STRATEGIC INFORMATION SYSTEMS AND PERFORMANCE OF COMMERCIAL BANKS IN NYERI COUNTY, KENYA

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D53/OL/23102/2013

A Research Project Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Master of Business Administration (Strategic Management), of Kenyatta University

JULY, 2017
DECLARATION

This research project is my original work and has not been presented for a degree or other award in any other School or University. No part of this research project should be reproduced without authority of the author or/and Kenyatta University.

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

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DEDICATION

This project is dedicated to my family and classmates for their moral support during the period of drafting the proposal. Also I dedicate this project to my workmates for their emotional support.
ACKNOWLEDGEMENT

Special regards to my supervisor Dr. Samuel Maina of Kenyatta University, for his guidance, support and review of my work all through. Thanks also to my lecturers and colleagues for an enjoyable and supportive academic atmosphere, In addition special thanks to my parents for motivating and supporting me as well as for their perpetual encouragement and tolerance during development of this project. Thank you all.
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Organizational Performance
This is the ability of an organization to achieve its short term and long term goals using the available scarce resources.
ABBREVIATIONS AND ACRONYMS

ATM       Automated Teller Machine
CRM       Customer Relationship Management
CBK       Central Bank of Kenya
EFT       Electronic Funds Transfer
EFTPOS    Electronic Funds Transfer at Point of Sale
IT        Information Technology
ICT       Information, Communication and Technology
IS        Information Systems
SACCOS    Savings and Credit Co-operative
SIS       Strategic Information Systems
ABSTRACT

With increased competition, changing consumer needs, influence of globalization and employees’ diversity, commercial banks are driven to adopt strategic information systems to enhance their competitiveness in the changing business environment. The purpose of this study was to establish the influence of Strategic Information System and performance of Commercial Banks in Nyeri County, Kenya. The objectives of the study were to determine the influence of internet banking, mobile banking and automated teller machines on performance of Commercial Banks in Nyeri County. This study adopted descriptive research design to establish strategic information systems and the performance of Commercial Banks in Nyeri County, Kenya. Descriptive research was appropriate because it explores and describes the relationship between variables in their natural settings without manipulating them. The study adopted a census approach where information from every member of the population was sought to establish the problem under investigation. A census was preferred because ten Commercial Banks operating in Nyeri had limited number of respondents. The respondents of the study were employees of Commercial Banks operating in Nyeri County. The study used both primary and secondary sources of data. Out of the ten Commercial Banks selected, a total of 185 from 10 commercial banks in Nyeri County were used as respondents of this study. Primary data was collected through structured questionnaires with both open-ended and close-ended questions. Secondary data was obtained from published research papers, textbooks and Journals. Questionnaires were the preferred instrument of data collection because the respondents completed the required information at their own time and the collected data was easily quantified. Reliability of the research instrument was enhanced through a pilot study that was done on two Commercial Banks operating in Nyeri County (Kenya Commercial Bank and Equity Bank) to test the validity and reliability of the research instrument. Seeking opinions of industry experts in the field of study and the researcher’s supervisor also enhanced the quality of research questions. The Statistical Package of Social Sciences (Version 21) was used to process and analyze the data collected. Data was analyzed using multiple regression method to test statistical relationship between variables of the study. The analysed data was presented descriptively using tables. It was established that Commercial Banks adopted internet banking, mobile banking to improve their performance in terms of profits, customer satisfaction, minimize costs of production and compensate on return on investments. The study revealed that mobile banking services were still adopted by consumers on a larger extent due to convenience of accessing financial information ranging from electronic financial statement and accessibility of banking services. The study concluded that there was a positive relationship statistical relationship between independent variables and dependent variables of the study. Therefore, this study recommends that Commercial Banks should allocate adequate financial resources to create maximum awareness of their e-banking services and train their staff to enhance their performance in the changing business environment.
CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Due to dynamic business environment, globalization, competition, changing consumer needs and influence of technology, modern competitive organizations adopt strategic information systems such as internet banking, mobile banking and automated teller systems to improve efficiency and effectiveness (Diez & McIntosh, 2009). The revolution in Information Systems (IS) has brought drastic changes in financial institutions in the global market. These systems have opened new horizons for business enterprises and have enabled them to carry out their commercial activities by use of advanced technologies.

Ferguson, Finn and Hall, (2004) argue that SIS has been the key driver of organizational performance in the dynamic business environment. Organizational performance of competitive firms has been associated by adoption of Strategic Information Systems. Increased profits, increased efficiency and effectiveness and improved customer service are indicators of systems that adopt Strategic Information Systems (Teymouri & Ashoori, 2011).

Kudyba and Diwan (2001) assert that there is positive correlation between Strategic Information Systems and performance of organizations in the changing business environment. Bidgoli (2011) suggest that SIS can help organization reduce the cost of products and services and even assist with differentiation and focus strategies which
improves performance. The era of technological development began about a decade ago when different sectors of the economy in developed countries diverted their investment preferences towards information technology tools, information processing equipment’s and communication media. In the service industry, the banking sector is one of the largest investors in SIS

Muraleedharan (2014) asserts that adoption of Strategic Information Systems by organizations in the changing business environment has resulted to capabilities that give a company strategic advantages over the competitive forces it faces in the global marketplace. This creates strategic information systems, that support or shape the competitive position and strategies of an enterprise (Gheorghe, 2008). SIS play a major role in giving an organisation a competitive edge

SIS enhances firm performance through means such as; allowing the innovation of unique products which at times lead to first mover advantage, reduction in operation costs by increasing efficiency, developing strategic alliances with customers, suppliers, consultants and other companies, differentiation of products and services to serve a certain market, improve business process and to increase quality of products offered to customers (Alipour & Mahdi, 2010).

Teymouri and Ashoori (2010) assert that there is a positive correlation between SIS and organizational performance. The benefits brought by SIS such as improved efficiency, growth in market share and expansion into new markets have seen more firms embrace these systems. It has opened new horizons allowing business
enterprises to carry out commercial activities through advanced technologies. It has not only improved organizations competitive advantage but has also improved the effectiveness of risk management in these organizations by identifying, measuring, monitoring and controlling the risks faced. Further, it has been driven by huge investments in Information Technology that began about a decade ago when various industries in developed countries started making investment preferences towards information technology tools and equipment (Kudyba & Diwan, 2001).

Ferguson et al. (2004) posits that electronic banking practices by commercial banks has become a value addition practice which has led to reduced operational costs, improved customer experience, and also provided opportunities of product innovation and continuous improvement in the system (Muraldeharian, 2014). Kharuddin, Ashhar and Nassir, (2010) suggest that advances in IT has seen the introduction of electronic banking platforms through which customers are able to transact on their mobile phones and through the internet from the comfort of their offices or homes. Through SIS, an organization is able to increase its productivity in terms of increased market share, expanded product range, customized products and better response to client demand.

1.1.1 Strategic Information Systems

Strategic information systems can be regarded to as information systems developed in response to corporate business initiative (Pant & Hsu, 1995). They are mainly intended to give competitive advantage to the organization thus improving or increasing performance. Through SIS, an organization may be able to deliver
products or services at a lower cost, products that are differentiated or even focus on a particular market segment. SIS may also be defined as information technology which interrelates with business strategies to support corporate missions (Diez et al, 2009). In the contemporary information era, one of the key factors in search for higher levels of competitiveness and better performance is information technology (IT) which forms part of information systems.

Muraleedharan (2014) argues that SIS is the firms’ total investment, expenditure, and know-how in computing. He further argues that it involves hardware, software, processes and people dedicated to providing services. SIS affects the management system and the organizational structure by changing the methods and capability of its users to search, capture, store and transfer information. Strategic Information Systems have become an important aspect in the future development of financial services industry and especially the banking industry (Alipour & Mahdi, 2010).

Behl (2009) posits that the ability of SIS to enhance the performance of a firm largely depends on the basis on which the technology has been chosen and the extent to which it has been aligned to the firm’s strategy. Strategic information systems have played a major role in meeting the increasing dependency for high quality information for decision making. Managements need assurance that they are obtaining relevant and reliable information at the right time with a reasonable cost (Petter & DeLone, 2013).
Timely and accurate decision making is key to increased organization performance. Banks have embraced SIS such as electronic commerce as a means of doing business, because it as a way of improving efficiency, growing market share and expanding into new markets (Bharadwaj, 2000). The SIS that this study sought to investigate their effect on the performance of Commercial Banks were: internet banking, mobile banking and automated teller machines.

1.1.2 Organizational Performance

Understanding the financial state of any enterprise is determined by comprehensive analysis of financial records and reports. Gupta, Koshal and Koshal (2006) argue that the major goals of any firm from the shareholder perspective is the capacity of the firm to maximize profits and minimize costs. Firms should always evaluate their short term and long term liquidity, profitability and solvency levels. In the changing business environment, firms should adopt risk management models that will maximize stakeholder values (Panwala, 2009).

Organizational performance comprises the actual output or results of an organization as measured against its intended outputs (or goals and objectives). Norton and Kaplan (2006) assert that organizational performance describe a range of operational activities designed to minimize costs and maximize profits. He argues that integration of technology in the system will provide opportunities of enhancing efficiency and effectiveness in service delivery. Customers are likely to save time and make transactions from remote areas, use cashless means to pay for goods and services (Petter & DeLone, 2013).
Chandan and Urhuogo (2012) advocate that organizational performance can be determined by: financial perspective, which entails measuring whether the organization is generating profits from its core businesses; Customer perspective, that entail customer satisfaction from goods and services; Internal business processes, that involves continuous improvement of services using modern technology and finally innovation and learning, that entails ability of organizations to develop new products and services thus team learning and co-partnerships in the industry.

Pearce and Robinson, (2013) assert that organizational performance comprises the actual output or results of an organization as measured against its intended outputs (or goals and objectives). It involves the ability of an organization to fulfill its mission through sound management, strong governance and a persistent re dedication to achieving results. Effective nonprofits are mission-driven, adaptable, customer-focused, entrepreneurial, outcomes oriented and sustainable. Creating flexible, high performing, learning organizations is the secret to gaining competitive advantage in a world that would not stand still. Performance measures can be financial or non-financial. Both measures are used for competitive firms in the dynamic business environment (Petter & DeLone, 2013).

Muraleedharan (2014) avers that aspects of performance of any organization should range from; effectiveness, efficiency, economy, quality, consistency behavior and normative measures. SIS has contributed to competitiveness of firms across industries including Commercial Banks. It allows the innovation of unique products which at
times lead to first mover advantage, reduction in operation costs by increasing efficiency, developing strategic alliances with customers, suppliers, consultants and other companies, differentiation of products and services to serve a certain market, improve business process and to increase quality of products offered to customers (Musangu, & Kekwaletswe, 2011).

1.1.3 Performance of Commercial Banks in Nyeri County

According to Central Bank of Kenya (2015) Commercial banks in Kenya and especially in Nyeri County have contributed significantly in economic developments despite the internal and external changes. Stiff competition from Saccos and microfinance institutions, change of consumer need, employee diversity, high costs of operation and change of regulations has contributed to investment in SIS to gain competitive edge in the banking industry to improve performance.

Petter and DeLone (2013) suggests that keeping with the advancement in technology, commercial banks have in the recent past undergone major technological leaps in the provision of banking services by adoption of SIS which has particularly provided efficiency and accessibility of banking services without the barriers of location and time. New technologies in the banking sector like internet banking, mobile banking and automated teller systems are drivers of organizational competitiveness among commercial banks (Kanini, 2008).

Aduda and Kingoo (2012) argue that financial innovation associated with technological change has totally changed the banking philosophy and that is further
tuned by the competition in the banking industry in Kenya. Kenyan commercial banks have continued to deploy huge investments in technology based innovations and training of manpower to handle the new technologies.

1.2 Statement of the Problem

With the changing business environment, globalization, influence of technology and customer demands, organizations have been keen to leverage their unique firm attributes with investments in information technology to realize long term performance gains (Chandan & Urhuogo, 2012). Adoption of SIS by modern financial institutions has contributed to improved customer service, increased profits, minimal costs of operation and new product development. However, despite the introduction of internet banking, mobile banking and automated teller machines, commercial banks have continued to experience deteriorating performance (Alipour & Mahdi, 2010).

A study by the KIPPRA (2015) established that 72% of the Commercial Banks in developing countries faced challenges of integrating appropriate SIS to enhance performance due to internal factors like employee resistance and lack of management support. SIS was established to be the key driver of performance among commercial banks around the globe despite the change of capacity development and change management among organizations. It was noted that SIS were likely to reduce their operational costs by 38%.
Kariuki (2005) on the effect of technology adoption on agency banking among commercial banks in Kenya established that there is a positive relationship between SIS and performance despite the challenge of adopting new technologies to enhance service delivery among Commercial Banks in Kenya. Njenga (2009) on mobile phone banking on performance of Commercial Banks in Kenya revealed that a number of challenges are experienced by Commercial Banks in Kenya during adoption of SIS to gain competitiveness.

Petter and DeLone (2013) posit that employee resistance to accept new technologies, lack of financial resources to invest in modern systems and lack of management support are among the internal aspects that have contributed to deteriorating performance of Commercial Banks in Kenya. The need for convenient ways of accessing financial resources beyond the conventional norms has seen the recurrent expansion and modernization of banking patterns.

Aduda (2012) on the relationship between electronic banking and financial performance among commercial banks in Kenya established that investments in information systems has a positive relationship with the performance of Kenya Banks Commercial Banks in Kenya have been investing in SIS in order to increase efficiency and to reduce errors which are a result of insufficient or wrong data. The banks focus on embracing the latest technology in carrying out their operations efficiently and effectively and also in creating competitive products.
However, from the findings of previous empirical studies, little has been done with regard to Strategic Information Systems and performance of Commercial Banks in Nyeri County, Kenya. Conceptual, contextual and methodological gaps are established from the previous studies carried out, Firstly, some of the studies conducted focused on different variables like leadership, technology, continuous improvement but did not focus on the variables of this study.

On the other hand, some studies were carried out in different countries and focused on different sectors like; manufacturing, microfinance institutions, Sacco’s and learning institutions. Finally, some studies adopted causal, cross sectional and longitudinal research designs but this study adopted descriptive research design. Furthermore, it was noted that some studies adopted factor analysis method but this study will adopt multiple regression analysis to establish the statistical relationship between variables. Therefore, it was for this reason this study sought to answer the question, what was the influence of Strategic Information Systems on the performance of Commercial Banks in Nyeri County, Kenya.

1.3 Research Objectives

1.3.1 General objective

The general objective of the study was to determine the effect of Strategic Information Systems and performance of Commercial Banks in Nyeri County, Kenya.

1.3.2 Specific Objectives

The research Objectives of this study were:

i. To establish the influence of internet banking on the performance of Commercial Banks in Nyeri County.
ii. To determine the influence of mobile banking on the performance of Commercial Banks in Nyeri County.

iii. To determine the influence of Automated Teller Machines on the performance of Commercial Banks in Nyeri County.

1.4 Research Questions

The research Questions of this study were:

i. What is the influence of internet banking on the performance of Commercial Banks in Nyeri County?

ii. What is the influence of mobile banking on the performance of Commercial Banks in Nyeri County?

iii. What is the influence of Automated Teller Machines on the performance of Commercial Banks in Nyeri County?

1.5 Scope of the Study

The study focused on Commercial Banks operating in Nyeri County to establish the effect of Strategic Information Systems on their Performance. The study adopted a census approach where information from every member of the population was sought to establish the problem under investigation. A census was preferred due to the number of Commercial Banks operating in Nyeri and information was sought from each member to enhance accuracy of the research findings. Respondents of the study were; Branch managers, Operations Managers, Credit Officers and Accountants. The variables of the study were internet banking, mobile banking and Automated Teller machines. The study was carried out for a period of three months.
1.6 Significance of the Study

Banking Industry would identify the influence of strategic information systems on performance and thus the study would enable these banks to come up with ways and means to exploit these systems so as to improve their performance. The study would come in hand to support the government as a regulator in its quest to streamline operations in the banking industry putting in mind that the economy as a whole relies on how the banking sector performs.

The study would benefit directors, managers and other leaders in financial institutions in understanding how SIS affects performance. These employees would benefit from the study as they would be able to identify some of the SISs that have made banks competitive. Other researchers can use the findings of the study for reference and further studies.

It could also help them in the future as a source of secondary data when researching on related fields in different areas on interest. Bank customers would also use the findings to gain insight on the various types of strategic information systems that they can exploit to access banking services at a reduced cost which would lead to improved customer service satisfaction, accessibility to information and efficient day to day transactions.

1.7 Limitations of the Study

The limitations took on conceptual, contextual, and methodological manifestations. Conceptually, the study only focused on strategic information systems on
performance of Commercial Banks in Nyeri County, Kenya but not other Counties. This limitation was overcome by suggesting further studies to be done in other 46 Counties.

Gathering accurate information from the respondents was one of the major challenges since they were threatened that the information may be used against them by the management in the terms of performance hence insecurity of their jobs. Assuring the respondents of the confidentiality of the information they gave, minimized the challenge. The respondents were unwilling to give the information due to the sensitivity of disclosing company matters that required high-level directives and guidelines.

Methodologically, this study relied on employees of Commercial Banks and in the absence of the interviewer, these questionnaires could have been answered by other subordinate staff, whom did not have accurate information about the problem, therefore creating a source of bias. The methodology adopted by the study was quantitative in nature that may have been comprised during coding process. This was overcome by confirming quantitative figures before coding.

1.8 Organization of the Study

Chapter one discusses the background of the study, strategic information system, organizational performance, performance of commercial banks in Nyeri County, statement of the problem, research objectives, research questions, scope of the study, significance and limitations of the study.
Chapter two outlines theories that informed the study and include; technology acceptance theory, resource based view theory and dynamic capability theory, related empirical studies carried out locally and internationally are discussed, summary of conceptual, contextual and methodological knowledge gaps are also discussed and finally critique of literature and conceptual framework.

Chapter three discusses the methodology that was utilized by the study and including; the research design, target population, sample size and sampling procedure, data collection instruments, validity and reliability of the instrument and data analysis techniques.

Chapter four presents the results of statistics analysis, presentation, interpretation and discussion. Chapter Five represents summary of the findings according to the objectives of the study, conclusion and recommendations.
CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter outlines the theoretical review of the study, empirical review, summary of knowledge gaps, critique of literature and conceptual framework.

2.2 Theoretical Review of the Study

A theory is the analytical tool for understanding, explaining, and making predictions about a given subject matter (Kothari, 2004). Theories that were adopted to inform this study included; Technological Acceptance Theory, Resource based View Theory and Dynamic Capability Theory as discussed:

2.2.1 Technology Acceptance Theory (TAM)

The Technology Acceptance theory was initially proposed by Davis (1989). The main elements of the theory as proposed by Davis are; perceived usefulness, perceived ease of use, attitude toward using technology, and behavioral intention. The attitude of customers toward adoption of new ideas will dictate the adopter’s positive or negative behavior in the future concerning new technology. The theory suggests that perceived usefulness and perceived ease of use determine an individual's intention to use a system with intention to use serving as a mediator of actual system use.

Perceived usefulness is also observed as being directly impacted by perceived ease of use (Ravichandran & Lertwongsatien, 2005). The Technology Acceptance theory suggests that perceived usefulness and perceived ease of use are the two most important individual beliefs about using an information technology. Perceived
usefulness is defined as “the degree to which a person believes that using a particular system would enhance his or her job performance”. The definition of perceived usefulness is based on the expectancy-value model underlying the Theory of Reasoned Action.

Chandan and Urhuogo (2012) argue that perceived ease of use involves the degree to which a person believes that using a particular system would be free of effort”. These two behavioral beliefs, perceived usefulness and perceived ease of use, then lead to individual behavior intention and actual behavior. Davis finds that perceived usefulness is the strongest predictor of an individual’s intention to use an information technology (Reddy, Srinivas, Rikkula & Rao, 2009). The technology acceptance theory underpins the study through describing how Commercial Banks adopt strategic Information Systems to influence their performance.

Kanini (2008) suggests that the tendency of customers accepting or rejecting an innovation launched is high or low if the innovation is perceived to be complex and difficult to be used. The perceived use of the innovation or ICT practice by Commercial Bank customers will contribute to positive or negative performance of the bank. Adequate awareness and orientation of customers with new technologies used by Commercial Bank will minimize the perceived change thus increased adoptability rates of innovation in the banking sector.
2.2.2 Resource Based-View Theory

The Resource based View theory of the firm was established by Penrose (1991) and it holds that a firm achieves sustainable competitive advantage if its resources and capabilities are valuable, rare and isolated from imitation or substitution. According to Petter and DeLone (2013) suggest that a resource is said to be valuable if it enables an organization to improve its market position relative to competitors while it is rare if its available in short supply relative to demand. A resource is isolated from imitation or substitution if it is costly to imitate or to replicate.

Pearce and Robinson (2013) suggest that resources can be managed such that their outcomes cannot be imitated by competitors. This becomes a competitive barrier which in-turn may lead to increased organization performance. According to Kaplan (2010), even after recognizing competitors' valuable resources, a firm may not imitate due to the social context of these resources or availability of more pursuing alternatives. Some resources, like company reputation, are accumulated over time, and a competitor may not be able to perfectly imitate such resources.

According to Alipour and Mahdi (2010), a company’s resources may include all the credits, organizational characteristics, processes, aptitudes, information and knowledge controlled by the company and enabling it to conceive and implement strategies to improve its effectiveness. Leveraging the resources and the core competencies that the company possesses can generate a sustained competitive advantage which, in turn, translates into better performances.
This theory is applicable in this study based on the notion that SIS is a resource modern Commercial Banks are using to gain competitive edge in the changing business environment. Without appropriate SIS among Commercial Banks, performance will be an uphill task. Commercial banks are likely to succeed if they utilize modern technologies in their service delivery. SIS has remained the only resource modern firms are using to gain competitive edge against their competitors in multiple sectors.

2.2.3 Dynamic Capability Theory

Dynamic Capability Theory founded by Teece et al. (1997). The theory was founded on the notion that firms are likely to remain competitive if they have the ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments. King (2009) suggests that dynamic capability is the capacity of an organization to purposefully create, extend or modify its resource base. Dynamic capabilities enable firms to enter new businesses and extend old ones through internal growth, acquisition and strategic alliances or to create new products and production processes.

Hendriks, Hora, Menor and Wiedman (2012) suggest that the ability of the firm to react adequately and timely to external changes requires a combination of multiple capabilities. The dynamic capabilities are built rather than bought in the market. They are formed through routines which have become embedded in the firm over time, and are employed to reconfigure the firms’ resource base by deleting decaying resources.
or recombining old resources in new ways. Dynamic capabilities are made up of four main processes: reconfiguration, leveraging, learning and integration.

Reconfiguration refers to the transformation and recombination of assets and resources, Leveraging refers to the replication of a process or system that is operating in one area of a firm into another area, or extending a resource by deploying it into a new domain, integration refers to the ability of the firm to integrate and coordinate its assets and resources, resulting in the emergence of a new resource base (Hernando & Nieto, 2006).

This theory is applicable in this study based on the assumption that Commercial Banks in Kenya have shifted from the conventional practices of doing business. In the changing business environment, most of the banks are integrating new technologies to remain competitive in the local and global markets. SIS is the only capabilities that will enable the Banks sail through changing business environment. With the invention of new technologies, customers have changed ways of accessing financial services and opted to use internet enables platforms to meet their needs more conveniently.

2.3 Empirical Review

2.3.1 Internet Banking and Organizational Performance

Kanini (2008) on implementing strategic information systems in commercial banks in Kenya established that investment in SIS by Commercial banks has led to provision of state-of-the-art services to customers allowing rapid growth and increased bank's
performance in a very competitive marketplace. The investments in SIS by these banks have mainly been influenced by rapid geographical expansion where the banks invest in systems that allow inter linkage between branches and head office.

Further Kanini (2008) avers that Strategic Information Systems have contributed to business process re-engineering aimed at reducing expenses and thus increasing profitability; lack of compatibility between the old systems and the strategic necessity of integrating new technologies like ATMs, telebanking, e-commerce in order to provide the high quality services to the customers and competing on the same level with the foreign banks. However, data analysis method adopted in this study was multiple regression intended to establish a relationship between variables of the study.

Jayawardhena and Foley (2000) on changes in the banking sector—the case of internet banking in the UK, established that majority of the banks have invested in internet banking in a bid to tap into tech savvy customers who can transact through the internet. Internet banking can be viewed as a delivery channel which helps to overcome the inherent disadvantages of a traditional mortar and brick branch. The use of internet banking to carry out transactions has a positive influence on bank performance.

Kanini (2008) avers that adoption of internet banking as a delivery channel gradually reduces overhead expenses and in turn leading to increased profits. The study adopt factor analysis method that was not appropriate for this study and had quantitative
weaknesses. Contextual and ethical considerations were some of the limitations of the study.

Muriuki (2011) on effect of technology adoption on agency banking Among Commercial Banks in Kenya established that banking industry has been embracing new strategic information systems in order to fulfill the dreams of their customers and to create healthy competition. The new banking environment is all about differentiating banking products, increased choices, security and accessibility. Strategic information systems have led to improved delivery of service to customers.

Customers have a wide range of alternative service channels to choose from. This has reduced the dependence on the branch network as a core delivery mechanism. The study adopted descriptive research design and regression analysis as a data analysis method. The limitation of the study was that the researcher used a large sample of 2300 respondents that was unrealistic to analyze. Continuous changing customer needs and wants has led banks to explore ways of differentiating products, increasing variety of choices for the customers and ensuring accessibility to the customers which has led to investments in strategic information systems.

Salwe, Ahmed, Aloufi, Kabir, (2010) on strategic information systems alignment with business strategy found out that through increased service channels, SIS has also contributed to an increased market share as more customers continue to enroll for these services. The study recommended that there is need to understand the changes that technology was causing on the banking sector in order to examine in detail how
the recent and foreseeable advances in technology is affecting the various aspects of the banking sector.

2.3.2 Mobile Banking and Organizational Performance

Musangu and Kekwaletswe (2011) on strategic information systems planning and environmental uncertainty: the case of South African small micro and medium enterprises established that mobile banking is a service which allows customers of a bank to access a number of banking services such as making financial transactions and inquiries through a mobile device. Mobile banking offers commercial banks an opportunity to reach their customers through branchless banking. The services are offered both on Smart and non-smart devices. The study concluded that mobile banking has been a key method of reaching the unbanked population who for a long time has not accessed banking services offered through traditional brick and mortar banking.

Nakhumwa (2013) on adoption of e-commerce payment systems by Commercial Banks in Kenya established that there is a statistical relationship between SIS and performance of banks. The study observed that SIS provide opportunities to top level managers to make timely decision to support activities such as goal setting, planning, forecasting and tracking performance. Through SIS, an organization is able to improve quality of management in the organization through new type of technology and techniques that allow extracting, transforming, processing and presenting data that is used for strategic decisions.
It is concluded by their study that SIS is of great value to organizational performance despite the implementation challenges. Descriptive research design was adopted in this study. The weakness of this study were that respondents were not willing to give intended information due to insecurity of their jobs. However, the sample of the study was not adequate to be generalized. The summary of the findings were not supported by literature.

Njenga (2009) on mobile phone banking and usage experiences in Kenya revealed that adoption of SIS has influenced competition and the degree of contestability in banking industry. Entry barriers have declined leading to new entrants and stiffer competition. This has led to banks coming up with more innovative products and thus attracting more customers. Solutions such as internet banking have eliminated time and distance as barriers to banking as customers can access the service each day, any time of the day. These solutions have helped reduce banks operating costs resulting in cheaper transaction costs for customers.

A study by Siami (2006) also revealed that SIS has benefited banks by allowing innovation of products and service that the customer needed but maybe never asked for. Such services include online bill payments which allow a customer to pay their bills online at their own time. Through this feature a customer can schedule the bill payments in advance, set up recurring payments on regular bills and even view the payment history. The study adopted descriptive research design and a multiple regression method as a data analysis method. Ethical issues on respondents were not addressed by the study.
2.3.3 Automated Teller Machines (ATM) and Organizational Performance

Teymouri Ashoori (2010) on the impact of information technology on risk management established that ATMs provide convenience to customers as one is able to access their account throughout the ATM network. Wajid, Omar, Sultan and Ehsan (2012) on the impact of information Technology on efficiency of Banks in Pakistan established that Banks have increased the number of ATM locations while majority have linked their networks to networks of other banks.

In addition, their study noted that ATM services were enhancing operations and customer satisfaction in terms of flexibility of time; add value in terms of speedy handling of voluminous transactions which traditional services were unable to handle efficiently. These machines allow customers to deposit and withdraw cash at more convenient time and places than during banking hours at branch. Cross sectional research design was adopted. Data was analyzed using inferential statistics. The limitation of the study was that recommendations were not accurate and ethical considerations were not valued.

Ratan (2008) on using technology to deliver financial services to low-income households in Equity Bank in Kenya established that effective service delivery through ATMs guarantees quality excellence and superior performance and provides independence to the customers. Customer focused ATM delivery systems that fulfil the customers’ needs and maximize operational performance are an essential dimension for bank to achieve and sustain competitive advantage.
Furthermore, their study revealed that a bank can benefit through cross selling products more effectively, help sales staff close deal faster, provide better customer service and increasing revenue from customers. Investing in Ecommerce help strengthen customer relations and create opportunities to sell products. The research design adopted was longitudinal. Regression data analysis method was adopted. The limitation of the study was that the researcher over relied on journals rather than textbooks.

Nakhumwa (2013) on adoption of e-commerce payment systems by Commercial Banks in Kenya established that banks support the contention that investments in electronic commerce create value for shareholders. Excess returns are generated in the period leading up to the announcement by the bank of an investment in unique electronic commerce. Electronic commerce investments made during the subsequent decade are likely to provide relatively lower benefits to first movers, sufficient to reduce average excess returns to zero.

The results of their study support the proposition that the market values investments in non-innovative electronic commerce projects and, in doing so, provides some evidence that these types of investments are seen as being consistent with a firm’s information technology capabilities. However, it was noted that the study had a number of weaknesses. The studies adopted descriptive research design. Inferential statistics was used to analyze data. Therefore, inability to adopt relevant theories by the study was the limitation of the study.
Bhatnagar (2012) on customer relationship management in banking need for a strategic approach revealed that mere investment in IT will not result in superior performance, but the organization must work and identify innovative ways to create firm-wide IT capability. The benefits from IT are usually implicit in that it improves product design, better customer satisfaction, increased market responsiveness, so synergy across organizational units and with suppliers and customers is necessary, to grab the potential of IT.

However, it was noted that the study had a number of limitations. For instance, cross sectional design was adopted and content analysis method. Theories adopted in this study did not reflect the topic thus posing conceptual limitations. The study was too wide in scope and the representative sample was difficulty to choose. The methodology of data analysis was not appropriate. Multiple regression was to be adopted to establish the relationships between variables.

Aduda and Kingoo (2012) on the relationship between electronic banking and financial performance among Commercial Banks in Kenya revealed that investment in e-banking has a positive relationship with bank performance at 1% level. Investments in SIS has had a strong influence on the structure and the activities of the banking sector as it allows transactions to be conducted more efficiently, technology allows banks to market their products more effectively.

Their study concluded that as banks build up sophisticated databases containing information about their consumers, and through data mining they are then able to
target their commercial efforts more precisely, knowing which range of products individual consumers might be interested in buying. Some of the limitations of this study were; too little sample used to generalize the total population, the study looked independent variables from a holistic perspective rather than independent view.

**Table 2.1: Summary of Knowledge Gaps**

<table>
<thead>
<tr>
<th>Author</th>
<th>Focus of the Study</th>
<th>Findings</th>
<th>Knowledge Gaps</th>
<th>Focus on the Current Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nakhumwa (2013)</td>
<td>Adoption of e-commerce payment systems by Commercial Banks in Kenya</td>
<td>Established that banks support the contention that investments in electronic commerce create value for shareholders</td>
<td>Focused on E-commerce but not SIS</td>
<td>To establish the effect of ATM on performance of Commercial Banks in Nyeri County</td>
</tr>
<tr>
<td>Nakhumwa (2013)</td>
<td>Adoption of e-commerce payment systems by Commercial Banks in Kenya</td>
<td>established that there is a statistical relationship between SIS and performance of banks</td>
<td>Focused on E-commerce but not SIS</td>
<td>To establish the effect of mobile banking on performance of Commercial Banks in Nyeri County</td>
</tr>
<tr>
<td>Bhatnagar (2012)</td>
<td>Customer relationship management in banking need for a strategic approach</td>
<td>Revealed that mere investment in IT will not result in superior performance, but the organization must work and identify innovative ways to create firm-wide IT capability</td>
<td>Focused on Customer Relations Management but not SIS</td>
<td>To establish the effect of ATM on performance of Commercial Banks in Nyeri County</td>
</tr>
<tr>
<td>Aduda and Kingoo (2012)</td>
<td>The relationship between electronic banking and financial performance among Commercial Banks in Kenya</td>
<td>Revealed that investment in e-banking has a positive relationship with bank performance at 1% level.</td>
<td>Focused on electronic banking and financial performance but not the effect of SIS on performance of Commercial Banks</td>
<td>To establish the effect of ATM on performance of Commercial Banks in Nyeri County</td>
</tr>
<tr>
<td>Wajid, Omar, Sultan, Ehsan (2012)</td>
<td>the impact of information Technology on efficiency of Banks</td>
<td>Established that Banks have increased the number of ATM</td>
<td>The study was conducted in Pakistan and efficiency of</td>
<td>To establish the effect of ATM on performance of Commercial Banks</td>
</tr>
<tr>
<td>Source</td>
<td>Title</td>
<td>Summary</td>
<td>Focus</td>
<td>Location</td>
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<td>--------</td>
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</tr>
<tr>
<td>Muriuki (2011)</td>
<td>Effect of technology adoption on agency banking Among Commercial Banks in Kenya</td>
<td>Established that banking industry has been embracing new strategic information systems in order to fulfill the dreams of their customers and to create healthy competition.</td>
<td>Focused technology and agency banking</td>
<td>To establish the effect of internet banking on performance of Commercial Banks in Nyeri County</td>
</tr>
<tr>
<td>Musangu and Kekwaletswe (2011)</td>
<td>Strategic information systems planning and environmental uncertainty: the case of South African small micro and medium enterprises</td>
<td>Established that mobile banking is a service which allows customers of a bank to access a number of banking services such as making financial transactions and inquiries through a mobile device.</td>
<td>Focused on Small Medium Enterprises in Africa but not Commercial Banks in Kenya</td>
<td>To establish the effect of mobile banking on performance of Commercial Banks in Nyeri County</td>
</tr>
<tr>
<td>Teymouri Ashoori (2010)</td>
<td>The impact of information technology on risk management</td>
<td>Established that ATMs provide convenience to customers as one is able to access their account throughout the ATM network.</td>
<td>Focused on Information Technology on risk management but not SIS on performance</td>
<td>To establish the effect of mobile banking on performance of Commercial Banks in Nyeri County</td>
</tr>
<tr>
<td>Salwe, Ahmed, Aloufi, Kabir, (2010)</td>
<td>Strategic Information Systems alignment with business strategy</td>
<td>Found out that through increased service channels, SIS has also contributed to an increased market share as more customers continue to enroll for these services.</td>
<td>Focused on alignment of SIS but not the effect of SIS on performance of Commercial Banks</td>
<td>To establish the effect of internet banking on performance of Commercial Banks in Nyeri County</td>
</tr>
<tr>
<td>Njenga (2009)</td>
<td>Mobile phone banking and usage experiences in Kenya</td>
<td>Revealed that adoption of SIS has influenced competition and the degree of contestability in banking industry.</td>
<td>Focused on mobile phone banking and usage but not SIS on performance of Commercial Banks</td>
<td>To establish the effect of mobile banking on performance of Commercial Banks in Nyeri County</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Title</td>
<td>Findings</td>
<td>Focus</td>
<td>Study Objective</td>
</tr>
<tr>
<td>------------------------</td>
<td>----------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Ratan (2008)</td>
<td>Using technology to deliver financial services to low-income households in Equity Bank in Kenya</td>
<td>established that effective service delivery through ATMs guarantees quality excellence and superior performance and provides independence to the customers</td>
<td>Focused on use of technology but not SIS on performance of Commercial Banks</td>
<td>To establish the effect of ATM on performance of Commercial Banks in Nyeri County</td>
</tr>
<tr>
<td>Kanini (2008)</td>
<td>Implementing strategic information systems in commercial banks in Kenya</td>
<td>Established that investment in SIS by Commercial banks has led to provision of state-of-the-art services to customers allowing rapid growth and increased bank's performance in a very competitive marketplace.</td>
<td>Focused on implementation of strategic information systems and different variables like training, culture and policies but not variable of this study</td>
<td>To establish the effect of internet banking on performance of Commercial Banks in Nyeri County</td>
</tr>
<tr>
<td>Siami (2006)</td>
<td>Role of electronic banking services on the profits of Jordanian banks</td>
<td>Revealed that SIS has benefited banks by allowing innovation of products and service that the customer needed but maybe never asked for.</td>
<td>Focused on the role of electronic banking but not SIS on performance of Commercial Banks</td>
<td>To establish the effect of mobile banking on performance of Commercial Banks in Nyeri County</td>
</tr>
<tr>
<td>Jayawardhena and Foley (2000)</td>
<td>Changes in the banking sector-the case of internet banking in the UK</td>
<td>Established that majority of the banks have invested in internet banking in a bid to tap into tech savvy customers who can transact through the internet.</td>
<td>Focused on the Banking sector in the UK but not Commercial Banks in Nyeri County, Kenya</td>
<td>To establish the effect of internet banking on performance of Commercial Banks in Nyeri County</td>
</tr>
</tbody>
</table>
2.4 Critique of Literature

From the previous empirical studies conducted locally and internationally by; (Nakhumwa, 2013; Nakhumwa, 2013; Bhatnagar, 2012; Aduda and Kingoo 2012; Wajid, Omar, Sultan, Ehsan, 2012; Muriuki, 2011; Musangu and Kekwaletswe, 2011; Teymouri Ashoori, 2010; Salwe, Ahmed, Aloufi, Kabir, 2010; Njenga, 2009; Ratan, 2008; Kanini, 2008; Siami, 2006; Jayawardhena and Foley, 2000) it evident that conceptual, contextual and methodological gaps do exist. Firstly, most of the studies focused on different variables like Technology, efficiency, e-commerce and change management but not variables of this study.

Secondly, some of the studies were carried in different countries like Pakistan, United States and Nigeria and cannot be compared to the Kenyan context. Local studies carried out focused in different sectors and did not specifically address the influence of Strategic Information System on the performance of Commercial Banks in Nyeri County, Kenya. Thirdly, the methodologies of data analysis by different researchers varied and cannot be relied in this study. Therefore, it is for this reason this study is geared towards investigating the influence of Strategic Information System on the performance of Commercial Banks in Nyeri County, Kenya.

2.5 Conceptual Framework

According to Sekeran (2011), a conceptual framework is a group of concepts that are broadly defined and systematically organized to provide a focus, a rationale, and a tool for the integration and interpretation of information. The framework describes
the interrelationship between the independent variables and dependent variable using concepts of the already existing theories to solve the problem under investigation.

**Strategic Information Systems**

**Internet Banking**
- Online deposits and withdrawals
- Online money transfer

**Mobile Banking**
- Mobile deposits and withdrawal
- Mobile SMS alerts
- Mobile money transfers

**Automated Teller Machine**
- ATM deposits and withdrawal
- ATM money transfers

**Performance of Commercial Banks in Nyeri County, Kenya**
- Profitability
- Costs of Operation
- Liquidity
- Customer service

**Independent Variables**

**Dependent Variable**

*Figure: 2.1 Conceptual Framework*

*Source: Author (2017)*
It was established as shown in Figure 2.1 above that internet banking; mobile banking and ATM had a positive significant effect on performance of Commercial Banks in Nyeri County, Kenya. It was revealed that Commercial Banks are experiencing improved performance by embracing internet banking practices. Internet banking enhanced online deposit and withdrawals, and customer enquiries.

Online banking through traditional banks enabled customers to perform all routine transactions, such as account transfers, balance inquiries, bill payments, and stop-payment requests, and some even offered online loan applications. Customers also accessed their account information at any time, day or night, and this was done from anywhere. Mobile banking also enhanced mobile deposit and withdrawals, SMS alerts and money transfer services among customers thus efficiency and effectiveness.

The scope of offered services included facilities to conduct bank and stock market transactions, administer accounts and to access customized information. Automated Teller Machines also promoted deposit and withdrawal services, money transfer services and enquiries. It significantly improved customer convenience and reducing costs and this led to improved efficiency and profitability in service delivery of the Commercial Banks.
CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter focuses on the researcher’s scope of methodological procedures that were employed in the study. These include; research design, target population, sample size and sampling procedure, data collection instruments, validity and reliability of the instrument and data analysis techniques.

3.2 Research Design

The study was adopted a descriptive research design to establish Strategic Information Systems and Performance of Commercial Banks in Nyeri County, Kenya. Kothari (2004) regard the research design as an arrangement of conditions for collection and analysis of data in a manner that aimed to combine relevance to the research purpose with economy in procedures. The descriptive study method was appropriate because it explores and describes the relationship between variables in their natural setting without manipulating them.

The descriptive study aims at obtaining information that can be analyzed, patterns extracted and comparison made for the purpose of clarification and provision of basis for making decisions. Both qualitative and quantitative data were obtained for comparison purposes. Cooper and Schindler (2006) acknowledge the importance of descriptive design especially when the intent is gaining broader understanding of the context of the research and processes being enacted. Moreover, they argue that the
design has considerable ability to generate answers to the questions of why, where, what and how.

3.3 Target Population

A census approach was adopted where, information was sought from all Commercial Banks (10) operating in Nyeri County. Respondents of the study were all 185 employees selected from 10 commercial banks operating in Nyeri County, Kenya. The respondents were employees of commercial banks which operated in Nyeri County, Kenya.

According to Kothari (2006), a census is the procedure of systematically acquiring and recording information about the members of a given population. Information from every member of the population was sought to establish the problem under investigation. A census was preferred because the Commercial Banks operating in Nyeri were limited in number and collection of data from the ten commercial banks enhanced the accuracy of the findings to establish the problem under investigation.

3.4 Data Collection

Primary data was collected from respondents by the use of questionnaires as the instrument of data collection (Cooper & Schindler, 2006). In this study, structured questionnaires that comprised of closed and open-ended questions were used to collect data from all employees who worked in 10 Commercial Banks operating in Nyeri County. Respondents of the study were employees of commercial banks which are operating in Nyeri County, Kenya.
Questionnaires were administered to respondents by the researcher during working hours. Drop and pick later method was applied where respondents had no time to respond immediately. Sekaran (2011) asserts that questionnaires are preferred instruments of data collection in scientific studies because of their opportunity to capture respondent opinions in a structured manner and in written form for future reference.

Questionnaires assisted in the translation of the research objectives into research hypothesis which motivated the respondents to provide the information being sought. They also enabled the respondents to answer questions freely and frankly even on sensitive issues because they were not required to reveal their identity, this increased the likelihood of getting accurate information. Finally, they offered an opportunity of uniformity in answering questions allowing a great degree of comparison because the items were framed in the same format.

3.5 Data Collection Procedures

Permission to collect data from Commercial Banks and Kenyatta University was sought before data collection. As proposed by Cooper and Schindler (2006), it is ethical to seek permission when conducting scientific studies.

Relevant stakeholders that the study affected were informed of the objective of the study and confidentiality of the information given. The questionnaires were administered through face-to-face method of collecting data. The questionnaire was
designed based on the deductive arguments of the theories discussed in the literature review.

3.6 Validity and Reliability of the Research Instrument

3.6.1 Validity of the Research Instrument
The validity of the instrument was determined by the researcher through seeking opinions of experts in the field of study especially the researcher’s supervisor and industry strategic management consultants. Validity entails the appropriateness, meaningfulness and usefulness of inferences a researcher makes based on the data collected (Saunders, Lewis & Thornhill, 2009). An appropriate inference was one that was relevant to the purpose of the study while a meaningful inference was one which said something about the meaning of the information obtained through the use of the instruments. Content, criterion, and construct related validity were measured using the research instrument.

3.6.2 Reliability of the Research Instrument
Reliability involves the extent to which a measuring device is consistent in measuring whatever it measures (Saunders, Lewis & Thornhill, 2009). It involves a measure of the degree to which a research instrument yields consistent research or data after repeated trials. Reliability of the instruments is influenced by random error which is a deviation from a true measurement due to factors that have not effectively been addressed by the researcher. Cooper and Schindler (2006) suggest that the reliability of each construct was examined to ensure the items collectively measured their intended constructs consistently as recommended.
Internal consistency reliability was examined by use of Cronbach’s Alpha coefficient. Cronbach’s Alpha is the most widely used measure of the reliability of instruments in the social sciences. It indicates the extent to which a set of test items can be treated as measuring a single latent variable. In addition, the Cronbach Alpha coefficient has the advantage of producing a reliability estimate with only one administration. Kothari (2006) noted that acceptance value for Cronbach’s Alpha is between 0.7 and 0.9. However, Cooper (2004) argues that an alpha coefficient of 0.5 or greater is adequate to accept presence of internal consistency. A loading of 0.7 indicates that about one half of the items variance was attributed to the construct. Cronbach’s formular that was adopted was in the form of:

\[ \alpha = \frac{N \cdot \bar{c}}{\bar{v} + (N - 1) \cdot \bar{c}} \]

Where;

\( N \) is equal to the number of items,

\( \bar{c} \) is the average inter-item covariance among the items and

\( \bar{v} \) is equal to the average variance.
Table 3.1: Reliability Results

<table>
<thead>
<tr>
<th>Variables</th>
<th>No. of Items</th>
<th>Cronbach Alpha</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet Banking</td>
<td>1</td>
<td>0.842</td>
<td>Reliable</td>
</tr>
<tr>
<td>Mobile Banking</td>
<td>1</td>
<td>0.724</td>
<td>Reliable</td>
</tr>
<tr>
<td>Automated Teller Machines</td>
<td>1</td>
<td>0.718</td>
<td>Reliable</td>
</tr>
<tr>
<td>Performance of Commercial Bank’s</td>
<td>1</td>
<td>0.795</td>
<td>Reliable</td>
</tr>
</tbody>
</table>

Source: Research data (2017)

As shown in Table 4.1, all the four variables were reliable since reliability coefficients were more than 0.7 thresholds stipulated by Zikmund (2000).

3.7 Data Analysis and Presentation

To analyze the data, the Statistical Package for Social Sciences, (SPSS version 20) software was used. The data collected was edited, coded and classified on the basis of similarity and then tabulated. Cooper and Schindler (2001) assert that the core function of the coding process was to create codes and scales from the responses, which could then be summarized and analyzed in various ways. To permit quantitative analysis, data was converted into numerical codes representing attributes or measurement of variables.

Correlation and Multiple regression methods were adopted to determine the statistical relationship between variables. The three independent variable was regressed against the dependent variable to determine the quantitative effect created on the dependent variable. Descriptive and inferential statistics like mean, standard deviation,
frequency distributions and percentages were used to summarize and relate variables which were attained from the administered questionnaires. The analyzed data was presented in form of tables. Correlation and Regression data analysis methods were conducted at 95% confidence level ($\alpha = 0.05$). Specifically the regression model was of the form:

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon \]

Where;

- $Y =$ Performance of Commercial Banks in Nyeri County
- $\beta_0 =$ $Y$ intercept
- $\beta_1$ to $\beta_3 =$ regression coefficients
- $X_1 =$ Internet Banking
- $X_2 =$ Mobile Banking
- $X_3 =$ Automated Teller Machines
- $\varepsilon =$ Error term

### 3.8 Ethical Consideration

The researcher sought permission from National Commission for Science, Technology and Innovation (NACOSTI). Further, permission from the management of Commercial Banks and Kenyatta University to collect data was sought before data collection. Responsibility to the respondents included voluntary participation and informed consent prior to participation. To ensure the participants were not prejudiced, simple language and statements were used to describe the aim of the research and its procedures.

Responsibility to the profession included accuracy in analysis, presentation and reporting of the study findings. Confidentiality and anonymity of the respondents was guaranteed. As noted by Kothari (2004) it is appropriate to seek permission from
relevant stakeholder before data collection in any scientific research. For objectivity purposes of scientific research, stakeholders should be informed and the objective of the research explained to enhance willingness and high response rates from the respondents.
CHAPTER FOUR: RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction
This chapter presents the research findings of the study carried out to examine the influence of strategic information systems on the performance of Commercial Banks in Nyeri County, Kenya. These research objectives that guided the study were: To determine the effects of internet banking, mobile banking, and automated teller machines on performance of Commercial Banks in Nyeri County, Kenya.

4.2 Pilot Study
Before data collection, a pilot study was conducted on using employees of Commercial Banks in Embu County to test the items of the instrument before full scale administration. Items of the instruments were modified appropriately before full scale administration of the instruments among 185 respondents. After pilot testing, it was established that 97% of the respondents were comfortable with items of the instrument and it was justifiable to administer the instrument to 185 respondents as the study stipulated.

4.3 Response Rate
The study targeted a total of 10 Commercial Banks’s operating in Nyeri County, Kenya. Out of the 185 questionnaires administered to employees of the 10 Commercial Banks in Nyeri County, only 173 questionnaires were returned duly filled by employees of Commercial Banks. This contributed to 94% response rate from employees of Commercial Banks. This response rate was adequate for data
analysis and conforms to Cooper and Schindler (2006) whom stipulates that a response rate of more than 50% is justifiable to make accurate decisions concerning the problem under investigation in any scientific studies. In addition, this chapter provides discussions of the findings of this study in relation to existing literature.

4.3 Employee Period of Work

Respondents were asked to indicate the period they had worked with their Commercial Banks and the findings were summarized as shown in Figure 4.1.

![Employee Period of Work](image)

**Figure 4.1 Employee Period of Work**

Source: Research data (2017)

As shown in Figure 4.1, majority of the respondents (70%) had worked with their Commercial Banks for more than 10 years. 14% of them had worked for a period of 6 to 10 years. 5% had worked for a period of 1 to 5 years and 1% had worked for a
period less than one year. This implied that majority of the respondents contacted had adequate information in relation to strategic information systems on the performance of their Commercial Banks.

**4.4 Level of Education**

Respondents were asked to indicate their level of education and the findings were summarized as shown in Figure 4.2.

![Figure 4.2 Respondent Level of Education](image)

As shown in Figure 4.2, majority (66%) of the respondents were degree holders. 25% were diploma holders. 5% of them were certificate holders and 4% were postgraduate holders. This implied that majority of the Commercial were engaging employees with
a bachelor’s degree as the minimum entry requirement as spelt out in the recruitment policy.

4.5 Strategic Information Systems

Respondents were asked to indicate whether their Commercial Banks had operational Strategic Information Systems and the findings were summarized as shown in Table 4.1.

Table 4.1: Strategic Information Systems

<table>
<thead>
<tr>
<th>Opinion</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>47</td>
<td>88</td>
</tr>
<tr>
<td>No</td>
<td>09</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>56</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Research data (2017)

As shown in Table 4.1, majority (88%) of the respondents indicated that their Commercial Banks had operational strategic systems while 12% of them indicated that their Commercial Banks had no operational strategic information systems. This implied that majority of the Commercial Banks were embracing strategic information systems to enhance efficiency and effectiveness despite the few internal and external challenges.

4.6 Internet Banking

Respondents were asked to indicate the extent to which they agreed on how internet banking influence performance of their Commercial Banks and the findings were summarized as shown in Table 4.2.
Table 4.2: Internet Banking

<table>
<thead>
<tr>
<th>Descriptions</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customers carry out their transaction through online services</td>
<td>3.78</td>
<td>1.12</td>
</tr>
<tr>
<td>Customers make online inquiry and transfers</td>
<td>3.61</td>
<td>1.32</td>
</tr>
<tr>
<td>Customers have access to online bill-pay</td>
<td>3.58</td>
<td>1.22</td>
</tr>
<tr>
<td>Customers access to online trust funds</td>
<td>3.47</td>
<td>1.19</td>
</tr>
<tr>
<td>Customers access online deposit accounts</td>
<td>3.33</td>
<td>1.29</td>
</tr>
<tr>
<td>Customers always are updated about their account information monthly through e-statement</td>
<td>2.10</td>
<td>1.05</td>
</tr>
<tr>
<td>Customers always give feedback through online</td>
<td>1.10</td>
<td>1.09</td>
</tr>
</tbody>
</table>

Source: Research data (2017)

As shown in Table 4.2, it was established that majority of the respondents agreed to a larger extent that customers carried out their transaction through online services with a mean of 3.78. However, it emerged that fear of technology from some of the customer had a negative effect on the profitability of Commercial Banks in Kenya. Customers made online inquiry and transferred money with a mean of 3.61. This implied that most of the customers had adequate knowledge on how to make online enquires from their Commercial Banks.

Customers had access to online bill-pay on a larger extent with a mean of 3.58. This implied that most of the customers were in a position to pay their bills through online despite that challenges of interacting with the new systems launched by Commercial
Banks. Customers accessed online trust funds with a mean of 3.47. Customers accessed online deposit accounts with a mean of 3.33. Customers were always updated about their account information monthly through e-statement on a large extent with a mean of 2.10. Customers always gave feedback through online with a mean of 1.10. The major reason behind high adoption of internet banking practices from customer perspective convenience of accessing services from any location in a more cost effective manner.

These findings corresponds with Creswell (2002) who argue that, investment in strategic information systems by firms has led to provision of state-of-the-art services to customers allowing rapid growth and increased firm performance in a very competitive marketplace. Further, Frenzel (1996) concurs that majority of the firms have invested in internet banking in a bid to tap into tech savvy customers who can transact through the internet. The internet banking can be observed as a delivery channel which helps to overcome the inherent disadvantages of a traditional mortar and brick branch.

4.7 Mobile Banking

Respondents were asked to indicate the extent to which they agreed on how mobile banking influence performance of their Commercial Banks and the findings were summarized as shown in Table 4.3.
Table 4.3: Mobile Banking

<table>
<thead>
<tr>
<th>Descriptions</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customers receive balance enquiry alerts though their phone</td>
<td>3.41</td>
<td>1.39</td>
</tr>
<tr>
<td>Customers receive SMS alerts on new banking products and services</td>
<td>3.41</td>
<td>1.31</td>
</tr>
<tr>
<td>Customers make enquiries of their account by phone</td>
<td>2.80</td>
<td>1.94</td>
</tr>
<tr>
<td>Customers can make money transfers from their phone</td>
<td>2.10</td>
<td>1.05</td>
</tr>
<tr>
<td>Customers can deposit to their account through phones</td>
<td>2.10</td>
<td>1.09</td>
</tr>
<tr>
<td>Customers receive periodical promotional messages on new banking products</td>
<td>1.22</td>
<td>1.21</td>
</tr>
</tbody>
</table>

Source: Research data (2017)

As shown in Table 4.3, the study established that majority agreed to a larger extent that; Customers received balance enquiry alerts though their phone with a mean of 3.41. Customers received SMS alert on new banking products and services with a mean of 3.41. Customers made enquiries about their account through phone with a mean of 2.80. Customers made money transfers from their phone with a mean of 2.10. Customers deposited money to their account through phones with a mean of 2.10. Customers received periodical promotional messages on new banking products with a mean of 1.22. This implied that majority of the customers of Commercial Banks had embraced mobile banking practices on large extent despite the few challenges associated with new systems and customer training.

It was further established that most of the Commercial Banks preferred mode of conducting transaction despite challenges of customer information with new
technological developments in the financial sector. These findings concurs with Haynes and Thompson (2000) who argue that mobile banking has been a key method of accessing the unbanked population who for a long time has not accessed banking services offered through traditional brick and mortar banking. Most Commercial Banks in Kenya have strategically partnered with telecommunication service providers to provide mobile banking services to customers more efficiently and effectively.

4.8 Automated Teller Machines

Respondents were asked to indicate the extent to which they agreed on how ATM cards influence performance of their Commercial Banks and the findings were summarized as shown in Table 4.4.

<table>
<thead>
<tr>
<th>Descriptions</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customers prefer an ATM to withdraw money</td>
<td>3.13</td>
<td>1.33</td>
</tr>
<tr>
<td>Customers prefer an ATM due to minimal charges when transacting</td>
<td>3.11</td>
<td>1.44</td>
</tr>
<tr>
<td>Customers prefer an ATM to manage time</td>
<td>2.28</td>
<td>1.34</td>
</tr>
<tr>
<td>Customers prefer an ATM due to its convenience</td>
<td>2.21</td>
<td>1.27</td>
</tr>
<tr>
<td>Customers prefer an ATM for security purposes</td>
<td>2.11</td>
<td>1.31</td>
</tr>
<tr>
<td>Customers prefer an ATM for cashless transfers</td>
<td>2.03</td>
<td>1.54</td>
</tr>
</tbody>
</table>

Source: Research data (2017)
As shown in Table 4.4, the study established that majority agreed to a larger extent that; customers preferred an ATM to withdraw money with a mean of 3.13. Customers preferred an ATM due to minimal charges when transacting with a mean of 2.28. Customers preferred an ATM to manage time with a mean of 2.28. Customers preferred an ATM due to its convenience with a mean of 2.21.

Customers preferred an ATM for security purposes with a mean of 2.11. Customers preferred an ATM for cashless transfers with a mean of 2.03. These findings implied that majority of the customers preferred to transact with ATM cards compared to other means due to convenience of transacting. These findings correspond with Santha et al. (2001) who argue that the use of ATM has become exceptionally admirable and popular among customers as convenient mode of banking transactions. ATM provide customers the opportunity of saving time, cost and convenience when conducting transactions.

Further, Lucas (2005) concurs that that SIS is directly correlated with performance of Commercial Banks in the global market. It is noted that majority of the firms that automate systems have a significant impact on productivity and cost minimization. The SIS are the only window of opportunity to financial institutions in the twenty first century. Also Muriuki (2011) revealed that organizations that integrated technology into internal processes were more likely to be more efficient and effective and vice versa.
4.9 Performance Indicators

Respondents were asked to indicate the extent to which they agreed on the following performance indicators were determined by strategic information systems adopted by their Commercial Banks. The findings were summarized as shown in Table 4.5.

Table 4.5: Performance Indicators

<table>
<thead>
<tr>
<th>Descriptions</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adoption of SIS has contributed to increased profits among Commercial Banks</td>
<td>3.13</td>
<td>1.09</td>
</tr>
<tr>
<td>Adoption of SIS has contributed to minimal costs of operation of the Commercial Banks</td>
<td>3.11</td>
<td>1.04</td>
</tr>
<tr>
<td>Adoption of SIS has led to enhanced customer service delivery among Commercial Banks</td>
<td>2.80</td>
<td>1.44</td>
</tr>
<tr>
<td>Adoption of SIS has contributed to increased members of Commercial Banks</td>
<td>2.80</td>
<td>1.54</td>
</tr>
<tr>
<td>Adoption of SIS has contributed to penetration of Commercial Banks into new markets</td>
<td>2.11</td>
<td>1.35</td>
</tr>
<tr>
<td>Adoption of SIS enable Commercial Banks to increase its asset base</td>
<td>2.09</td>
<td>1.44</td>
</tr>
<tr>
<td>Adoption of SIS enable Commercial Banks to penetrate global markets</td>
<td>2.07</td>
<td>1.34</td>
</tr>
</tbody>
</table>

Source: Research data (2017)

As shown in Table 4.5, the study established that majority agreed to a larger extent that; adoption of SIS could contribute to increased profits among Commercial Banks with a mean of 3.13. Adoption of SIS could contribute to minimal costs of operation of the Commercial Banks with a mean of 3.11. Adoption of SIS could lead to enhanced customer service delivery among Commercial Banks with a mean of 2.80.
Adoption of SIS could lead to enhanced customer service delivery among Commercial Banks with a mean of 2.80.

Adoption of SIS contributed to penetration of Commercial Banks into new markets with a mean of 2.11. Adoption of SIS could enable Commercial Banks to increase its asset base with a mean of 2.09 and adoption of SIS could enable Commercial Banks to penetrate into global markets with a mean of 2.07. This implied that Commercial Banks were likely to remain competitive in the changing business environment if they increased the extent to which they integrated strategic information systems in the delivery of their services.

4.10 Correlations Analysis

Pearson’s product moment correlation analysis was also used to assess the relationship between the variables while multiple regressions was used to determine the predictive power of the strategic information systems and performance of Commercial Banks in Nyeri County as shown in Table 4.6:
The data presented before on internet banking, mobile banking and automated teller machines were computed into single variables per factor by obtaining the averages of each factor. Pearson’s correlations analysis was then conducted at 95% confidence interval and 5% confidence level 2-tailed. Table 4.8 above indicates the correlation matrix between the factors (internet banking, mobile banking and automated teller machines) and performance of Commercial Banks in Nyeri County, Kenya.

According to the Table 4.6, there is a positive relationship between performance of Commercial Banks in Nyeri County and internet banking, mobile banking and
automated teller machines of magnitude 0.710, 0.693 and 0.579 respectively. The positive relationship indicates that there is a correlation between strategic information systems and performance of Commercial Banks in Nyeri County, Kenya. Internet banking having the highest value and automated teller machines having the lowest correlation value.

This notwithstanding, all the factors had a significant p-value (p<0.05) at 95% confidence level. The significance values for relationship between internet banking, mobile banking and automated teller machines were 0.0012, 0.0017 and 0.0023 respectively. This implies that internet banking was the most significant factor, followed by mobile banking and automated teller machines being the least significant.

4.11 Regression Analysis

In addition, the researcher conducted a multiple regression analysis so as to test the statistical relationship among variables (independent) on performance of Commercial Banks in Nyeri County, the researcher applied the statistical package for social sciences (SPSS version 21) to code, enter and compute the measurements of the multiple regressions for the study. Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (performance of Commercial Banks in Nyeri County) that is explained by all the three independent variables (internet banking, mobile banking and automated teller machines).
Table 4.7: Regression Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>0.139</td>
<td>1.2235</td>
<td></td>
<td>1.515</td>
</tr>
<tr>
<td>Internet Banking</td>
<td>0.887</td>
<td>0.1032</td>
<td>0.152</td>
<td>4.223</td>
</tr>
<tr>
<td>Mobile Banking</td>
<td>0.752</td>
<td>0.3425</td>
<td>0.154</td>
<td>3.424</td>
</tr>
<tr>
<td>Automated Teller Machines</td>
<td>0.645</td>
<td>0.2178</td>
<td>0.116</td>
<td>3.236</td>
</tr>
</tbody>
</table>

Source: Research data (2017)

From the finding in table the established regression equation was

Performance of Commercial Banks in Nyeri County = 1.139 + 0.887X₁ + 0.752X₂ + 0.645X₃.

From the above regression model, holding internet banking, mobile banking, automated teller machines to a constant zero, performance of Commercial Banks would be at 0.139. It was established that a unit increase in Internet Banking would cause an increase in performance of Commercial Banks by a factor of 0.887, while a unit increase in Mobile Banking would cause an increase in performance of Commercial Banks by a factor of 0.752, lastly a unit increase in automated teller machines would cause an increase in performance of Commercial Banks by a factor of 0.645.
Therefore, it can be concluded that at 5% level of significance and 95% level of confidence, all the significance values were found to be less than 0.05 an indication that all the values were statistically significant to make the study conclusion. These findings corresponds with (Wajid, Omar, Sultan, Ehsan, 2012; Muriuki, 2011; Musangu & Kekwaletswe, 2011; Teymouri Ashoori, 2010; Salwe, Ahmed, Aloufi, Kabir, 2010; Njenga, 2009; Ratan, 2008; Kanini, 2008; Siami, 2006; Jayawardhena & Foley, 2000) who revealed that there was a significant statistical relationship between SIS and performance of firms in the changing business environment. They also noted that the only way companies can gain a competitive edge in the changing business environment is through integrating technology in their processes.

Table 4.8: Performance Measurement Outputs

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>0.119</td>
<td>1.2225</td>
<td>1.415</td>
<td>0.0123</td>
</tr>
<tr>
<td>Costs of Operation</td>
<td>0.737</td>
<td>0.1132</td>
<td>0.132</td>
<td>3.113</td>
</tr>
<tr>
<td>Profits</td>
<td>0.622</td>
<td>0.3325</td>
<td>0.134</td>
<td>2.224</td>
</tr>
<tr>
<td>Return on Investments</td>
<td>0.575</td>
<td>0.3278</td>
<td>0.196</td>
<td>2.136</td>
</tr>
</tbody>
</table>

Source: Research data (2017)
As shown in Table 4.8, the study sought to establish the effect of Strategic Information Systems on the performance of Commercial Banks using costs of operation, profits and return on investment as indicators of performance measurement. After correlation analysis, it was established that performance of Commercial Banks was determined by costs of operation, customer satisfaction and return on investment had significant values be less than 0.05 and indication that all the values were statistically significant to conclude that Commercial Banks determined their performance using costs of operation, customer satisfaction and return on investments.

These findings correspond with the findings of (Nakhumwa, 2013; Nakhumwa, 2013; Bhatnagar, 2012; Aduda & Kingoo 2012) who established that performance of any enterprise was measured using financial and non-financial indicators like costs of production, profits, return on investments, employee motivation, diversification and employee adoptability to new changes.

4.12 Model Summary

Table 4.9: Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.923</td>
<td>0.852</td>
<td>0.789</td>
<td>0.6273</td>
</tr>
</tbody>
</table>

Source: Research data (2017)

The three independent factors that were studied, explain only 85.2% of strategic information systems and performance of Commercial in Nyeri County, Kenya as represented by the $R^2$. This therefore means that other factors not studied in this
research contribute 14.8% of strategic information systems and performance of Commercial Banks in Nyeri County, Kenya. Therefore, further research should be conducted to investigate the other factors (14.8%) that influence performance of Commercial Banks in Kenya.

Table 4.10: ANOVA Test

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>0.003</td>
<td>12</td>
<td>.001</td>
<td>3.867</td>
<td>.015b</td>
</tr>
<tr>
<td>Residual</td>
<td>0.068</td>
<td>173</td>
<td>.021</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>0.071</td>
<td>185</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Research data (2017)

From the ANOVA statistics in Table 4.10, the processed data, which is the population parameters, had a significance level of 0.015 which shows that the data is ideal for making a conclusion on the population’s parameter as the value of significance (p-value) is less than 5%. The calculated was greater than the critical value (2.262 <3.869) an indication that the three variables were significantly influenced performance of Commercial Banks in Nyeri County, Kenya. The significance value was less than 0.05, an indication that the model was statistically significant and fit for forecasting purpose.

These findings are supported by Kimori (2015); Mueni (2015); Muhammad, Naveed, Haider & Alamdar (2015) who established that there was a statistical relationship between internet and mobile banking and financial performance of financial
Institutions. In addition, these finding corresponds with the findings of studies conducted by Muriuki, (2011) who concurs that internet and mobile banking were drivers of organizational competitiveness. Organizations which do not embrace modern technologies are likely to experience high costs of operation and vice versa.

On the other hand, it is noted that some studies by Otiso, Simiyu & Odhiambo (2013) contradicts the acknowledged fact of this study. Their study clearly indicated that despite the adoption of mobile and internet banking, some of the costs incurred were associated with online financial fraud and thus decreased financial performance of financial institutions. However, they concluded that firms should continue to review their e-commerce strategies periodically in order to compete in the changing business environment.
CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents summaries of the study findings as per the study objectives, conclusions based on those findings and recommendations which are based on both the study findings and other relevant literature considered necessary and vital to be used in future to improve the study situation.

5.2 Summary

Due to issues of SIS among Commercial Banks in Kenya, the study sought to establish the effect of internet banking, mobile banking and Automated teller machines on the performance of Commercial Banks in Nyeri County. To establish the problem data was analyzed using correlation and regression methods to establish the relationship effect between variables of the study.

After conducting the data analysis, it was revealed that customers of Commercial Banks in Nyeri County adopted internet banking practices on a large extent despite challenges of consumer awareness on how to use electronic services. Most of the customers preferred internet banking services due to its security, provided twenty four hour access of their accounts, accessed their accounts from virtual location and accessed a variety of information concerning loans, investments and interest rates through online.
However, on the other hand, it emerged that some consumers were highly dogmatic in nature to adopt the new ideas introduced by the Commercial Banks. It was identified that some of the customers were rigid to traditional banking services that provided the opportunity to them to interact with employees of the Commercial Banks for more clarification.

The complexity of the system and internet accessibility by consumers of the banks were the challenges pointed out. The study also revealed that mobile banking services adopted by consumers at a large extent due to a number of opportunities ranging from payments of bills, transfer of funds, confirmation of account balance and review of their transaction.

However, on the other hand, it emerged that some of the customers were unable to their accounts using their phones due to system challenges. Commercial Banks systems were too slow to deliver instant information to customers. It was established that internal business processes of Commercial Banks were not upgraded to send electronic SMS to customers with regard to new products and general account information. This was due inappropriate technology that was used by Commercial Banks in customer service delivery.

The study established that majority of the respondents preferred conducting their financial transactions using an Automated Teller Machine Services due to their convenience, security, efficiency and effectiveness. The customers preferred the ATM mode due to less charges associated when withdrawing cash and making
payments using debit cards. However, on the other hand, it was further established that customers did not make enquiries through websites due to lack of internet accessibility. The Commercial Banks automated all their departments despite the challenge of training staff and customers.

Some of the customers received account information through SMS Alert after withdrawing and depositing money. The study found out that customers did not have access to online account opening facility since the system did not allow customers to post their passports through online. Despite satellite branches internet connectivity, it was established that customer queued for long periods due to system delays.

Most of the customer information was not reflected at the branch level due to system errors that were experienced occasionally. The study finally established that there was a positive relationship between independent variables (internet banking, mobile banking, and automated teller machines) and dependent variable (performance of Commercial Banks in Nyeri County, Kenya).

5.3 Conclusion

Based on the findings of the study, it can be concluded that internet banking has remained a competitive drive in the banking industry. Furthermore, it can be argued that most of the bank customers preferred internet banking services due to its security, provided twenty four hour access of their accounts, accessed their accounts from virtual location and accessed a variety of information concerning loans, investments and interest rates through online.
Further, it was concluded that mobile banking had resulted to drastic decline of employee costs, marketing costs and international transactions. In addition, it provided a platform of accessing financial information more efficiently and minimized costs associated to fraud cases and customer borrowing costs.

Adoption of automated teller machines platforms by commercial banks had led to reduced operational costs, increased profitability, improved customer service delivery, new product development, employee motivation and information access. The backbone of any developing or developed economy, aspects of globalization, deregulation, competition, costs of operation, changing customer trends are aspects that have contributed to adoption of strategic information systems among Commercial Banks in Kenya.

Furthermore, Commercial Banks to gain competitive edge and contribute to social economic developments in a country, the Government should support research and developments activities through internet connectivity to empower both large and small firms in the market. The Government of Kenya through the Ministry of Communication should regulate ICT policies that promote businesses in the competitive sector.

Reduction of levies of electronic products by the Kenya Revenue Authority in the Kenya market will promote financial services of Commercial Banks both in the local and global markets. Therefore, it can be concluded that, for Commercial Banks to
achieve their goals using SIS practices, they should conduct awareness campaign intended to change the attitude and perceptions of customers in the market with regard to new technology.

5.4 Recommendations

The study established that the extent of internet banking services was on a large despite the challenges of consumer awareness on internet baking. Therefore, this study recommends that Commercial Banks should allocate adequate financial resources to create maximum awareness of their internet banking services and training their internal and field staff. Gradual change approaches should be adopted by Commercial Banks in managing the transition of traditional banking practices to modern banking practices. Attitudes, perceptions and motivations of customers should be managed using social marketing campaigns intended to influence customers change their attitudes towards new technology.

The study found that mobile banking services had a significant influence on performance of Commercial Banks despite the challenges of system accessibility by customers. Therefore, this study recommends that Commercial Banks should upgrade their systems in order to encourage customers to access their accounts using their mobiles. Customers should be encouraged through social marketing campaigns in partnership with mobile phone companies to adopt phones that will enable them to access their account information.
Furthermore, the study established that the majority of the respondents preferred conducting their financial transactions using an Automated Teller Machine Services due to their convenience, security, efficiency and effectiveness. Therefore, this study recommends that Commercial Banks should improve or upgrade their debit cards to provide an opportunity of accessing a variety of services by customers. Opening more outlets in the country will enhance the penetration of electronic services and expansion of the market share.

The study also established that despite satellite branches internet connectivity, it was established that customer queued for long periods due to system failure. Therefore, this study recommends that Commercial Banks should adopt the fiber optic cable internet to increase the speed of services delivery to customers thus efficiency and effectiveness. It is therefore important that Commercial Banks constantly improve and upgrade their e-banking system’s security.

In order to change the perception, the Commercial Banks will be required to post security provisions on their websites so as to increase confidence and improve trustworthiness of the e-banking systems. It can be concluded that Commercial Banks should invest in Information technology infrastructure for their competitive advantage in the market. With the changing business environment, the only driver of Commercial Banks against globalization and competition challenge is to institutionalize technological culture in the system to enhance efficiency and effectiveness.
5.5 Suggestions for Further Research

Future studies should explore the reasons behind the influence of strategic information systems and performance of Commercial Banks by focusing on different variables like e-commerce, continuous improvement and business process re-engineering. Researchers should go ahead and establish the reasons behind the failure of SIS practices among Commercial Banks. Future studies should seek to minimize the challenges experienced by Commercial Banks when trying to adopt SIS.
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APPENDICES

Appendix 1: Introductory Letter

Dominic Kaloki,
Kenyatta University,
Kenya.

TO WHOM IT MAY CONCERN

Dear Respondent,

REF: MBA RESEARCH STUDY
I am a student pursuing a Masters degree in Business Administration (Strategic Management) at the Kenyatta University. In partial fulfillment of the requirements to the award of the Masters degree, I am required to carry out a study on “Strategic Information Systems on Performance of Commercial Banks in Nyeri County, Kenya”

The choice is based on your strategic importance in the achievement of organizational goals according to vision 2030 of Kenya hence improved performance of the organization in terms of efficiency and effectiveness. I kindly request your assistance by availing time to respond to the questionnaire. A copy of the final report will be made available to you at your request. The information given will be treated with utmost confidentiality for the purpose of this study only.

Thank you in advance.
Appendix 2: Questionnaire for Employees of Commercial Banks

SECTION A: Background Information

Name of the Bank………………………………………………………

What is your designation? ...................................................

1. For how long have you been working in the Bank?
   Less than a year [   ]
   Between 1 and 5 years [   ]
   Between 6 and 10 years [   ]
   Above 10 years [   ]

2. What is the level of your education?
   Diploma level [   ]
   Undergraduate level [   ]
   Graduate level [   ]
   Masters [   ]
   Others …………………………….

3. Does your Bank has Strategic Information Systems?
   Yes [   ]
   No [   ]

SECTION B: STRATEGIC INFORMATION SYSTEMS AND PERFORMANCE OF COMMERCIAL BANKS IN NYERI COUNTY

Clearly Tick the following questions using the Likert scale as indicated below.

Key:

Very Large Extent [5 Points ]

Large Extent [4 Points ]

Moderate Extent [3 Points]

Little Extent [2 Points]

Not at All [1 Point ]
4. To what extent do you agree with the following statements regarding the effect Mobile banking on the performance of your Bank?

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<tbody>
<tr>
<td>Customers carry out their transaction through online services</td>
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<tr>
<td>Customers make online inquiry and transfers</td>
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<td>Customers have access to online bill-pay</td>
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<td>Customers access to online trust funds</td>
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<tr>
<td>Customers access online deposit accounts</td>
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<tr>
<td>Customers always are updated about their account information monthly through e-statement</td>
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<tr>
<td>Customers always give feedback through online</td>
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5. How else does mobile banking influence performance of your Bank?

……………………………………………………………………………………………………………………

6. To what extent do you agree with the following statements regarding the effect of internet banking on performance of your Bank?

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<tr>
<td>Customers receive balance enquiry alerts though their phone</td>
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<tr>
<td>Customers receive SMS alert on new banking products and</td>
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<tr>
<td>Customers make enquiries about their account through phone</td>
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<tr>
<td>Customers can make money transfers from their phone</td>
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<tr>
<td>Customers can deposit money to their account through phones</td>
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</table>
Customers receive periodical promotional messages on new banking products.

7. How else does internet banking influence performance of your Bank?

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8. To what extent do you agree with the following statements regarding the effect ATM on performance of your Bank?

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<tbody>
<tr>
<td>Customers prefer an ATM to withdraw money</td>
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<tr>
<td>Customers prefer an ATM due to minimal charges when transacting</td>
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<td>Customers prefer an ATM to manage time</td>
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<td>Customers prefer an ATM due to its convenience</td>
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<td>Customers prefer an ATM for security purposes</td>
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<tr>
<td>Customers prefer an ATM for cashless transfers</td>
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9. How else does ATM influence performance of your Bank?

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10. To what extent do you agree with the following indicators mentioned as measures of performance by your Bank?
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<tr>
<td>Adoption of SIS has contributed to increased profits among Banks</td>
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<tr>
<td>Adoption of SIS has contributed to minimal costs of operation of the Banks</td>
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<td>Adoption of SIS has led to enhanced customer service delivery among Banks</td>
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<tr>
<td>Adoption of SIS has contributed to increased members of Banks</td>
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<tr>
<td>Adoption of SIS has contributed to penetration of Banks into new markets</td>
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<tr>
<td>Adoption of SIS enable Banks to increase its asset base</td>
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<tr>
<td>Adoption of SIS enable Banks to penetrate global markets</td>
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11. What are other factors that are used by your Bank to measure performance?

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Thank you for your Cooperation
Appendix 3:  List of Commercial Banks in Nyeri County, Kenya

1. Barclays Bank of Kenya Limited
2. Co-operative Bank of Kenya Limited
3. Credit Bank Limited
4. Diamond Trust Bank Kenya Limited
5. Sidian Bank Ltd
6. Equity Bank Kenya Limited
7. Family Bank Limited
8. KCB Bank Kenya Limited
10. NIC Bank Limited
Appendix 3: Research Permit

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

F.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 810901 Ext. 4150

Internal Memo

FROM: Dean, Graduate School

DATE: 25th November, 2016

TO: Dominic Kaloki
C/o Business Administration Dept.

REF: D53/OL/23102/2013

SUBJECT: APPROVAL OF RESEARCH PROJECT PROPOSAL

This is to inform you that Graduate School Board at its meeting of 23rd November, 2016 approved your Research Project Proposal for the M.B.A Degree Entitled, “Strategic Information Systems and Performance of Commercial Banks in Nyeri County, Kenya”.

You may now proceed with your Data Collection, Subject to Clearance with Director General, National Commission for Science, Technology and Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking Forms per semester. The form has been developed to replace the Progress Report Forms. The Supervision Tracking Forms are available at the University’s Website under Graduate School webpage downloads.

Thank you.

GIDEON KAINENYI
FOR: DEAN, GRADUATE SCHOOL

Chairman, Business Administration Department.

Supervisor: Dr. Samuel Maina
C/o Department of Business Administration
Kenya University