impact in a firm, the VRIO (Value, Rarity, Imitability and Organization) framework must be considered;

E-banking viewed as a geographical diversification tool creates value (V) of a larger market share. This is through entities entering new geographic markets. As regards to Rarity and Imitability, performance of these banks is improved from economic values gained following patenting of their e-banking related innovations surrounded by uniqueness and rare skills that are hard to imitate. Lastly, with regard to organization (O), the success of implementing e-banking for diversification depends on a firm's ability to organize itself in taking full advantage of its returns and at the same time reducing costs associated with it.

2.2.2 Technology Acceptance Model (TAM)

Several studies on e-banking are based on TAM proposed by Fred Davis in 1985, Legris et al (2003). Originally, the model predicts acceptance and usage of information technology presented at work. TAM predicts that users in a firm will be influenced by two factors when they are presented with new IT. This will also affect their decision on whether to adopt the technology and when to use it. These first factor includes PU (Perceived usefulness); which is belief that one's performance in a job will be improved when presented with a particular .The Second factor, PEoU (Perceived ease of use) means the level at which a user believes that that system would be effort free.

Although TAM was generally accepted by researchers as a sound method for understanding and predicting user behaviour towards information systems, subsequent investigations and writings identified a number of weaknesses in the TAM model, Lule (2011). As per Legris (2003), results of empirical research relying on TAM reveal inconsistency in outcomes of findings posing the question on whether there are factors left outside the model that have not been considered.

Kinyua (2014) expectations were that e-banking services adoption would contribute positively towards profits of banks. Therefore use of e-banking technology may be perceived by the users to yield some level of usefulness and easiness or efficiency in usage. This study will provide some evidence to approve or disprove this theory.

2.2.3 Porters Five Force Model

Strategy guru, Porter (2001) poses that any contemporary strategy setting process must include the internet where companies should use it to distinguish themselves by viewing it as being complementary to traditions in competition. Porter cautions that internet may not automatically become a blessing to a firm, as it tends to alter structures while dampening profits in the industry as a whole. He also notes that it tends to level practices in businesses thereby downgrading advantages that would have been gained in operations.

He identified positive and negative ways that IT impacts each of the five forces of competitiveness. King et al (2008), cautions variability of impact of each of the five forces and that industry players should not generally conclude about long term profits in the industry on application of internet in their businesses .Porter's analysis of effects of internet on the factors and performance thereof can be applied on banks in the following ways;

Firstly with bargaining power of suppliers, electronic banking provides digital markets through new channels for banks in reaching users, reduction in strength of mediating firms and shifts power to banks that use it by reducing entry barriers and saturation of competitors in the value chain. Secondly, bargaining power of consumers improves by eliminating powerful traditional channels, shifting bargaining power and reducing switching costs and therefore attracting customer loyalty.

Thirdly, with substitution threat, the internet by improving industry efficiency ensures market size expands and new substitution threats are created as users access alternative banking products. This is evidenced from Kenyan banks facing rivalry from mobile money companies where mobile users easily query bank balances, acquire credit facilities and pay for goods & services, Bonface & Ambrose (2015). Fourthly, e-banking reduces entry barriers like requirements for staff force, accessing physical channels and assets leading to reduced costs of operating a physical bank.

Finally, with existence of competitor rivalry, e-banking diminishes competitor variations within players in the banking industry. This is because it is hard to maintain proprietary rights for new product and service as it shifts competition to pricing, and subsequently widening geographical market. This finally increases competitors' strength and at the same time lowering variable cost relative to fixed cost, further increasing pressure for price discounting.

2.3 Electronic Banking Strategy and Performance of Commercial Banks

Empirical studies exist in literature with regard to e-banking and their impact on bank performance. These studies have a wide reach spanning global, regional and Kenyan boundaries. This section analyzes the studies, it will also identify research gaps and recommendations thereon.

Beccalli (2007), with a sample of 737 banks in Europe, assessed the influence of investment in the following variables on performance of banks; software and IT based hardware and services, It was noted that banks place large investments in IT yet little is found on the relations between total investment in IT and improvement of profits or efficiency therefore generating a profitability paradox.

From the study, each variable of investments in IT namely; hardware or software and or services bore variations on the performance of these banks. Outsourcing of IT services, for example with regard to consultations, implementation, training and supporting service generated positive effects on profitability and efficiency. The study found that acquiring IT hardware and software to dampen profits in these banks. In conclusion, this study poses the need for an analysis of whether total acquisition or outsourcing of banking infrastructure have a bearing on e-banking impact on the performance of a bank.

Furst et al (2000) performed a study with main focus being addressing the gaps existing in the knowledge about internet banking in the USA. From the, survey 20% of the banks did internet banking. Internet banking institutions performed better in profits and efficiency as compared to those pursuing the internet activities. It was also noted that internet banking firms garnered higher earnings from activities that were not traditionally banking as they obtained close to 50% more earnings from non interest income sources. The study also noted that fewer banks subscribing to e-banking currently experienced more success in internet banking considering that they offer smaller number of their customer base with this delivery channel. This point in mind, rendered it hard for financial institutions and their analyst to ascertain whether truly internet banking play a role in bank performance.

Rai & Allen (2007), observed 424 USA community banks that were first time adopters in transacting on the web in later part of 1990s.The study analyzed changes in results of financials from the years 1999-2001 with regard adopters and 5,175 branching only banks. Their findings were that adoption of the internet improves profits mainly by increasing incomes from charges resulting from deposit services.

Rai & Allen (2007) also suggested that early adopters of internet banking and their customers used the internet as a complementary rather than a substitution for a bank with physical location. Their study however, observed lower findings on the effect of the internet on loan portfolio mixes as a result of adopting internet banking. This called for an in depth study of the impact of e-banking on the loan portfolio mix of Kenyan banks.

Hernando & Nieto (2004) in their study used a sample of 72 commercial banks operating in Spain. The aim of the study was identifying and estimating effects of web based banking on performance of the banks for years 1994–2002. The study came up with the following findings; a) The impact of web based banking appear in long term b)It's adoption results into smooth reduction in cost of overheads; (Particularly, staff, marketing and IT).c) The effect is statistically significant after 11/2 years following implementation of this banking delivery channel. d) The lowered costs translated into improved banks' profit becoming significant after 11/2 years in terns of ROA(Return on Assets) and in subsequent 3 years in terms of ROE(Return on Equity). The study conclusions were that internet is to be viewed as a complementary as opposed to a substitution for branches with a physical location.

Ngango (2015), with a purpose of examining the contribution of E-banking towards performance of banking institutions in Rwanda, found that e-banking plays a great role in financial outcome of Rwandan banks . The findings revealed that banks are using various systems for e-banking that include ATMs, Pay Direct, mobile banking, electronic cards and cheques that have a great impact on bank performance as they increase profitability, ROA,ROE, return on loans, improves bank management quality, increases bank asset and promotes bank growth and expansion.

However, the study pointed out challenges that banks face when implementing electronic banking in Rwanda and therefore posing a threat to banking performance. These include (a) Internet banking outages that disrupt online banking services. (b) Internet coverage limitations causing a lower market scope to internet banking facility. (c) Limitations on customers' skills in operating e-banking facilities. The last challenge include (d) Security risks as the Internet banking systems can be accessed by hackers posing a threat customers confidentiality and bank losses.

Aduda & Kingoo (2012) while analyzing the inter-relationship between e- banking and financial performance of banks in Kenya, indicated existence of a strong and significant marginal effect of investments in e-banking on ROA. The researchers' conclusion was that by bringing customers closer, banks were making banking transaction easier hence increasing their performance. E-banking has also enhanced the industry by making it more productive, while improving workers effectiveness and efficiency. Observations and recommendations made by the study include institution of governmental policy to govern banking industry ICT risk management framework in view of ICT related challenges that banks face such as laundering of money, risk of fraud, security concerns and identification of ICT changes The authors call for review of current and near future ICT advances that may affect the banking industry and the payment systems.

The study by Bonface and Ambrose (2015) was driven by examinations of four factors and their impact on financial performance of commercial banks. These factors included cost of m-banking services, security surrounding m-banking system security, speed of m-banking service speed and skills levels required. Results of the study were that performance of banks in Kenya was increased through rise in mobile operation skills.

It was also noted that it increased as a result of fair pricing, a secure financial service and increased speed at delivering e-banking services. It was also noted efficiency and confidence and therefore public trust was brought about by implementing mobile banking services. The author point out that fair m-banking pricing should be considered so as to create level playing for all participants in the industry while enhancing competition and diminishing exploitation of customer.

Kagendo (2015) on determining the influence of e-banking strategy on bank performance within Kenya found that e-banking infrastructure; efficiency and quality strategies have a strong positive relationship and enhance bank performance. The study concluded that banks should enhance mechanisms for e-banking strategies that support client value addition. The study notes that banks in Kenya use this tool to achieve better efficiencies for banks, in operations and cost control. The study recommends that banks should enhance complementary resources such as human capital, ICT training, organizational structure integration and innovation to enable the banks gain more efficiently from e-banking strategies.

2.4 Empirical Studies and Research Gaps

The relationship between e- banking and performance of organizations has received much attention in the global and local scene. To determine whether e-banking has positive effect on bank performance studies Western countries have been performed in hundreds. The results of these studies point out that, electronic-commerce and more specifically electronic banking could positively contribute to performance of an organization and specifically the banking industry.

As pointed out by Furst et al (2000), banks which are successful in offering internet banking account for a relatively small share of their customer base with this method ; They point out the difficulty with which analysts in the industry and banking fraternity have in determining whether e-banking has had a significant impact on performance of banks. From the analysis it is evident that e-banking can be viewed as a strategic tool, a resource and a service delivery tool that may or may not increase performance of a firm.

Kingoo & Aduda (2012) further supports this notion by noting that despite the potential for ICT and e-commerce, there is debate about whether and how their adoption improves bank performance. From the analysis of theoretical and empirical evidences above, numerous studies suggest firm performance is greatly determined by unique firm capabilities. Kagendo (2015) notes that e-banking strategies should be more than ICT infrastructures, efficiency considering client value addition. This is further supported by Bonface and Ambrose (2015) who noted that banks in Kenya are adopting mobile money technology within their operations. The authors noted that m-banking services issues to be reviewed include costs, security systems, and service speed and skill requirement to ascertain their impact on bank performances.

From the global and local studies, it is evident that e-banking infrastructure ownership plays a role in determining whether e-banking will have a positive effect on bank's performance. This question should be raised as electronic banking exists in and adapts to a highly turbulent information technology environment. Review of existing literature also suggests that more quantitative longitudinal research need to be conducted to ascertain the effect of e-banking on performance over period of time.

They also advise analysis of factors that may have an impact on the effectiveness of electronic banking in contributing towards performance of commercial banks. An overview of the overall findings of empirical studies and theories poses the research question for this study. This being whether e-banking strategy has effect on performance of the banks besides substantial investments in internet banking.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the research methodology used for the study. The chapter is divided into four sections. These include; research design, population of the study, data collection procedures and data analysis.

3.2 Research Design

This study adopted a descriptive survey research design that was cross-sectional in approach. Mugenda & Mugenda (2003) describes this type of research design as a systematic empirical enquiring into which researchers have no direct control of independent variables as events have occurred already and is not possible be tampered with. This design is also less expensive, requires less time and can be used to study several variables.

This design is also preferred as it makes enough provision for protection against bias and maximizes reliability, Bonface & Ambrose (2015).The primary purpose of this study is to analyze effects of electronic banking on the performance of banks in Kenya and this research design is found as a suitable research design to describe the causal relationship that exist between the dependent and independent variables.

3.3 Population of the Study

According to Mugenda & Mugenda (1999), a population is a complete set of individuals, cases or objects with some common observable characteristics. The target Population comprises all banks in Kenya. A comprehensive list of these banks is listed on Appendix II.

This study targeted all the 42 commercial banks registered by the CBK as at June 2016. A sampling survey was not considered necessary as the study population is small. A census survey of all the commercial banks registered by the CBK was therefore undertaken for the purpose of this study.

3.4 Data Collection Procedures

Data collection procedures include selection of data collection instruments, reliability test and validity tests discussed here under;

3.4.1 Data Collection Instrument

Data was obtained from primary sources and secondary sources. Primary data sources were obtained by way of questionnaires. A drop and pick system was then administered on the questionnaires on respondents stationed in their headquarters. The questionnaires were distributed to members of top management team or their proxies with a particular bias on those in charge with finance and strategic management of the commercial banks. The returned responses were then analyzed to inform findings of this study.

Secondary data was then used in analysis of variables in line with the objective of this study. The secondary data was gathered from Bank Supervision and Banking Sector Reports that are released on an annual basis by the Central Bank of Kenya for the years 2009 to year 2015, (CBK, 2016). The study also made use of annual and other reports issued by the banks in Kenya to support study findings.

3.4.2 Reliability Test

According to Heffner (2014), reliability has the same meaning as consistency in giving results for measuring devices such as an observation, test or survey. The questionnaire will be pre tested to ensure its reliability in delivering consistent results. To ascertain reliability this study adopted a Cronbach Alpha with a threshold of 0.7

Reliability cut off for this study was established by pre testing a sample of five random questionnaires for banks headquartered in Nairobi. This cut off procedure was done to obtain comfort that the research instrument measured what it was supposed to measure while clarifying that questions raised were sufficient in generating answers for this study. Testing the questionnaires for reliability revealed a Cronbach Alpha of 0.9 that is acceptable for this study, meaning the questions in questionnaires measuring the content of this study were appropriate and well specified.

3.4.3 Validity Test

Validity of a test is important when using a test or measuring device as part of data collection process. According to Heffner (2014), validity refers to the degree in which a test or other measuring device truly measures what it's intended to measure. Data collection device, the questionnaire, was checked before processing the final results.

This helps establish the reliability of the tools used in data collection process. This was done by pre-testing questionnaires. In the pre test procedures, a random sample of 5 respondents was drawn to clarify the questions and statements in the questionnaires. The respondents were then asked to make comments on any ambiguous or unclear questions during the pre testing stage. These corrections were later implemented in subsequent questionnaires.

3.5 Data Analysis

Data collected from this research was analyzed through descriptive and inferential statistics. Data was collected, sorted, cleaned and organized for analysis in an MS Excel spreadsheet. SPSS software was subsequently utilized for data analysis for each variable of study. The data was then presented using graphs and tables, for clear and easy understanding of the phenomenon studied. Regression analysis was subsequently used on the data set to determine the effect of e-banking strategy as innovation strategy on the performance of commercial banks. The following regression analysis model was then used;

$$\mathbf{Y= \beta_0+\beta_1 X_1 +\beta_2 X_2 +\beta_3 X_3+ \varepsilon}$$

Where;

Y -Estimated value of dependent variable, performance.

$\boldsymbol{\beta_0}$–Regression co-efficient $\boldsymbol{\varepsilon}$ -Error term

$\boldsymbol{\beta_1, \beta_2, \beta_3}$- Slope coefficients whose sign depict the relationship between dependent variable namely performance and independent variable e-banking innovation strategy proxied by, electronic cards($\mathbf{X_1}$),variable number of point of sale terminals ($\mathbf{X_2}$) and number of ATMS ($\mathbf{X_3}$) respectively.

Performance was measured through profit before tax and respondent assessment of CAMELS approach components of capital adequacy, asset quality, management efficiency, earnings, sensitivity to market risk and liquidity. Pearson Product Moment Correlation Coefficients (**βi**) and Coefficient of determination was then calculated to determine causality relationship and strength between e–banking innovation strategy proxies and performance respectively.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSIONS

4.1 Introduction

Chapter four presents research data, their analysis and interpretation that will subsequently inform the objective of this research which was to establish the effects of e-banking as an innovation strategy on performance of commercial banks in Kenya.This section discusses in detail; demographic data, e-strategy tools used performance of these banks, descriptive analysis and finally interpretations of findings and discussions. The results of the findings were obtained from primary data collected through questionnaires. Raw data collected was inputted into Ms. Excel, sorted and subsequently analyzed through regression analysis model by use of SPSS for the secondary data collected from CBK reports.

4.2 Ownership Structure of Commercial Banks in Kenya

Figure 4.1, shows ownership structure of commercial banks operating in Kenya.

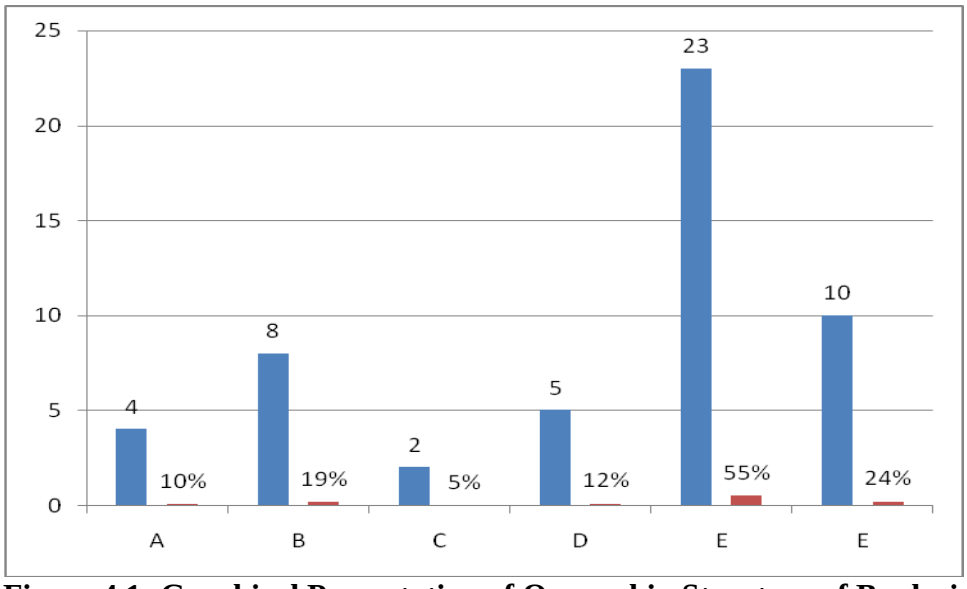

Figure 4.1: Graphical Presentation of Ownership Structure of Banks in Kenya

Data Source:Central Bank of Kenya (2016)

As per Figure 4.1, A represents 4 foreign owned not locally incorporated banks operating in Kenya which represents 10% of the banking population within Kenya. Those that are foreign owned but locally incorporated institutions and partly owned by locals, symbolized by column B are 8 in number and account for 19% of all banks operating in Kenya. Column C represents 2 banks with 5% representing foreign owned but locally incorporated institutions. Column D shows foreign owned but locally incorporated institutions that have government participation. In conclusion column E shows that majority of the banks in Kenya 23 in total are fully and locally owned accounting for 55%.While those that are quoted at the Nairobi Stock Exchange (NSE) account for 24% in total of all banks.

4.2 Response Rate

Questionnaires were administered through a drop and pick fashion for most respondents stationed in their bank's headquarters. This was to enable collection of primary data for a target population of 42 banks operating in Kenya. Results of responses are demonstrated in Table 4.1;

Table 4.1 Response Rate

	Frequency	**Percentage**
Response	20	48%
Non-Response	22	52%
Total	**42**	**100%**

Source: Research Data (2016)

From Table 4.1 of the 42 questionnaires administered, 20 were fully filled and returned. This accounted for a total of 48% of total respondents. This is a fair representation of all commercial banks domiciled in Kenya.

4.3 Demographic Data

Demographic data was collected for purposes of determining the age of respondents, their educational and experience level in banking, their role in their respective banks and period when e-banking was adopted within the banks. All these information forms the underlying support to establish the knowledge and experience level of the respondent banking professionals and their competency in assessment of e-banking innovation strategy as a tool for improving bank performance. The data also informs on the age/maturity of the banks.

4.3.1 Gender of Respondents

Respondents of the banks were asked to indicate their gender. The gender specifications were either male or female on the questionnaires administered. The findings from the analysis of the questionnaires with regard to distribution of gender of the respondents are indicated in Table 4.2;

Table 4.2: Distribution of Gender of Respondents.

Gender	Frequency	Percentage
Male	18	90%
Female	2	10%
Total	**20**	**100%**

Source: Research Data (2016)

Table 4.2, shows that 90 % of the respondents were males while 10 % were females. This indicates more male than female respondents. Representation by both genders is fair however there is an indication of more male employees than females in this industry.

4.3.2 Age of Respondents

On administering the questionnaires, the respondents were asked to specify their age category. This ranged from years 20-30 years, 31 to 40, 41-50 and over 51 years. Summary of findings for respondents with regard to age distribution of the respondents are presented in Table 4.3;

Table 4.3: Respondents Age Distribution

Age	Frequency	Percentage
20-30 Years	9	45%
31-40 Years	7	35%
41-50>Years	2	10%
Over 50 Years	2	10%
Total	**20**	**100%**

Source: Research Data (2016)

Analysis of the distribution of age of the respondents in Table 4.3, indicate that those aged between 20 and 30 years formed 45% of the respondents. Those between 31 and 40 years were 35 % of respondents, while those between 41 and 50 years formed 10% of the respondents and finally those above 51 years made up 10% of the respondents. The results indicate that there was a fair distribution of all ages as each age bracket was fairly represented. Respondents above 31 years formed a majority 55% of the total respondents, meaning a more mature feedback for the study.

4.3.3 Level of Education

Respondents in this study were sought to establish their educational achievements. This ranged from degree level, postgraduate level, diplomas and others. Findings from analysis of questionnaires administered with regard to education level distribution are shown in Table 4.4;

Table 4.4: Education Level of Respondents

Education level	Frequency	Percentage
Degree	11	55%
Postgraduate	7	35%
Diplomas	1	5%
Other	1	5%
Total	**20**	**100%**

Source: Research Data (2016)

Analysis of Table 4.4, demonstrates that degree holders formed 55% of the respondents while those with postgraduate degrees accounted for 35% of the respondents. Those with diplomas formed 5% and those with other certifications made up 5% of the respondents. In total, degree and postgraduate holders accounted for 90% of the respondents and could therefore be relied upon to read, understand and interpret questionnaires administered while subsequently giving appropriate feedback.

4.3.4 Respondents Experience in Banking

The respondents were asked to specify their experience levels within the banking profession. This ranged from years 1-5, 6-10, 11-15 and above 15years. Findings from analysis of questionnaires administered are demonstrated in Table 4.5.

Table 4.5: Respondent Experience in Banking

Years of experience in banking	Frequency	Percentage
1 to 5 Years	8	40%
6-10 Years	5	25%
11-15 Years	4	20%
Above 15 Years	3	15%
Total	**20**	**100%**

Source: Research Data (2016)

Table 4.5 demonstrate respondents with over 15 years' experience in banking account for 15% of the respondents while those with between 11 and 15 years form 20% of the respondents. Those with 6 to 10 years form 25% and finally those between 1 and 5 years account for 40% of the respondents. The respondents experience level can be relied upon to form constructive feedback for the study as they form a majority 60% cumulatively of those with over 5 years of banking experience.

4.3.5 Role of Respondent in the Bank

Respondents were asked to indicate their role within their banks on administration of the questionnaires. This was an open ended question. Findings of the study with regard to role of respondents in their bank are displayed in Table 4.6.

Table 4.6: Role of Respondent in the bank

Role in Bank	Frequency	Percentage
Customer Service	2	10%
E-Banking	5	25%
Finance & Auditing	6	30%
Strategic Management	1	5%
Operations	6	30%
Total	**20**	**100%**

Source: Research Data (2016)

Table 4.6 shows the role of respondents in their banks. Those in customer service accounted for 10%, those in e-banking roles formed 25% of the respondents. Finance and auditing formed 30% of the respondents. Those in charge of strategic management accounted for 5% while those in operations formed 30% of the respondents**.** Majority of the respondents accounting for 70% in total are in finance, auditing, operations followed by e-banking and are knowledgeable of their bank's business as a whole. With this in mind their feedback is reliable to form the basis of findings for this study.

4.3.6 Age of the Bank

Respondents in this study were asked to indicate age of their banks. This ranged from below 5 years, 5-10 years and over 10 years. Findings from analysis of questionnaires administered with regard to age or maturity level distribution are shown in Table 4.7;

Table 4.7: Age of Bank

Bank's Age	Frequency	Percentage
< 5 Years	0	0
5-10Years	4	20%
> 10Years	16	80%
Total	**20**	**100%**

Source: Research Data (2016)

From Table 4.7, banks with over ten years of operations form 80% while those between 5 and 10 years of age in existence are 20 % of the total respondents' banks. This indicates a strong maturity level of the banks being reviewed.

4.3.7 Period of E-banking Application by the Banks

Respondents in this study were sought to specify the period of e-banking application by their banks. This ranged from below 5years, 5-10 years and above ten years. Findings from analysis of questionnaires administered with regard to e-banking application by commercial banks in Kenya are as follows;

Table 4.8: Period of e-banking adoption by the banks.

e-banking adoption period	Frequency	Percentage
< 5 Years	6	30%
5-10Years	7	35%
> 10Years	5	25%
Not Implemented	2	10%
Total	**20**	**100%**

Source: Research Data (2016)

The Table 4.8 indicates that commercial banks with over ten year's adoption of e-banking tools account for 25% of the total respondent banks. Those with between 5 and 10 years of adoption form 35% and those with less than 5 years implementation form 30% of the total. Finally, 10% of commercial banks have not implemented electronic banking strategy tools. In conclusion there is a strong e-banking strategy application with those above 10 years accounting for 60% of all the respondent banks.

4.4 Electronic Banking Strategy Tools used by the Banks

This section is discussed in two main parts .The first part provides information on extent of application of electronic banking strategy .The second part presents findings of electronic banking tools used by commercial banks in Kenya.;

4.4.1 Application of E-banking Strategy Tools in the Bank

Respondents in this study were asked to identify e-banking strategy tools implemented by their banks. Choices presented included agency banking, internet banking, ATMS, mobile banking and POS terminals. Findings from analysis of questionnaires administered identified e-banking tools used by commercial banks in Kenya demonstrated in Table 4.9 as follows;

Table 4.9: Application of E-banking Tools in the Banks in Kenya

E-banking tools by the banks	Frequency			Percentage		
	Yes	No	Total	Yes	No	Total
Agency Banking	15	5	20	75%	25%	100%
ATMs	17	3	20	85%	15%	100%
Internet Banking	15	5	20	75%	25%	100%
Mobile Banking	15	5	20	75%	25%	100%
Merchant/POS Terminals	14	6	20	70%	30%	100%

Source: Research Data (2016)

Table 4.9 shows respondents of commercial banks in Kenya have noted their bank's adoption rate of 75% each of electronic banks tools. These tools are agency banking, internet banking and mobile banking .While those that that have adopted ATMs account for 85% of the total. Those that have adopted POS or merchant terminals account for 70% of the respondent banks. This means a strong adoption of the e-banking tools by the banks in Kenya by at least 75% of all respondents for each type of e-banking strategy tools.

4.4.2 Extent of Application of Electronic Banking

Respondents in this study were asked to indicate the extent of application of electronic banking strategy tools implemented by their banks. They were to indicate whether they strongly agree, agree, neither agree/disagree, disagree or strongly disagree with the question asked. Findings from analysis of questionnaires administered identified the extent of e-banking tools application by commercial banks in Kenya demonstrated in Table 4.10 as follows;

Table 4.10: Extent of application of e-banking tools in the banks in Kenya

	Agency Banking	**ATMs**	**POS**	**Mobile Banking**	**Internet Banking**
Frequency					
Strongly agree	4	9	5	7	6
Agree	3	5	5	6	6
Neither Agree/Disagree	7	4	6	6	6
Disagree	5	1	2	1	2
Strongly Disagree	1	1	2	0	0
	20	**20**	**20**	**20**	**20**
Percentage					
Strongly agree	20%	45%	25%	35%	30%
Agree	15%	25%	25%	30%	30%
Neither Agree nor Disagree	35%	20%	30%	30%	30%
Disagree	25%	5%	10%	5%	10%
Strongly Disagree	5%	5%	10%	0%	0%
	100%	**100%**	**100%**	**100%**	**100%**

Source: Research Data (2016)

The Table 4.10 indicates that the respondents strongly agree of their bank's extent of e-banking tools application as follows; agency banking by 20%, ATMS by 45%, POS by 25%, mobile banking by 35% and internet banking by 30%.The data shows that they strongly disagree of their banks e-banking tools application extent as follows; agency banking, 5% ATMS by 5%, POS by 10%, mobile banking by 0% and internet banking by 0%. This demonstrates that the banks have a strong application of electronic banking tools mentioned with a cumulative of an average of 55% agreeing.

4.5 Performance of Commercial Banks in Kenya

4.5.1 Assessment of E-banking Strategy Tool Effect on Kenyan Commercial Banks Efficiency

The respondents on being asked to assess the effect of e-banking strategy on efficiency, indicated whether they strongly agree, agree, neither agree/disagree, disagree or strongly disagree with question asked. Table 4.11 shows assessment of e-banking strategy tool effect on commercial banks efficiency in deposits, withdrawals, payments and account checking processes.

Table 4.11: Effect of E-banking on Efficiency of Commercial Banks

Assessment	Deposits	Withdrawal	Making Payment	Account Checking
Frequency				
Strongly agree	8	9	9	9
Agree	5	8	5	8
Neither Agree/Disagree	6	3	4	3
Disagree	0	0	1	0
Strongly Disagree	1	0	1	0
	20	**20**	**20**	**20**
Percentage				
Strongly agree	40%	45%	45%	45%
Agree	25%	40%	25%	40%
Neither Agree/Disagree	30%	15%	20%	15%
Disagree	0%	0%	5%	0%
Strongly Disagree	5%	0%	5%	0%
	100%	**100%**	**100%**	**100%**

Source: Research Data (2016)

From the Table 4.11, respondents strongly agree that e-banking tools contribute towards the efficiency of the bank through the following processes; 40% strongly agree on efficiency on deposits, 45% on withdrawals, making payments and account checking respectively. While those that agree account for 25% on e-banking effect on efficiency in deposit taking, and making payment and 40% each on withdrawals and account checking. On the other hand, those that strongly disagree account for 5% on effect of e-banking on efficiency on deposit taking and making payments and 0% on account checking and withdrawals. In conclusion, at least 65% agree that e-banking contributes positively towards the performance of their banks.

4.5.2 Effect of Electronic Banking Strategy on Performance of Commercial Banks in Kenya

Respondents were asked to indicate the effect of e-banking strategy tools on performance in general. They were to indicate whether they strongly agree, agree, neither agree/disagree, disagree or strongly disagree with the question asked. Table 4.12 provides assessment by respondents of the effect of e-banking innovation strategy on the commercial banks in Kenya performance;

Table 4.12: Effect of E-banking on Performance of Commercial Banks

Assessment	Frequency	Percentage
Strongly agree	8	40%
Agree	10	50%
Neither Agree/Disagree	1	5%
Disagree	0	0%
Strongly Disagree	1	5%
Total	**20**	**100%**

Source: Research Data (2016)

Table 4.12 shows that respondents amounting to 40% strongly agree that e-banking strategy has impact on the commercial banks in Kenya performance.50% agree that e-banking has an effect on performance of commercial banks in Kenya. Those that disagree on effect of e-banking to performance account for 0%.Finally those that neither agree /disagree nor strongly disagree account for 5% of the respondents. At least 90% of the respondents in total are in agreement of e-banking's positive contribution to performance. This percentage is a positive indication for the conclusion of the study.

4.5.3 Role of E-banking Strategy on Performance of Commercial Banks using the CAMELS Approach

The respondents were asked to indicate on the role of e-banking strategy on their bank's performance for each variable of the CAMEL approach. They pointed out on whether they strongly agree, agree, neither agree / disagree, disagree or strongly disagree with the question asked. Table 4.13 provides the respondents' assessment of effect of e-banking strategy tool on the performance of commercial banks;

Table 4.13: Role of E-Banking Strategy on Performance

Frequency	Capital Adequacy	Asset Quality	Management Efficiency	Earnings	Liquidity	Sensitivity to Market Risk	Customer Value Addition
Strongly Agree	6	3	8	5	6	5	7
Agree	6	11	4	7	7	8	5
Neither Agree/Disagree	4	3	4	5	4	4	6
Disagree	3	3	3	2	2	3	1
Strongly Disagree	1	0	1	1	1	0	1
	20	**20**	**20**	**20**	**20**	**20**	**20**
Percentage							
Strongly Agree	30%	15%	40%	25%	30%	25%	35%
Agree	30%	55%	20%	35%	35%	40%	25%
Neither Agree/Disagree	20%	15%	20%	25%	20%	20%	30%
Disagree	15%	15%	15%	10%	10%	15%	5%
Strongly Disagree	5%	0%	5%	5%	5%	0%	5%
	100%	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Source: Research Data, 2016

From the analysis in Table 4.13, 30% of the respondents both strongly agree and agree that e-banking strategy contributes towards capital adequacy, while 20% neither agree nor disagree. Of the respondents 70% are in agreement that e-banking contributes towards performance with regard to asset quality. With regard to management efficiency, 40% and 20% strongly agree and disagree that e-banking contributes towards this performance measure. On the other hand 15% and 5% disagree and strongly disagree on this measure. As per the respondents, 25% and 35% strongly agree respectively that e-banking contributes towards earnings of the bank. While 35% and 30% either agree or strongly agree that e-banking contributes towards liquidity of the bank. In total 65% are in agreement that e-banking contributes towards sensitivity to market risk. 60% cumulatively strongly agree and agree that e-banking contributes towards customer value addition. In conclusion, at least 60% agree that e-banking contribute towards e-banking performance measured by each component of the CAMEL model.

4.5.4 Challenges Affecting the Effectiveness of E-banking Strategy on the Performance of Commercial Banks in Kenya.

The respondents were asked to indicate challenges affecting the effectiveness of e-banking innovation strategy on the performance of their banks for each variable of the CAMEL approach. They pointed out on whether they; agree, strongly agree, neither agree/disagree, disagree or strongly disagree with the question asked .The Table 4.14 provides a summary of respondents' assessment of challenges affecting effectiveness of e-banking strategy tool on the performance of commercial banks;

Table 4.14: Challenges affecting the effectiveness e-banking on the performance of commercial banks in Kenya.

	Cost Of E-banking Infrastructure	Network supply Problems	Regulatory Environment	Risk Management Framework	Security Concerns	Power Failure	Lack of Customer Know how	Limited Staff Skill	Limited Top Management Support	Rapid Technological Advancement
Frequency										
Strongly agree	7	4	2	6	8	3	5	4	2	12
Agree	10	9	10	9	9	4	8	7	8	4
Neither Agree/Disagree	2	3	3	2	2	3	3	3	3	3
Disagree	1	3	2	1	0	7	3	4	3	0
Strongly Disagree	0	1	3	2	1	3	1	2	4	1
	20	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**
Percentage										
Strongly agree	35%	20%	10%	30%	40%	15%	25%	20%	10%	60%
Agree	50%	45%	50%	45%	45%	20%	40%	35%	40%	20%
Neither Agree/Disagree	10%	15%	15%	10%	10%	15%	15%	15%	15%	15%
Disagree	5%	15%	10%	5%	0%	35%	15%	20%	15%	0%
Strongly Disagree	0%	5%	15%	10%	5%	15%	5%	10%	20%	5%
Percentage (%)	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Source: Research Data, 2016

From Table 4.14, 85 % of respondents agree that cost of e-banking infrastructure has an effect on the effectiveness of e-banking towards bank performance. Cumulatively, 65% and 60% off the respondents agree that network problems and regulatory environment respectively affect e-banking effectiveness .Cumulatively 85% agree that e-banking effectiveness on performance is affected by security concerns .In total,80% of the respondents agree that rapid technological advancements in e-banking technology have a bearing on its effectiveness. In conclusion, power failure is not a significant challenge. However, rapid technological advancements, cost of e-banking infrastructure, network supply problems, regulatory environment, security concerns and limited top management support play a significant role in preventing the effectiveness of e-banking strategy on performance of commercial banks.

4.5.5 Recommendation for Challenges Affecting the Effectiveness of E-banking on Performance of Commercial Banks

The respondents were asked an open ended question on recommendations that they suggest for effectiveness of e-banking tools towards performance of banks in Kenya. The responses were grouped subsequently. This sub-section provides respondents' summary of the recommendations or solutions for challenges affecting the effectiveness of e-banking on performance of banks in Kenya;

Table 4.15: Recommendations on Challenges Facing E-banking Effectiveness on the Performance of Commercial Banks

Challenges	Recommendations
E-Banking infrastructure cost	• Commercial banks should pool funds and purchase e-banking infrastructure platform to be used by all banks to reduce set up cost by significant margins. • Seeking external financing for e-banking infrastructure cost.
Regulatory environment	• CBK to keep abreast of new e-banking technological innovations. • Advanced policy framework by the regulatory environment. • Government support of electronic banking channels. • Closer monitoring of electronic banking framework by commercial bank regulators.
Risk Management Framework	• Investment in cyber security. • Investment in risk management frameworks. • Advanced systems & security measures.
Security Concerns	• Enhanced surveillance by banks to reduce cyber crime.
Power failure	• Outsourcing of power supply from the current primary power supply generators.
Lack of Customer know-how	• Continuous customer education and training on e-banking usage.
Staff Skill set	• Staff training on e-banking infrastructure.
Top Management Support	• Top management involvement from planning to implantation of electronic banking infrastructure.
Rapid Technological Advancements	• Continuous innovation of e-banking infrastructure and technology.

Source: Research Data, 2016

From Table 4.15, various recommendations have been pointed out for each challenge. The diverse solutions should be implemented holistically to ensure efficiency level of e-banking tools. All these are made possible with the support of internal and external banking stakeholders.

4.6 Descriptive Analysis

The study looked at two variables namely; dependent variable being performance measured through profit before tax and the independent variable being electronic banking strategy ; measured by ATMS installed, electronic cards issued and merchant or POS terminals .This section will provide the findings relating to statistics of the study as demonstrated in Table 4.16;

Table 4.16: Presentation of Variables Statistics

Year ending	Profit Before Tax	Total Assets	Return on Assets	No. of. ATMS	Cards issued	POS Outlets
30th June	Kshs (Trillion)	Kshs (Trillion)	%	Units	Units	Units
2009	0.0246	1.2635	1.95%	1691	4,132,360	5,063
2010	0.0349	1.5484	2.25%	1943	5,537,335	19,608
2011	0.0408	1.8738	2.18%	2183	8,583,977	16,714
2012	0.0532	2.1950	2.42%	2291	9,917,137	16,630
2013	0.0615	2.5135	2.45%	2439	10,921,155	19,204
2014	0.0710	2.8676	2.48%	2618	12,869,396	17,395
2015	0.0767	3.6014	2.13%	2698	14,505,485	19,259
Mean	**0.0518**	**2.2662**	**2.26%**	**2,266**	**9 495 264**	**16 268**
Max	**0.0767**	**3.6014**	**2.45%**	**2,698**	**14 505 485**	**19 608**

Source: Central bank of Kenya (2016)

From Table 4.16, bank performance was measured by profits before tax over the study period ranging from the years ending 30th June 2009 to 30th June 2015. Review of the data indicates that profitability grew from Kshs 0.0246 Trillion in 2009 to Kshs.0.0767 Trillion in the year ending 30th June 2015. Electronic banking implementation was measured by number of ATMs installed, Cards issued and Point of Sale terminals installed by banks operating commercially in Kenya. The results of the research indicate that ATMs have increased over the review period from 1691 units in 2009 to 2698 units in the year 2015. Also noted, was rapid rise in cards issued standing at 14.5 million cards in 2015 up from 4 million cards in 2009. Lastly, the number of POS machines has also risen significantly from 5,063 units in year 2009 to 19,259 units in 2015. The rise in the measures of e-banking therefore gives an indication as to the contributing factors to increased profitability of the commercial banks.

4.6.1 Trend Analysis

The Figure 4.2, demonstrates the relationship between e-banking proxies and performance of commercial banks measured by profitability.

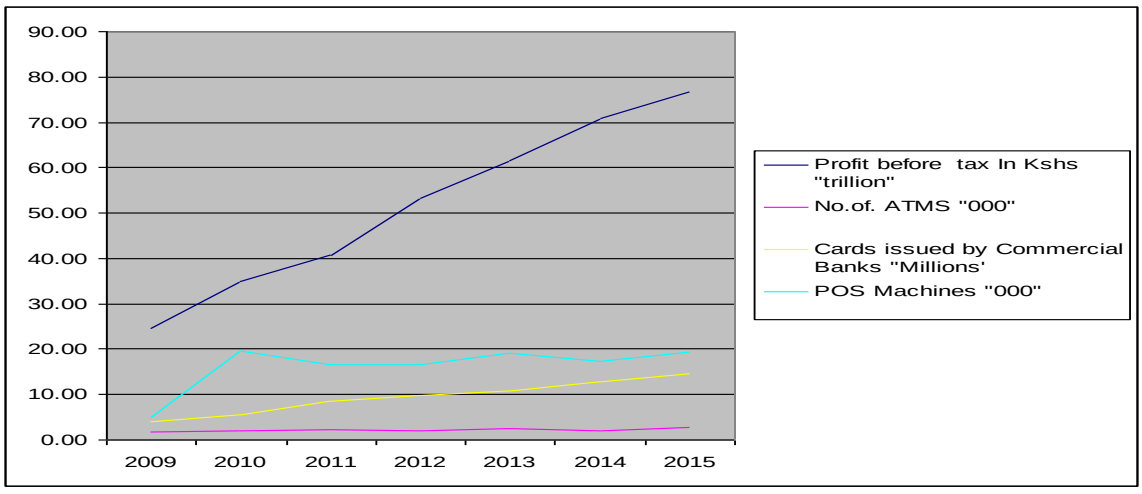

Figure 4.2: Graphical Presentation of Profit before Tax and Electronic Banking represented by; ATMS, POS and CDs.
Source: Research Data, 2016

Graphical representation above indicates a trend of e- banking innovation strategy and its impact on bank performance measured through profitability. This trend demonstrates an upward rise in profitability at an accelerating rate as more electronic banking activities are adopted as measured by ATMS installed, POSs and cards issued by commercial banks from the year 2009 to the year 2015. However, there is a steady level of ATMs installed throughout the years as the other two proxies are increasing.

4.6.2 Correlation Analysis

Correlation analysis shows the relationship between electronic banking and performance of commercial banks in Kenya. From the SPSS outcome, the correlation matrix demonstrated in Table 4.17 was generated. This analysis generated variables that best explain the relationship between performance of banks and e-banking innovation strategy.

Table 4.17: Correlation Matrix

	Profit Before Tax	**ATMs**	**CDs**	**POSs**
Profit (Y)	1	0.694	0.986	0.625
ATMs (X_3)	0.694	1	0.724	0.626
CDs (X_1)	0.986.	0.724	1	0.609
POSs (X_2)	0.625	0.626.	0.609	1

Source: Research Data, 2016

The findings in the correlation matrix Table 4.17 indicate that there is a strong positive relationship between e-banking innovation strategies proxied by ATMs installed(R=0.694), CDs issued; (R=0.986) and POSs (R=0.625) and performance measured by profit and therefore the three variables are statistically significant at 5% significance level. Correlation between e-banking and performance of commercial banks is demonstrated in regression analysis discussed in the immediate section.

4.6.3 Results of Regression Analysis

With the establishment of a strong positive relationship between e-banking innovation strategy variables and performance, regression analysis was conducted to analyze the coefficient of correlation and determination between the variables.. This analysis was generated from running SPSS. The results of regression analysis are presented in Table 4.18;

Table 4.18: Presentation of Summary of Regression Model

R	R^2	Adjusted R^2	Std. Error of the Estimate
0.987	**0.975**	**0.95**	**4.314**

Source: Research Data, 2016

From Table 4.18, R measures the correlation between predicted variables and observed performance (profitability) denoted by Y. In this study R=0.987, since this is a very high correlation, the model predicts the regression model above precisely. From the analysis R^2, coefficient of determination, measures the strength of the correlation between performance and e-banking proxies.

R^2 indicates the proportion of variance in performance that can be explained by the three e-banking predictors namely ATMS, CDs and POSs installed by the banks. This relationship is also reflected by adjusted R^2. In this case adjusted R^2 indicates that 95% variability in banks' performance is attributable from to variations n e-banking innovations. For this study 5% variability in commercial banks in Kenya performance is contributed by other factors not covered in this study.

Table 4.19: ANOVA

Model	Sum of Squares	Degrees of Freedom	Mean Square	F	Sig b
Regression	2175.313	3	725.104	38.959	0.007
Residual	55.835	3	18.959		
Total	**2231.149**	**6**			

Y. Dependent Variable, performance measured by Profit before tax
βi. Predictors/ Constant of e-banking proxied by POS, CDs, ATMS

Source: Research Data, 2016

Table 4.19 shows the overall significance of the regression estimation model, (Sig b).Parameters for the population, had a significance level of 0.007. From ANOVA presentation in the Table 4.19, f-calculated is greater than f-critical; 38.959>0.007; Implying that the equation of regression model was well specified and the coefficients show a strong relationship between performance of banking and electronic banking.

Pearson product moment correlation coefficients generated from SPSS, whose sign depict the relationship between the dependent variable performance and independent variable is shown in column **βi** in Table 4.20. It evaluates the relationship between the dependent variable (performance as measured by profitability) and the independent variables as measured by e-banking strategy proxied by number of ATMS (X_3), electronic cards **(**X_1**)** and variable number of POS/point of sale terminals (X_2) respectively.

Table 4.20: Pearson product moment correlation /Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t-statistics
	β i	Std. Error	Beta	
(Constant)	6.863	11.866		0.578
X_1	5.133	.712	.996	7.206
X2	0.219	.463	.058	0.474
X_3	-3.473	7.802	-.063	-0.445

Data Source: Research data (2016)

As per findings in Table 4.17, a strong relationship was found to exist between e-banking innovation strategy proxies and performance. As per Table 4.20 relationship between e-banking innovation strategy and electronic cards had unstandardized beta coefficient β1=5.133; POSs terminals had a beta coefficient β2= 0.219 while ATMs had a beta coefficient β3 = -3.473.Meaning electronic cards and POSs have positive impacts on performance of banks while ATMs(X_3) installed have negative effects on banks. Given the scores on the predictors in Table 4.20, performance can be predicted effectively by adopting the following estimated equation for banks;

$$\mathbf{Y= \beta_0+\beta_1 X_1 +\beta_2 X_2 +\beta_3 X_3+ \varepsilon}$$

Where; $\mathbf{\beta_0}$ =6.863, $\mathbf{\beta_1}$=5.133, $\mathbf{\beta_2}$=0.219 and $\mathbf{\beta_3}$=-3.473

Substituting the regression constant and beta coefficient values, the regression model equation for this study is presented as;

$$\mathbf{Y = 6.863 + 5.133 X_1 + 0.219 X_2 - 3.473X_3 +\varepsilon}$$

Where one point increase in electronic cards installed results into 5.133 point increase in performance of the bank and one point increase in POSs leads to 0.219 increases in performance with a decline in performance by 3.473 points for every increase in ATMs installed .The beta constant of 6.863 was observed for this study.

4.7 Discussions

The findings of this study were that e-banking innovation strategy adoption results into a positive effect on the performance of banks in Kenya. The responses indicate a cumulative majority of 60% agreeing that their banks have implemented e-banking strategy for over 5 years. At least 50% responses indicate application of e-banking strategy tools namely mobile banking, internet banking, ATMS,POS/Merchant terminals, while those that have implemented agency banking account for 35 % of the responses.

At least 60% of the respondents either strongly agree or agree that in total, e-banking strategy contributes towards electronic banking performance assessed by each component of CAMELS model. Also, over 75% of the respondents were in agreement that e-banking strategy contributes towards the efficiency of the commercial banks in terms of deposit taking, withdrawals, making payments and account checking processes.

However, 55% of the respondents cumulatively are in agreement that cost of infrastructure, network supply problems, regulatory environment ,security and risk management concerns ,lack of customer and staff skill set, limited top management support and rapid technological advancement have a negative bearing on the effectiveness of e-banking innovation strategy on performance of commercial banks in Kenya. The respondents noted various recommendations and solutions to these challenges as pointed out in Table 4.15.

Using secondary data, profit before tax was used to represent performance, while e-banking was proxied by numbers of ATMs installed, POSs and CDs issued by commercial banks in Kenya. Review of the graphical analysis indicates an upward trend in performance as more electronic cards are issued and as more POS are installed by the commercial banks in Kenya. However, it was noted that ATMS installed remained stable throughout the period of review being year 2009 to year 2015.From the study, the overall regression estimation of the model is significant at 5% level of significance. It means that the model indicates that electronic banking is significant in explaining performance of banks in stationed in Kenya with a significance of 0.007.

ANOVA indicates that the f-calculated is greater than f-critical; 38.959 >0.007.This means the regression equation was specified well and the coefficients show a strong relationship between performance of banking and e-banking strategy. Also a strong coefficient of determination, R^2, indicate that 95% performance changes in banks is attributed to electronic banking activities.

Review of the proxies for electronic banking coefficients, it was noted that one point increase in electronic cards leads to 5.133 points increase in performance while one point increase in POS leads to 0.219 point increase in performance. One point increase in ATMS installed by the commercial banks resulted into a decline of 3.473 points in performance. To address the research question, which was to determine the effect of e-banking strategy on performance of commercial banks in Kenya, various theoretical models were adopted to guide the study. These included Resource Based View (RBV), Porter's Five Force model and Technology Acceptance Model (TAM).

RBV proposes that by developing unique resources a firm's performance may be enhanced. This is evidenced from the findings of the study where commercial banks in Kenya have adopted E-banking strategy tools and have subsequently resulted into increased performance measured by CAMELS components. TAM points out that users' decision to take up new technology is influenced by two factors namely perceived usefulness and perceived ease of use. The results of the study show that e-banking strategy tools provide usefulness to the banks as they enhance efficiency of these banks. Porter's five force model argues that the effect of internet on each of the five forces can be either positive or negative. As evidenced in this study this is true as customer value addition is experienced while in total supplier /banks in this case benefits include improved efficiency, earnings, capital adequacy and asset quality.

The results of the study were also in support of recommendations proposed by previous empirical data. For example, Ansoff (1998), pointed out that strategies must be supported for goals to be realized. In this study it is evident for e-banking strategy to be effective in contributing towards performance of commercial banks, support by top management through involvement, the regulator (CBK) though regulatory frameworks and staff members through innovations and training is required. This study also supports other researcher's assertions such as Kagendo, 2015, where it was found that e-banking adds value to not only financial performance but also efficiency, in banking activities, CAMELS model components and client value addition.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This section presents a summary of the findings of the study conducted. It will also cover discussions that resulted from the observations noted. The chapter will then identify suggestions for further research, conclusions and recommendation regarding the major findings of the study as well as limitations of the study.

5.2 Summary

This study's main objective was determining the effects of e-banking innovation strategy on the performance of commercial banks in Kenya. A cross sectional research design was conducted. Data for analysis was obtained from responses of the questionnaires administered as well as secondary data gathered from the Central Bank of Kenya. The analysis of secondary data was conducted using data from years 2009 to 2015 and was analyzed through descriptive and regression analysis which was assisted by using the SPSS tool. Results of the study found that electronic banking innovation strategy has a significant effect on the performance of commercial banks.

Kenyan banking system has diversified its e-banking tools channels with 75% of the respondents agreeing that they have adopted internet banking, agency banking, mobile banking and merchant/point of sales terminals. On the other hand 85% of the respondents are in agreement of adoption of ATM as an e-banking tool. With the increase in agency banking, results in higher value of transactions for commercial banks were observed as per CBK reports between 2009 and 2010.

5.3 Conclusion

Based on the objective of the study, which was to study the effects of e-banking innovation strategy on the performance of commercial banks in Kenya, results of the study indicate that performance as measured by profit before tax can be explained by independent variable electronic banking proxied by cards issued, and number of point of sales terminals installed by commercial banks. From the analyses conducted, it is noted that there is a positive strong relationship between electronic banking and bank performance of commercial banks in Kenya.

Electronic banking has a significant marginal effect on the performance of commercial banks as there is an improvement in customers' access to banking activities with the click of a button and without restrictions related to time and location. Efficiency, accessibility and a larger market reach increases the number and volume of transactions, increases the number of debit card and credit charges, interest on loans, increased deposits (a source of funding for banking business and investment).These factors contribute positively towards income position and subsequently financial performance. However, findings of the study have noted challenges and subsequent recommendations for ensuring the effectiveness of this tool towards performance as pointed out in Table 4.15.

5.4 Recommendation for Policy and Practice

With regard to management of commercial banks in Kenya, great emphasis should be placed on seeking alternative funding on the e-banking infrastructure as it is expensive to purchase and maintain. The management can seek avenues such as joint investment in e-banking infrastructure that can be shared by all commercial banks in Kenya at a fraction of the original cost while tailor making them to suit their needs.

The management can also invest in continuous innovation of e-banking strategies while ensuring continuous training and sensitization of both their clients and staff as e-banking exists in turbulent technological environment. Lastly, top management involvement would contribute towards the effectiveness of e-banking by engaging at all levels from e-banking planning to implementation and also evaluation.

Review of research material and respondents indicate great need for the regulator, CBK, to safeguard banks in Kenya and by instituting appropriate regulatory frameworks that are in keeping with technological advancements surrounding e-banking. Electronic banking is marred by various issues that may affect its usefulness in contributing towards an organizational performance. Examples of current issues facing internet banking include; governance issues, cyber-crimes, money laundering, terrorism, corruption and bribery among others. As observed by Ezeoha (2006), banking regulation structure is a critical payer with the growth of e-banking across all countries that have adopted this banking tool. As more e-banking is occupying a larger share of banking operation channels in Kenya, CBK should play a crucial role in putting in frameworks that will ensure effective risk management and corporate governance over transactions conducted on the internet.

5.5 Suggestions for Further Research

Respondents have pointed out the emergence of alternative e-banking platforms channels that pose a competitive threat on the performance of their respective banks. The options available include banking products loans and advances, such as deposits, savings among others offered in form of mobile money by telecommunication companies operating in Kenya.

These calls for a thorough study on the impact of these alternative e-banking channels and the strategies that commercial banks have undertaken to counter the challenges. A cross industry research is suggested to ascertain factors affecting the impact of electronic banking strategy. An example would include impact of regulatory frameworks on effectiveness of e-banking strategy tools towards contributing to performance of commercial banks. A recent case is the capping of interest rate by the Central bank of Kenya (CBK, 2016). A thorough research would provide valuable information on the impact this regulation has on e-banking strategy.

This study would also recommend detailed analysis on whether ownership of e-banking infrastructure has a bearing on its effectiveness in contributing towards performance of commercial banks in Kenya. The ownership structure could analyze whether purchase, outsourcing or a blend of the two could have an effect. Further, the study can also evaluate alternative funding for e-banking strategies as respondents pointed out that e-banking strategy infrastructure is quite costly to maintain.

Following the recent waves of cyber-crimes, terrorism and corruption in the media, a more specific study will be to analyze the risk environment affecting internet banking. This will enable researchers and policy makers focus more on offering supportive measures that will ensure e- banking will be a success. A replicative research and an in-depth case study are also suggested for other industries to ascertain the effect of electronic commerce on performance of the players in those industries. For example a study on the telecommunications industry that has integrated mobile banking into its core business, examples being MPESA, Airtel Money and orange money being adopted by Safaricom, Airtel and Orange companies respectively.

5.6 Limitations of Study

The study had some limitations. These were mainly scope limitations. Firstly, limitations in willingness to accept and fill in questionnaires were observed on some banks mainly as a result of their risk management frameworks that subsequently prevent them from participating in the process. Delays in responses to questionnaires administered were also noted from a few respondents.

Secondary data used for the study was limited to 7 years starting from 2009 to 2015. Variables reviewed were restricted to profit as independent variable and POSs, CDs, and ATMs as proxies for electronic banking as other factors that could have been used as proxies were held constant. The study was also restricted to publicly available secondary data or information. Access to more detailed raw data and an extended period of study would have given a more conclusive finding.

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APPENDICES

APPENDIX I: Introduction Letter

UNIVERSITY OF NAIROBI
SCHOOL OF BUSINESS

Telephone: 020-2059162
Telegrams: "Varsity", Nairobi
Telex: 22095 Varsity

P.O. Box 30197
Nairobi, Kenya

DATE 19th September 2016

TO WHOM IT MAY CONCERN

The bearer of this letter Rose Jemutai Cheminwir

Registration No. D61/61241/2013

is a bona fide continuing student in the Master of Business Administration (MBA) degree program in this University.

He/she is required to submit as part of his/her coursework assessment a research project report on a management problem. We would like the students to do their projects on real problems affecting firms in Kenya. We would, therefore, appreciate your assistance to enable him/her collect data in your organization.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organizations on request.

Thank you.

UNIVERSITY OF NAIROBI
SCHOOL OF BUSINESS
19 SEP 2016
P.O. Box 30197 - 00100, NAIROBI

PATRICK NYABUTO
SENIOR ADMINISTRATIVE ASSISTANT
SCHOOL OF BUSINESS

APPENDIX II: Questionnaire

The responses provided in this interview will be used explicitly to inform findings for this research and not for any other use. Personal details and information obtained through this questionnaire will also be kept confidential.

This questionnaire is divided into three sections, Section A covers demographic data. Section B covers electronic banking tools used for electronic banking strategy, Section C deals with the effect of electronic banking strategy on performance and section D covers challenges faced on application of electronic banking strategy.

SECTION A: DEMOGRAPHIC DATA

(Please tick where appropriate)

1. Gender Male [ ] Female [ ]
2. Age of the respondent

   20-30 Years [ ] 31-40 Years [ ] 41-50Years [ ] Above 51 Years [ ]
3. Role in Organization……
4. Level of Education

   Degree [ ] Postgraduate [ ] Other (Please Specify)……
5. How long have you worked in banking?

   1-5 Years [ ] 6-10 Years [ ] 11-15Years [ ] Above 15 Years [ ]
6. How long has the bank been in existence?

   < 5 Years [ ] 5-10 Years [ ] >10 Years [ ]
7. When did the bank adopt e-banking?

   < 5 Years [ ] >10Years [ ]

   5-10 Years [ ] Not Implemented [ ]

SECTION B: E-BANKING STRATEGY TOOLS USED BY THE BANK.

8. What types of electronic banking tools used by the bank are you aware of? (Please tick where appropriate)
   a) Automated Teller Machines [ ]
   b) Agency Banking [ ]
   c) Mobile Banking [ ]
   d) Merchant /POS terminals [ ]
   e) Internet Banking
   f) None [ ]
   g) Others (Please specify).....

9. What is the extent of application of e- banking in your bank using the following electronic banking tools? Please indicate using the following scale.1 = strongly disagree, 2= disagree, 3= neither agree nor disagree, 4="agree, 5= strongly agree.

Application of Electronic Banking	**1**	**2**	**3**	**4**	**5**
Agency Banking					
ATMS					
Internet Banking					
Mobile Banking					
Merchant/Point of Sales Terminals					
Others, Specify					

10. To what extent does e-banking strategy promote efficiency in the bank? Please indicate using the following scale.1 = strongly disagree, 2= disagree, 3= neither agree nor disagree, 4="agree, 5= strongly agree.

Role of e-banking	**1**	**2**	**3**	**4**	**5**
Depositing					
Withdrawals					
Making Payments					
Account Checking					
Others, Specify					

11. Is the Electronic Banking platform built in-house, purchased or outsourced? (Please tick where appropriate)

E-Banking platform source	**Built In house**	**Purchased**	**Outsourced**	**Other, specify**
Agency Banking				
Automated Teller Machines				
Internet Banking				
Merchant/POS Terminals				
Mobile Banking				
Others, specify				

SECTION C: PERFORMANCE OF THE BANK

Roles of electronic banking on Performance	**Strongly agree**	**Agree**	**Disagree**	**Neither agree nor disagree**	**Strongly Disagree**
Capital Adequacy					
Asset Quality					
Management Efficiency					
Increased Profit/Earnings					
Liquidity of the Bank					
Sensitivity to Market Risk					
Customer Value Addition					

12. Does electronic banking promote the bank's performance? Definition of the scale for the assessing how e-banking has promoted performance of the bank.

Strongly agree [ ] Agree [ ] Neither agree nor disagree [ ]

Disagree [ ] Strongly disagree [ ]

13. Does the bank use CAMELS analysis for evaluating bank performance?

Yes [ ] No [ ]

14. Do you think electronic banking has promoted performance of the bank in the following ways, (Definition of the Scale for the assessing how electronic bank has promoted performance of the bank.1 = strongly disagree, 2= disagree, 3= neither agree nor disagree, 4= agree, 5=strongly agree)

Strongly agree [ ] Agree [ ] Neither agree nor disagree [ ]

Disagree [ ] Strongly disagree [ ]

SECTION D: CHALLENGES FACED BY THE BANKS WHILE USING ELECTRONIC BANKING STRATEGY

15. To what extent does the bank face the following challenges that may affect electronic banking effectiveness? Definition of the Scale for assessing challenges affecting the effectiveness of electronic banking ;(1= strongly disagree, 2= disagree, 3= neither agree nor disagree, 4= agree, 5=strongly agree).

Roles of Electronic Banking	**Strongly agree**	**Agree**	**Neither Agree nor Disagree**	**Disagree**	**Strongly Disagree**
E-Banking infrastructure cost					
Reliability of network					
Regulatory environment					
Risk Management Framework					
Security Concerns					
Power failure					
Lack of Customer know-how					
Staff Training/Skill set					
Top Management Support					
Rapid Technological Advancements					

16. What do you think could be the solutions to the problems noted above?

.....

.....

.....

.....

APPENDIX III: List of Commercial Banks in Kenya in terms of Ownership

A. Foreign Owned Institutions

1. Foreign Owned not Locally Incorporated

1. Bank of India
2. Citibank N.A. Kenya
3. Habib Bank A.G. Zurich
4. Habib Bank Ltd.

2. Foreign Owned but Locally Incorporated Institutions (Partly owned by locals)

1. Bank of Baroda (K) Ltd.
2. Barclays Bank of Kenya Ltd.
3. Diamond Trust Bank Kenya Ltd.
4. K-Rep Bank Ltd.
5. Standard Chartered Bank (K) Ltd.
6. Ecobank Ltd
7. Gulf Africa Bank (K) Ltd
8. First Community Bank.

3. Foreign owned but Locally Incorporated Institutions

1. Bank of Africa (K) Ltd
2. UBA Kenya Bank Limited

B. Institutions with Government Participation

1. Consolidated Bank of Kenya Ltd.
2. Development Bank of Kenya Ltd.
3. Kenya Commercial Bank Ltd.
4. National Bank of Kenya Ltd.
5. CFC Stanbic Bank Ltd.

C. Institutions Locally Owned

1. African Banking Corporation Ltd.
2. Jamii Bora Bank Ltd.
3. Commercial Bank of Africa Ltd.
4. Co-operative Bank of Kenya Ltd.
5. Credit Bank Ltd.
6. Charterhouse Bank Ltd.
7. Chase Bank (K) Ltd.
8. Equatorial Commercial Bank Ltd.
9. Equity Bank Ltd.
10. Family Bank Ltd.
11. Fidelity Commercial Bank Ltd.

12. Fina Bank Ltd.
13. Giro Commercial Bank Ltd.
14. Guardian Bank Ltd.
15. Imperial Bank Ltd.
16. Investment & Mortgages Bank Ltd.
17. Middle East Bank (K) Ltd.
18. NIC Bank Ltd.
19. Oriental Commercial Bank Ltd.
20. Paramount Universal Bank Ltd.
21. Prime Bank Ltd.
22. Trans-National Bank Ltd.
23. Victoria Commercial Bank Ltd.

D. Institutions listed on the NSE

1. Barclays Bank of Kenya Ltd.
2. CFC Stanbic Bank Ltd.
3. Equity Bank Ltd.
4. Housing Finance Ltd.
5. Kenya Commercial Bank Ltd.
6. NIC Bank Ltd.
7. Standard Chartered Bank (K) Ltd.
8. Diamond Trust Bank Kenya Ltd
9. National Bank of Kenya
10. Co-operative Bank of Kenya Ltd

Source: Central Bank of Kenya 2016