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EFFECTS OF AUTOMATION ON PERFORMANCE OF COMMERCIAL BANKS IN KENYA: A CASE OF NATIONAL BANK OF KENYA

BY

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A Research Project Report Submitted to the Chandaria School of Business in Partial Fulfillment of the Requirement for the Degree of Masters in Business Administration (MBA)

UNITED STATES INTERNATIONAL UNIVERSITY - AFRICA

SPRING 2018
DECLARATION

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

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This report has been presented for examination with my approval as the appointed supervisor.

Signed: ________________________ Date: ______________________

Dr. Joyce Ndegwa

Signed: ________________________ Date: ______________________

Dean, Chandaria School of Business
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ABSTRACT

This research assessed the effects of automation on performance of commercial banks in Kenya with particular reference to National Bank of Kenya. The study begun by determining the automated systems that are being used by the commercial banks. It further proceeded to evaluate the organizational strategic alignment towards automation and concluded by determining the effects of automation on organization performance.

The research design that this study employed was descriptive research design. Stratified sampling technique was used to obtain a preferred sample that provided a high representation of the entire population. Data was collected using structured questionnaires which were administered to the obtained sample of 98 National Bank head office employees. Data from the completed questionnaires was coded, edited and entered into IBM SPSS version 22.0 statistical software prior to data clean up, after which, validation tests were carried out to eliminate anomalies. Thereafter, Data analysis was carried out using descriptive statistics using measures of central tendency such as Mean, Median, Mode, Standard Deviation and Variance. In addition, inferential statistics such as regression and correlation were also carried out to determine the relationship between variables. Finally, the results were then presented in form of tables and figures clearly indicating the frequencies and percentages.

Results obtained showed that the bank continuously automated its systems as new technologies emerged. Findings showed that the bank automated its core systems such as ATMs, Mobile banking and Internet banking. The bank customers accessed these systems and utilized them to carry out their personal transactions.

Findings revealed that the bank’s strategic plans were well aligned towards automation. Technology was considered as an important aspect in the alignment of information systems with business strategy. The organizational structure was noted to have played a role in enabling the bank gain a competitive advantage towards automation of systems and support of effective organization controls. The bank’s organization culture was identified for boosting innovativeness as well as enhancing the commitment amongst staff which increased the success of system automation. Results also showed that Top management provided the strategic vision and direction towards system automation while ensuring that there was cooperation amongst staff and all stakeholders involved in automation.
The study concluded that the bank was of the view that by adopting automated systems, both customer service level and customer relationship improved for the better leading to organization performance. The performance of National bank varied across the years as return on assets and return on equity increased and decreased in some years. The study found that there was a strong positive correlation coefficient as shown by correlation factor of 0.816 and regression analysis showed an increase in the 3 variables would result to a positive increase on performance. The study proceeds to conclude that automation enhanced better service quality, provided constant and consistent service availability, led to the elimination of errors and data redundancies and finally, led to time saving due to fast service delivery. System automation opened up a world of opportunities for the customer, gave the bank a better competitive edge in the industry, enhanced customer satisfaction, customer loyalty, and increased revenue due to reduced marginal costs hence, higher profit margins.

The study recommended that the bank should continuously automate its systems as new technologies emerge since by adopting automated systems, both customer service level and customer relationship improved for the better. The study recommended that the bank should incorporate and invest in technology since technology was noted as an important aspect in the alignment of information systems with business strategy. The study recommended that the banks should automate all its services since automation enhances service quality, constant and consistent service availability, elimination of errors and data redundancies and time saving due to fast service delivery.
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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Study

Automation refers to the usage of systems such as computers to control industrial machinery and processes, substituting human operators (Endsley, 2011). The classification of process technologies based on historical progression of manual, mechanization and automated is beneficial in comparing the effects that each has on the competitive priorities of flexibility, quality, cost and speed (Nicholas, 2011). Automating processes is one of the avenues organizations could consider so as to achieve the aforementioned performance objectives. It is one of the ways of improving performance through reduced costs. Technology and technological innovations have been used by nations with high labour costs to help achieve comparable production costs to those countries with low cost labour. Applications of automated systems in the service environment bring benefits through increased productivity. Automated systems in service involve mistake proofing, replacement of service interface and control of delivery processes (Norman, 2010).

Performance is defined as the action of carrying out a task, and most importantly about the results attained from it. It can be defined as the outcome of work since it offers the strongest connection to the key strategic goals of an organization, financial contribution, and customer gratification (Otero, Lindman & Fernandez, 2009). Thompson and Strickland (2011) concluded that there are two distinct categories of performance benchmarks from companywide perspective; those relating to financial and the other relating to strategic performance. Due to the mounting pressure from the highly competitive environment, heightened globalization, and the constant increase in the amount of performance data, it has become vital for the organizations to be demand driven by ensuring that they can achieve more with less. According to Njagi and Kombo (2014), organizational performance consist of financial performance and operational performance.

According to Salazar, Soto and Mosqueda (2012), financial performance is the extent to which economic objectives are met or have been met. Financial performance subject to how effectively a firm uses its assets from its principal mandate of conducting business and its successive creation of revenues (Kajirwa, 2015). Nzalu (2015) notes that financial
performance focuses on financial statements or reports of a firm. These include dividend growth, sales turnover, capital employed, and asset base among others about the firm. Firms stakeholders are mostly interested in the firm’s performance as far as finance is concerned (Nyamita, 2014). Measurement of financial performance involves financial ratios such as profitability ratios, liquidity ratios, activity ratios, and debt ratios (Levine, 2013).

Operational performance describes how efficient, effective, productive and environmentally friendly a firm is especially in terms of waste reduction and compliance to regulatory standards (Hackman & Wageman, 2015). The operational features comprises of tasks carried out by service providers that is instrumental in making the organization productive, efficient and consistent in delivery of quality products and services. The relational features consists of tasks that improve customer relationship performance. A comparable depiction was highlighted by Schmenner and Swink (2008) who defined service performance as encompassing two unique dimensions: an operations-oriented dimension and a marketing-oriented dimension. Based on the type of service being given, each service has the intention of offering the customer an excellent experience because they are the key beneficiaries of the services rendered. This study looks at both operational and financial performance and its relationship to automation.

Automated service offers a good chance for financial institution to offer novel models for strategies on service design and novel service development (Henderson, McGoldrick and McAdam, 2013). An analysis of the present conceptualization of automated service reveals that on overall, automated service descriptions consists of precise reference to the internet but they repudiate the inclusion of other significant automated service dimensions like mobile service and automated service delivery outlets. According to Ruyter, Wetzel and Kleijnen (2011), automated service is defined as content-centered, interactive, and internet based customer service interface, initiated and operated by the customer which is linked to the organization customer support platform and technologies with the intent of building an excellent customer service relationship. Furthermore, Surjadjaja, Ghosh and Antony (2013) established that automated service is a web-based service offered through the internet such that the interaction of the customers with the organization is limited to the information and communication technology (ICT) itself.
Automated service has significantly advanced, taking up a key role in advancing the ideals of delivery of service in the financial sector. It is no longer a norm for customers to queue in the banking halls as they wait to settle payments like school fees, utility bills or any other financial transactions. Customers can now transact from the comfort of their homes at their convenience by using payment channels like over the internet, or using their ATM cards. In addition, as a result of the remarkable advancement in the telecommunication industry, most financial institutions have exploited this unexploited opportunity and partnered with mobile phone network providers to provide mobile banking services to its customers (Okiro & Ndung’u, 2013).

Automation growth and financial innovations are regarded as the core forces influencing the financial sector’s growth (Edey & Gray, 2016). It is as a result of these changes that made financial institutions to be wary of future trends that they ought to adopt to be able to survive and compete effectively in the ever changing and disruptive environment. Many financial institutions are facing gigantic challenges in minimizing the number of operating as down-sizing efforts elicit difficult post-merger glitches such cultural concerns, social and political issues, product adjustments and automation integration (Gyptra & Dixon, 2012). Recently, automation of services has had significant impact on the improvement of service delivery options and an insightful impact on service marketing. To stay competitive, institutions are making sure that they increase their automated based service delivery channels. A growing number of financial institutions have embraced automation to offer their services resulting in reduction of costs, generation of customer value addition services, facilitation of employee jobs and eventually, the delivery of self-service provisions for customers (Dabholkar & Bagozzi, 2012).

In today’s highly competitive economy, provision of good customer service plays a significant role in rating a company’s victory and failure. A growing number of financial institutions have adopted automation to offer their day to day services to their customers. A thorough examination of quality concerns of institutions’ automated services are essential since it has a significant influence on an organization’s customer retention capability, reputation, attractiveness, and an impact on organization’s competitive advantages (Santos, 2013). To adopt this novel automation–oriented context, it is essential for commercial bank to comprehend how the quality of their automated services
sets them apart from that of their competitors. In measuring the organizations performance, automated service is one of the critical measurements.

The viability of automated service in financial institutions relies on its profitability and research has associated the success or failure of automated organizations with service quality Santos (2013). Sile (2007) noted the various effects of automated service quality on commercial bank’s performance as a vast range of services to members, increased customer base and market expansion, efficient delivery and management of business and enhanced competitiveness in the financial market. Ombado (2009) noted that having automated services permits commercial bank to cut cost sharply and in return the quality of automated commercial bank’s services contributes to the improvement of operational performance. It’s with this respect that automated commercial bank’s service context is positively related to commercial bank operational performance.

Commercial banks are financial institutions that have been lawfully authorized to receive money from individuals and businesses and lend money to them. They are accessible to the public and attend to institutions, businesses, and individuals. Their operations are regulated, supervised, and licensed by the central bank. The necessity to introduce the use of credit referencing as a risk management tool was recognized by Kenyan lenders as essential to establish a vigorous and globally competitive financial sector (Central Bank of Kenya Report, 2016). Towards the end of 2016, the banking sector consisted of the Central Bank of Kenya, as the regulatory authority, 41 banking institutions, 8 representative offices of foreign banks, 12 Microfinance Banks, 3 credit reference bureaus, 15 Money Remittance Providers and 80 foreign exchange bureaus. Out of the 41 banking institutions, 40 were privately owned while the Kenya Government had majority ownership in 3 institutions (Central Bank of Kenya, 2016).

National Bank was formed on 19th June 1968 and formally begun operations on Thursday November 14th 1968. During its inception, it was wholly owned by the government of Kenya with the key objective being to assist Kenyans to gain access to credit facilities as well as allow the government to gain control of the economy. The Bank is listed on the Nairobi Securities Exchange. At the core of its strategy is the commitment it made to deliver on clear objectives tied on its mission of excellence in offering competitive and wide-ranging financial solutions that meets the varying needs of its customers while at the same time practicing accountable corporate citizenship by offering
competitive opportunities to bank staff and improving shareholder value. In 2016, the bank made steps to recover from the loss position it recorded in 2015 which resulted in a profit before tax of KES182 million for the period ending December 31, 2016. This marked a significant increase in profits compared to the 2015 loss which stood at KES1.6 billion (National Bank of Kenya, 2016).

National Bank of Kenya is currently in the process of implementing various automations despite the internal and external challenges. In order to improve the customer experience and channels convenience, National Bank of Kenya has developed an automated collections service for corporates to receive real-time updates to their enterprise resource planning (ERP) and internal systems once payments are received into their Bank accounts to ease reconciliations and real-time balance updates; electronic payments processing for salaries and wages; supplier and other third-party payments via E-pay Platform and internet banking and mobile money channels. There is a multi-wallet University Student Smart Card has been deployed at some universities, doubling up as a campus access and identity card, enabling university students to manage their HELB allocations, fees payments and general bank transactions. Finally, a multi wall et county citizen smart card, enabling county citizens to pay county taxes and levies as well as to facilitate general card payments has been developed (National Bank of Kenya, 2016).

1.2 Statement of the Problem

In the current era, many business entities are embracing automation in order to cope with the global needs of their customers and generation of accurate and reliable management reports. The service industry in particular has adopted the use of automated services such as the internet as an option to offer remote services to its customers as opposed to using only the traditional face to face service delivery (Hernando & Nieto, 2007). This has increased the service quality outreach to many remote parts of the world. Commercial banks in particular are doing this in order to keep pace with the demands of the world, to counter competition and to improve financial performance. ATM, mobile banking and internet banking are three forms of automated service delivery channels that are key to improving the performance of commercial banks. Whereas this has improved services to members, increased revenues and growth in profits, they face a unique challenge of connecting the branches while the available infrastructure and income per capita in the region impose severe limitations (Central Bank of Kenya, 2016).
In Kenya, the high performance in the banking sector coupled with intense competition has forced each institution to put in place systems which are efficient to ensure that the unforeseen events like disruptive technology is offset therefore enabling the firm to keep its operations afloat while reducing risks that emerge from innovation and development (Ruel, Bondarouk & Looise, 2014). Commercial banks in Kenya have embraced various technology innovations in several ways such as Real Time Gross Settlements, Mobile banking, ATM services and agency banking coupled with synergistic forces earned by partnering with other organizations. Improved performance on profitability and market share were noted during the development period. A profit of 48 billion was posted by the sector in 2015 indicating 14.3% growth compared to 2014. This result increased by 28.4% in 2014 and 35.1% in 2015 (Central Bank of Kenya, 2016). Despite this performance it is not clear how much the automations have contributed to this performance.

Research has been carried out on the effects of automation on organization performance; globally, Kumbhar (2012) study in India on the automation and operational performance established that automation had least impact on operational performance. In Nigeria, Olorunmolu (2015) studied the influence of automation on customer services established that automation services influence customer patronage in the bank. Locally, Bosire (2015) studied effect of automation of bond trading on bond market performance of Nairobi Securities Exchange and established that bond trading automation has a positive and a substantial effect on the performance of the bond market. Wandera (2012) focused on the challenges facing Kenya medical research institute in the implementation of the automation strategy and the challenges in its automation strategy implementation included inadequate resources, high resistance from staff, inadequate office and limited training on the new Enterprise Resource Planning software system.

All the above studies have been done in different contexts, although they have focused on automation none has focused on the effects of automation on performance of commercial banks in Kenya. Therefore, this study sought to establish the effects of automation on organization performance, using a case of National Bank of Kenya in order to fill the gap.
1.3 General Objective

The general objective of the study was to determine the effects of automation on organization performance of commercial banks in Kenya, a case of National Bank of Kenya.

1.4 Specific Objective

The study was guided by the following specific objectives

1.4.1 To determine the automated systems used by the commercial banks.
1.4.2 To evaluate the organizational strategic alignment towards automation.
1.4.3 To determine the effects of automation on organization performance.

1.5 Significance of the Study

1.5.1 Policy Makers

The study findings will enlighten the policy makers especially the Central Bank of Kenya on the expected effect of automation on organization performance; this will assist them in designing appropriate policies for technological innovations channel to enhance organization performance in commercial banking in Kenya. One of the key drivers of performance is the automation of the system. Through the findings of the study, the government of Kenya is able to appreciate the areas that need automations to support the banking sector.

1.5.2 Top Management of the Commercial Banks

The finding of the study will be of great importance to the managers of commercial banks in Kenya as they will understand the effect of automations systems on operational performance of commercial banks in Kenya. The results from this study provided insight into information technology investment and it effectiveness in banks. This would allow them to better learn how to improve their abilities in service delivery. The study may provide banks with new concepts and educational resource to improve their insights about performance and effectiveness in their organizations based on automations.
1.5.3 Future Scholars and Academicians

The study will be of great importance to future scholars and academicians as it will form basis for future research as well as providing literature for future studies on automations on organization performance in the banking industry. The study will add to the body of knowledge on the effect of automation on organization performance of commercial banks in Kenya.

1.6 Scope of the Study

The study aimed at establishing the effects of automation on organization performance of commercial banks in Kenya, a case of National Bank of Kenya. The target population was limited to the 76 employees employed at National Bank of Kenya head office. The study was partial in terms of coverage as it only covered one geographical location. The study was conducted from November 2017 to March 2018.

There were a number of limitation in the study; the respondents to be approached did not give full information fearing that the information sought would be used against them or the National Bank of Kenya. The study assured them of confidentiality and that the information would not be shared to anyone. Some respondents turned down the request to fill questionnaires. The study handled the problem by carrying an introduction letter from the university and assured them that the information they gave would be treated with confidentiality and would be used purely for academic purposes. The study also encountered challenges acquiring information from the respondents, the study minimized this by making the questions objective.

1.7 Definition of Terms
1.7.1 Automation

Automation refers to the usage of systems such as computers to control industrial machinery and processes, substituting human operators (Endsley, 2011).

1.7.2 Automated Teller Machine

Automated teller machine (ATM), also referred to as a Cash Point or a Cash Machine, is an electronic telecommunications gadget that offers the customers of a financial institution with access to financial transactions in a public space without the need for a cashier or human bank teller (Davis & Warshaw, 2009).
1.7.3 Commercial Bank

A commercial bank is a financial institution that offers services, such as receiving deposits, issuing business loans, lending mortgages, and providing basic investment facilities such as savings accounts and certificates of deposit. (Business Dictionary, 2011).

1.7.4 Electronic Funds Transfer

Electronic funds transfer is a form of money transmission between banks without any exchange of physical paper money transfers (Walker, 2014).

1.7.5 Financial Performance

Financial performance is the extent to which financial objectives are met or have been met. Financial performance subject to how effectively a firm uses its assets from its principal role of conducting business and its successive creation of revenues (Yahya, 2015).

1.7.6 Operation Performance

This involves analysis of the outcomes of an organization in relation to its intended outputs. This was measured through the effectiveness and efficiency of the organisation to help it achieve the desired outputs (Armstrong, 2010).

1.7.7 Innovation

Innovation is the adoption of improved novel solutions that meet the novel requirements as expressed by the ever changing needs in new or existing markets. This is achieved via development of effective products, services, processes, technologies, or ideas that are readily available to markets, governments and society (Boston Consulting Group, 2009).

1.7.8 Internet banking

Internet banking is a platform that enables individuals to carry out banking operations via the internet (Frenzel, 2011).

1.7.9 Mobile Banking

Mobile banking is the act of carrying out banking transactions using a mobile device such as a mobile phone or Personal Digital Assistant (Boston Consulting Group, 2009).
1.7.10 Performance

Performance is referred to as the results achieved from the act of working because they elicit a strong association the organization strategic goals, customer gratification and economic contributions (Hernando & Nieto, 2013).

1.8 Chapter Summary

This chapter presents the introduction to the study. It also provides the background information to the problem statement of the study as well as its scope of the study. The objectives of the study were also presented which were to assess the effects of automation on performance of commercial banks in Kenya, a case of National Bank of Kenya. Finally, the scope, definition of specific terms that were used in the project were also highlighted. Chapter two presents literature review that was reviewed to achieve the objective of the effects of automation on organization performance. Chapter three focuses on research methodology while chapter four presents the interpretation and result findings. Finally, chapter five focuses on discussion, conclusion and recommendations of the study.
CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

The following chapter reviewed the effects of automation on organization performance of commercial banks in Kenya. The chapter consisted of an introduction and overview of strategic management challenges. The chapter then determined the automated systems used by the commercial banks. It also determined the organizational strategic alignment towards automation. It then evaluated the effects of automation on organization performance and finally the chapter summary.

2.2 The Automated Systems Used by Commercial Banks

The banking industry believes that by adopting automated systems, both customer service level and customer relationship will improve for the better. Pikkarainen, Karjaluoto and Pahnila, (2014) describes internet banking as an internet platform, that allows customers to use different types of banking services ranging from bill payment to making investment. Nyangosi, Arora and Singh (2009) argue that in Kenya, most banks have adopted internet, mobile and other e-banking facilities to enrich delivery channels to their customers. However, it is significant that the introduction of these products be accompanied with programs to educate the consumer on the novel and other innovative ways of conducting banking business. For example, in as much as internet banking is a convenient and quick means of carrying out banking transaction, it hasn’t gained acceptance amongst customers due to uncertainties and fears of apprehension in this approach of banking.

Like many other developing countries, automated systems in Kenya is at its early stages although banks are now open to other channels of delivery like mobile banking. Not many banks have embraced automated systems but majority have at least two or three technology-based channels of service delivery. The lack of vast adoption of automated systems by some banks has been accredited to limited or unavailability of infrastructure and legislation that provisions for usage automated systems (Nyangosi, Arora & Singh, 2009).
2.2.1 Automated Teller Machine (ATM)

ATM card is made up of plastic with a magnetic strip that stores all the information about the card owner such as customer name, card number, account number, card limit, concerned bank etc. Sumra et al. (2011) describes ATMs as computer terminals, with the ability to keep records and endowed with a cash vault, allowing customers to access their accounts and transact by keying in their Personal Identification Number (PIN) into the computer terminal linked to the bank’s computerized records 24 hours a day. Banks provide several retail banking services through ATM cards to its customers. When a card is inserted into the card slotting device, the magnetic reader of the machine reads the magnetic strip and does verification prior to processing. Both automated and human teller services, boost up the productivity of the bank even during banking hours. These saves the customers a lot of time that they would have used queuing in the banking hall to attend to other beneficial responsibilities.

In the financial sector, the banking industry was on the forefront to adopt swift globalization and gained significant benefits from Information Technology advancement. Technology advancement in the banking industry begun in the 1950s when banks were installed the first bookkeeping automated machine. Automation in the banking industry became extensive in a couple of decades as bankers hastily recognized that a considerable number of their labor intensive tasks could be automated with using computers. The first Automated Tellers Machine (ATM) is reported to have been utilized only for cash dispensing in USA in 1968 (Okiro & Ndungu, 2013).

ATMs were the first known technology to offer electronic access to customers (Malhotra & Singh, 2009). However, as a result of technological growth, ATMs are able to offer a variety of services, such as funds transfer between accounts, deposits, and payment of bills. Malhotra and Singh (2009) states that “ATM is an innovative service delivery mode that offers diversified financial services like cash withdrawals, funds transfer, cash deposits, payment of utility and credit card bills, cheque book requests and other financial enquiries” (p. 147). The ATM services that are provided by banks have advanced into a more customer friendly option of service delivery. They not only perform the basic deposit and withdraw tasks of tellers but also offer other services like account statement inquiry, cheque deposit processing, etc.
The introduction of ATMs played a substantial role towards improvement of customer convenience and cost reduction which led to enhanced efficiency and profitability in service delivery of the banks. Prior to the introduction of ATMs, accounts enquiries, withdrawal of funds, and funds transfers between accounts required face to face contact amongst bank staff and customers, a procedure which was slow and subject to costly human errors and hefty labour costs. IT advances has made it possible for banks to progressively substitute manual work with automated processes. Nyangosi and Arora (2010) reiterates that while technological progress such as the extensive use of ATMs minimized the transacting costs, the profits were still not as good as those derived from other areas of activities. Other automated customer service innovation available in Kenya include mobile-GIS based vehicle parking management system, electronic payment systems, E-Jii Pay, Electronic Medical Records, Watex System and intelligent transportation management systems.

The growth in Technology has played a crucial role in improving service delivery standards in the Banking industry (Ngari & Muiruri, 2014). In its simplest form, Automated Teller Machines (ATMs) and deposit machines now enable customers to perform banking transactions beyond banking hours. Banks are inclined towards utilization of the available electronic banking device, as all others to gain a competitive advantage. ATMs are a cost-efficient way of achieving higher productivity as they realize higher productivity per period of time compared to human tellers. Furthermore, since ATMs continue operating when human tellers stop, continued productivity for the banks is incurred even after banking hours (Hasan, Schmiedel & Song, 2013).

2.2.2 Internet Banking

The idea of internet banking is meant to provide customers with access to their accounts over the internet and allow them to enact certain transactions on their accounts, provided compliance with stringent security checks. Internet banking may be described as banking via the World Wide Web, which is the interconnectivity of computers and telecommunication equipment. Simply put, internet banking can also be referred as “the provision of traditional services over the internet” (Internet Banking handbook, 2011). Nath, Schrick and Parzinger (2011) illuminates the purpose of banking on the World Wide Web as a way to provide banks with a channel of service delivery for selling banking services to its customers and secondly, facilitating in the development of the
electronic commerce infrastructure. Due to its nature, customers have considered internet banking to be more convenient and flexible coupled with a virtually complete control over their banking.

Services delivery is informational such that it informs customers about the products being offered by the bank and is also transactional in that it gives customers a chance to conduct retail banking operations. Internet banking as an alternative channel for retail banking, it has a major influence on efficiency attributed to telephone banking and PC banking. Nonetheless, it is also one of most cost-efficient technology means of achieving higher productivity (Hasan, Schmiedel & Song, 2013).

Furthermore, it eradicates the barriers brought forth by distance/time and offers constant productivity for the bank to unthinkable distant customers. It has materialized into a major channel of banking. Most of the large and medium sized banks provide internet banking and funds transfer services. Whereas the big banks have efficient infrastructure to handle high valued bulk volumes of transactions, the small sized banks function through shared resources. The important fact is that internet banking transactions adopt the straight through processing in the larger banks making it fast and easy to settle. To improve their competitive power, banks provide wide ranging value addition services via their electronic platforms such as portals for tax collections, bill payments, trading, and account inquiries, etc. Services like prepaid mobile phone recharge have become tremendously common among consumers (Nyangosi, Arora & Singh, 2009).

The use of internet banking leads to reduction of cost which in return leads to an increase in profitability. Introduction of internet banking has resulted in exceptional speed in banking system and has played a key role in the globalization of banking system (Malhotra & Singh, 2009). Financial institutions in Kenya has not ignored information systems since they play a significant role in the banking operations because consumers are mindful of technological progressions and demand for quality services (Jun & Cai, 2011). Ngari and Muiruri (2014) acknowledged four internet roles in a contemporary banking industry. First, it provides a means to carry out financial transactions amongst banks and their customers. Secondly, it provides reliable access to financial information to financial institutions. Thirdly, the Internet provides a connection between the bank’s head office and its branches. Fourthly, electronic banking allows customers to access their account information, transact and perform other functions.
2.2.3 Mobile Banking (M-banking)

In one academic model, Tiwari and Buse (2013) defined mobile banking as “the provision of banking and financial services with the help of mobile telecommunication devices. The scope of offered services may include facilities to conduct bank and stock market transactions, to administer accounts and to access customized information”. Mobile banking can be considered also virtual banking, alongside telephone where branch financial services are delivered via mobile phone where the bank customers can execute retail-banking transactions. Mobile banking has many forms such as WAP-banking or SMS-banking. Whereas SMS-banking is performed by use of text messages, WAP-banking is performed the use of mobile internet service accessed through GPRS connection. Anyasi and Otubu (2009) states customers are able to receive real time notification on every credit or debit transaction that they perform as a result of a value add service provided by SMS banking. These feature enables customers to monitor their accounts with a 24-hour service. Thanks to SMS Banking, an account holder is able to identify unapproved access to their accounts. Furthermore, SMS banking has the capability to extract real time account balance or account statement to the customer if they request via SMS.

The use of mobile-banking contributes to improved service delivery and hence performance of firms, such as market share growth, customer satisfaction, wide product range, product customization and improved response to client needs. Mobile banking keeps being used as a strategic tool which influence banks income structure, since Successful strategy such as retention of customers or enhancement eventually results to profitability (Hasan, Schmiedel & Song, 2013). Mobile banking gives banks a wide range of opportunities that can help increase its revenue. These comprise provision of superior real-time access to products and services, monetizing the value of customer analytics, and carrying out targeted marketing campaigns founded on the information of consumer taste and preferences that banks collect.

Mobile banking usage amongst previously unbanked groups is supposedly thought to have a direct, positive impact on users, because it has led to a shift from informal to formal transactions which has elevated poverty and triggered economic development. As per Tiwari Buse and Herstatt (2013) mobile banking services range from provision of more value-add mobile services to current customers, to utilization of a network of
banking and mobile agents in lieu of branches to minimize service costs, to provision of payment services by telecommunication firms without bank involvement. The capability of M-banking to offer financial services has been possible due to the rapid growth that mobile infiltration level have revealed in recent years throughout Africa.

In Kenya, Ngari and Muiruri (2014) agrees that transaction costs incurred by both customers and banks have reduced as a result of innovations brought forth by advancement in mobile banking money transfer business. This revolution of money transfer business has transformed to high profits and revenues for banks. According to the global statistics on use of mobile money transfer services, Kenya was listed as one of the leading countries. Owing to the capabilities that mobile banking has elicited, this service has been simulated in other countries and has posed as a threat to the traditional money transmissions services such as electronic funds transfer and cheque system.

Many retail transactions in Kenya have shifted to the use of mobile phone. Bank customers are able to move money from their e-wallet accounts to their bank accounts or vice versa. This advancement of the mobile money services has increased the speed and circulation of money in the country resulting to higher profits for the banks collected through income from commission.

2.3 The Organizational Strategic Alignment towards Automation

Strategy alignment is the plan or pattern that assimilates the goals for the organization, guidelines and action procedures into a cohesive whole (Vijay, 2014). Strategic alignment has constantly emerged as a key factor for information technology specialists and company executives and it has been consistently and frequently categorized as a vital challenge facing corporations since the mid-1980s. Regardless of the significance of strategic alignment, researchers are still debating on what strategy alignment entails (Hernando & Nieto, 2016). Swanson and Ramiller, (2014) contends that strategic alignment is the application of information technology in an applicable and timely manner, in harmony with business needs, objectives and strategies. Aligning information systems to the strategic objectives set for the organization has proven to be a challenge for managers over the last few years.

For smooth and harmonious flow of work in an organization, managers must ensure that the organization information systems and business goals are well aligned. Several
organizations have established a centralised structure of their information systems and flow of information leading to ease in controlling information resulting to establishment of a remarkable power structure in the organization (DeYoung, 2015). Technology is a crucial feature in aligning information systems with organization strategies. This relies on the kind of information systems infrastructure deployed as a tool to help in achieving business objectives. Davenport (2013) claims that when aligning infrastructure with organization strategy, it is difficult when it comes to changing organization strategy and information systems infrastructure. For proper alignment of both information system strategies and organization strategy, it is essential to clearly define organization and information system goals and assess the formulation of these goals.

For proper alignment, information system professionals should be involved in business planning and business professionals to be involved in information systems planning (Batiz-Lazo & Woldesenbet, 2006). Hauner and Peiris (2015) proposed that information systems planning is very crucial as the “organizations attempt to leverage information system applications to improve efficiency, reengineer business processes, gain competitive advantage, and compete more effectively. It was interesting to know that there was no particular strategy being used for the development of plans” (p. 11). Hauner and Peiris (2015) reported that there is no concrete model or theory available for development of information system plans but an individual has to make the IT staff competent of up to date technologies and entirely conscious of novel technologies, along with the business needs and requirements.

2.3.1 Organizational Structure on Strategic Alignment

Zaribaf and Bayrami (2010) stated that strategy is formulated by top management exclusively and middle-level managers are tasked to implement the strategy unless several changes are required prior to implementation which implies to structure alignment with strategy automation. Organizational structure can be managed and altered through the process of organization design. Organization design is the process by which managers select and manage elements of structure to enable the organization to have control over crucial activities required to accomplish the firm’s objectives. Organization structure is what the managers use to achieve their set objectives (Chitale, Mohanty, & Dubey, 2013).
According to Kumar and Meenakshi (2009), organization structure supports effective controls. Accountability for performance is important in decentralized organizations. It is important to ensure each unit has necessary control over its performance. It is important to focus on units with shared responsibilities since business units and corporate departments keep blaming each other for performance problems. It is also necessary to focus on units whose performances are difficult to measure. Organization structure should acknowledge the problem of unclear responsibilities and ambiguous measures. Clear performance indicators must be established and more precision must be issued for overlapping responsibilities. According to Rajasekar (2014), the organization structure gives a pictorial description of two elements: allocation of resources and decision making process.

The structure of an organization has an impact on the ability of staff to learn, innovate, and contribute in decision making process. From a perspective of a worker, varying structural alignments affect not only economic results and productivity as demarcated by the market place, but also the job fulfilment, commitment, motivation, and perceptions about expectations and obligations. Redesigning organizational structure, thus, will have an impact on the intangible “psychological contract” of each staff (Mills, Helms & Bratton, 2016). Unclear organizational structure makes workers disorganised and unsatisfied, and hinders successful strategy implementation and automation (Pella et al., 2013).

Chitale, Mohanty and Dubey (2013), state that, organization structure also enables organizations to gain competitive advantage towards automation of information. The manner in which the organization designs its structure is a significant determinant. The amount of value that the organization makes is dependent on the organization design, because it is used as a channel to implement organization strategy. Common firm specific advantages such as R&D skills which lead to generation of new refined features in products, swiftly disappears since they can easily be imitated by competitors. It is however tough to copy a good organizational design that creates a successful organizational structure. Okumus’ (2013) framework maintained that organizational structure plays a vital role as a joining factor between external environment context and internal organizational process in ensuring company achievement of strategic goals.
2.3.2 Organizational Culture on Strategic Alignment

Every organization has a distinct style of addressing issues and this distinctiveness is shaped by organizational culture (Vijayakumar & Padma, 2014). If we knew where and what to look for in an organization, you would notice that culture is demonstrated virtually all over the organization. It manifests itself in form of language or words that is used by people as they communicate with each other. It is also exhibited in the artefacts that are on display in the company’s facilities. Every so often, organization culture is recognisable and evidently noticeable, it ranges from the manner in which customers are treated to the artefacts laid out in the organization and most importantly, the dedication and the image elicited by both the organization as a brand and its customer support services. At times, an organization culture is subtle and requires to be read (Flamholtz & Randle, 2011).

Saunders (2008) inferred that employing a new strategy necessitates making changes in taken-for-granted norms and practises that are elements of culture. Organizational culture underpins success in system automation. An initiative that matches the culture of an organization can ensure a rapid and successful system automation. According to Katsioloudes (2012), an organization culture is about the manner in which things are done or get done. The relationship to strategy implementation is that, individuals think it is fairly easy to comprehend. If the organization’s strategic direction is one that is rather enduring and successful, chances are that the culture that has progressed is suitable to the organization’s needs. It may not essentially be the ideal culture, but at least it would seem to have satisfied its strategic purpose.

The reason why scholars and managers overlooked culture for long as a significant aspect in accounting for system automation is because it incorporates the values taken for granted, fundamental assumptions, expectations, collective memories, and classifications that exists in an organization. It signifies the reflection a common organization phrase; “how things are done around here”. It mirrors the predominant ideologies that individuals belief. It expresses a sense of belonging to workers, delivers unwritten and often unspoken rules of how to cope in the organization, and it supports in stabilizing the social system that they experience (Cameron & Quinn, 2011). Culture formed the context for social interaction that ultimately defines how effective an organization can be at sharing, creating, and applying knowledge (Lee & Chen, 2015).
A stable organizational culture improves commitment amongst workers and focus on system automation within the organization as opposed to resistance to rules and that hinder success (Neuert, 2014). As a system of shared meaning, it is a critical variable for effective strategy process. Hofstede concluded that organizational culture is a soft, holistic concept with, however, presumed hard consequences. An organization’s collective culture impacts both the attitudes and succeeding behaviour of its employees as well as the level of performance the organization achieves (Neuert, 2014). Organization culture can also use communication as a strategy in that strategy implementation should first upgrade communication to a strategic level, communication manager needs to get strong support from the top management of the company to ensure system automation (Shin, 2013).

### 2.3.3 Top Management

The leaders of successful automated companies ensure that there is cooperative behaviour among employees, a culture of collaboration, and cross functional initiatives (McKee, 2013). The involvement of the top management of any firm planning innovation adoption and implementation is very crucial to the success of the endeavor. The management of the adoption and implementation of the technological innovation is central and at the very heart of the strategic process for the company. Managerial support ensures that adequate resources are allocated to automation. Positive managerial attitude towards change generally leads to organizational innovativeness (Nyangosi & Arora, 2010). Active involvement by the top management of the company by supporting and providing strategic vision and direction, and sending signals of the importance of the automation to other members of the organization is very crucial in adoption and diffusion of the said automation.

According to Waartsa, Yvonne and Hillegersberg (2012) the firm’s strategic efforts are the actions that help direct where the firm is going. It is important that the strategy of the firm and its management of the automation be well intertwined. Strategic planning is the process that lays the groundwork and direction of the firm over the next several years. The management and leadership of any organization that want to leverage automation for competitive advantage should incorporate the development and nurturing of a culture and processes that support innovation in the overall company strategy. Organizational facilitators are the equivalent of supplier marketing activities in the organization.
automation. Several studies indicate that individual usage of automation not only depends upon attitudes but also on management strategies, policies, and actions.

### 2.4 The Effects of Automation on Organization Performance

Different researchers have used different terminologies to refer to automated banking. These include, electronic banking, Virtual banking, remote electronic banking (Drigă & Isac, 2014) and technology based self-service banking (TBSSB) (Flamholtz & Randle, 2011). Flamholtz and Randle (2011) noted that development of electronic banking through multiple electronic channels adds value to customers in the banking sector. Lower fees, better service quality, consistent service availability, time saving, accessibility of the services, ease of use of the systems, speed of service delivery, convenience, compatibility with lifestyle and security are the key value considerations while choosing the automated service delivery channel.

The advancement in technology is moving faster and provides new ways to aggregate and analyze information, improving connectivity and reducing the marginal costs of accessing information and participating in financial services (Okibo & Wario, 2014). Marous (2015) noted that banks and other financial institutions are investing heavily on innovation labs to pursue research and development so as to bring more design capabilities in-house. This will help in advancing their management tools to meet future customer needs and improve how they compile and report data. Banks reach out to their customers and provide them with both general information and the opportunity of performing interactive retail banking through the use of telecommunication systems. For survival, they have to earn customer loyalty through product features and service excellence and continuous improvement of services offered (Yousafzai, Pallister & Foxall, 2015).

#### 2.4.1 Service Quality

Information technology is core focus of many commercial banks in Kenya for operations and strategic direction (Awuondo, 2016). Its acceptance has brought a dramatic change in retail banking in building and maintaining close relationships with their customers (AliHawari, Hartley, & Ward, 2015). According to Hanzaee & Sadeghi (2010), customers have different perceptions of what service quality is, due to differences in cultural and environmental factors. If banks are not aware of these variances in terms of economic
development, political ideologies and cultural factors, they may fail to meet the service standards. It is therefore important for banks to analyze markets based on customers’ perceptions and design service delivery systems that meets customers’ needs to enhance service performance to gain competitiveness. To capture consumer expectations and perceptions of a service, multi-dimensional research instruments such as SERVQUAL and SERVPERF are used.

Service quality in an electronic commerce environment is known as automated service quality (ASQ) and it is the key determinant of the success or failure of e-commerce. Al-Hawari, Hartley and Ward (2015) limit the definition of automated service quality to the use of the web and internet banking, ignoring attributes of the other automated service delivery channels. Santos (2013) defines it as the customers’ overall evaluation of the excellence of the provision of services through electronic networks.

The SERVQUAL approach uses existing service quality theory to develop a generally accepted model to measure automated service quality hence does not allow past conceptualization of service quality to be discarded. It recognizes only one channel of service delivery at a time and therefore, recommended when the main objective is to pinpoint service quality failure for possible intervention by management of any organization. The SERVPERF approach is a superior method and should be used when overall service quality is to be assessed because it takes into account more service delivery channels in a holistic manner though, it lacks diagnostic power to identify areas of managerial interventions in case of service failure. Although each channel has its own attributes, it is necessary to measure the quality of each channel separately to get a more accurate picture of customers’ perception of the automated service quality (Al-Hawari, Hartley & Ward, 2015).

Different studies describe different service quality dimensions of automation within the banking sector. For instance, Al-Hawari, Hartley and Ward (2015) state that reliability, ease of use, personalization, accessibility, security and efficiency are common ASQ dimensions that both SERVQUAL and SERVPERF share. Ibrahim, Josepha and Ibeh (2016) identified six electronic banking quality dimensions, i.e. efficiency, convenience/accuracy, accessibility/reliability, queue management, personalization/customization, and feedback/complaint management/friendly responsive customer service. This research used the service quality dimensions by Al-Hawari,
Hartley and Ward (2015) which is shared by both the SERVQUAL and the SERVPERF model. These dimensions are; reliability, ease of use, personalization, accessibility, security and efficiency.

2.4.2 Customer Loyalty

Customer loyalty is about commitment of clients to buy various products/services offered by an organization for its success Bell et al. (2015). According Onditi, et al (2012) initial research on brand loyalty could not be generalized to service loyalty due to its dependence on the development of interpersonal relationships. This is because the customer has the intention to stay with the organization and become committed to increase the breadth in terms of products or services purchased and the depth in terms of increasing the number of transactions.

Customer loyalty is important in-service marketing due to its effect on customers’ repeated purchases. Bell, Auh and Smalley (2015) identifies two dimensions of customer loyalty which include; relative attitude and repeat patronage. The relationship between these two dimensions leads to creation of four categories of loyalty: true loyalty, latent loyalty, spurious loyalty and no loyalty (Rai & Srivastava, 2012). Dick and Basu (2014) state that this relationship is mediated by social norms and situational factors. The cognitive, affective and conative antecedents of relative attitude contribute to loyalty together with motivational, perpetual and behavioural consequences. Establishment of a true relationship with customers creates long-term customer loyalty from where organizations understand its key drivers and put in place lasting strategies.

Bose & Rao (2011) noted that customer satisfaction as a result of service quality is the deciding factor in building and maintaining loyalty among customers because it positively impacts purchase intentions as well as behavior. Customers remain loyal when they feel that the organization gives better services/products which meet and exceed their needs. Today’s business world is constantly changing with new marketing and strategy trends, the competitive edge that was initially achieved by organizations due to product differentiation no longer holds due to emergence of similar products and services making it difficult for customers to distinguish them (Bose & Rao, 2011).

Technological advancements have opened up a world of opportunities for a newly empowered customer thus they have the freedom to choose the service provider. This calls for companies to realign their priorities and generate customer loyalty rather than
expect it. Customers have high expectations and when these expectations are not met, they move their business to a competitor. Customers need to feel comfortable and their service experience should make them feel secure. They need to trust that, they will always get a positive experience every time. Earning this trust makes them come back (Bose & Rao, 2011).

2.4.3 Cost Saving

Technological innovation entails implementation of core banking systems which reduces manual tasks and process time. To implement technological innovation, organizations frequently have to reinvent their business systems and develop new working practices. This makes an organization efficient and agile. The eradication of mistakes and data ambiguity also leads to an improvement in the productivity of branches. This enhances reduction in costs due to minimized processing and turnaround time which results to an increase in output and more efficiency in delivery of service to customers (Santos, 2013).

Technological innovation enables banks to lower operation costs through reduction of human resource expenditures, buildings and equipments. This leads to lower expenses related to maintaining physical branches. Johnston (2015) maintain that the cost savings come through combined effects of reduction and better utilization of workforce, more economic usage of space and operational savings that help raise the profit margin by a surprising large number. Banks with high costs of maintaining branch network are therefore motivated to adopt technology by the prospect of future cost savings. Technological innovation reduces transaction costs and provides an electronic avenue for bank to deliver services thus lower costs. These cost savings can offer customers and banks alike reduced cost of banking and still provide efficient and varied services.

The electronic delivery of banking service has become ideal for banks in meeting customers’ expectations and building close customer relationship. It is therefore beyond any reasonable doubt that e-banking has greatly improved customer service. The use of e-banking has impacted customer service quality in many ways since; services are offered at reduced cost, it has resulted in high performance in the banking industry through faster delivery of information from the customer and service provider, customers prefer the use of e-banking because it saves time, it facilitates the use of innovative product or service at a low transaction fees and it encourages queue management which is one of the important dimensions of e-banking service quality (Baran, 2009).
Cost reduction is achieved by introducing e-banking processes which are more efficient. Efficiency is achieved through using electronic channels to source, create, market and deliver services using fewer resources than previously. Technology is applied to reduce paperwork, reduce the human resources needed to operate the processes through automation and improve internal and external communications. Banks have used internet technology so that customers can apply for loans, credit cards and service them as well online. Technological innovation leads to lower transaction cost for banks. It reduces physical overhead since the number of bank staff and branches being maintained are reduced. Initial high costs associated with acquiring and updating information and communication technology infrastructure are distributed over a period of time. The cost reduction associated with this invariably leads to an improvement in bank performance (Ciciretti, Hasan & Zazzara, 2008).

2.5 Chapter Summary

This chapter basically reviews some of the previous literary works regarding the effects of automation on organization performance of commercial banks. The banking industry believes that by adopting automated systems, they are able to improve customer service level and tie to their customer. Managers should foresee to achieve a good alignment between information systems and business for smooth work of the organization. It is important for good alignment that IT professionals be involved during business planning and business professionals to be involved during IT planning. Banks and other financial institutions are investing heavily on innovation to pursue research and development so as to bring more design capabilities in-house. This helps in advancing their management tools to meet future customer needs and improve how they compile and report data. The next chapter covered the research methodology that was used in an attempt to achieve the objectives of the study.
CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction

This chapter focused on the research methodology that was used in the study, in an effort to attain the objectives of the study which is the effects of automation on organization performance of commercial banks in Kenya, a case of National Bank of Kenya. Attention was focused on research design, population and sample design. It also discussed the data collection method, instruments used and research procedures. It puts across the data analysis method and chapter summary.

3.2 Research Design

Kothari (2008) affirms that the research design is the plan on how to collect, measure, and analyse data. A descriptive research design was used in this study. A descriptive research design determines and reports how things are and utilizes a pre-planned design for analysis (Mugenda & Mugenda, 2008). A descriptive research design was used in this study because it allows for analysis of diverse variables at the same time and allows the researcher to describe variables, situations and conditions (Kombo & Tromp, 2013). This design has sufficient provisions for protection from partiality and capitalizes on data reliability (Kothari, 2008). This method provided descriptions of the variables to facilitate answering of the research questions in the study. It was therefore an efficient way to use to obtain information needed to describe the attitudes, opinions and views of the respondents on the effects of automation on organization performance of commercial banks in Kenya, a case of National Bank of Kenya.

3.3 Population and Sampling Design

3.3.1 Population

Mugenda and Mugenda (2008) describes population as objects or items of interest in a given research with a similar observable characteristic. Target population on the other hand is the specific population about which information is desired (Kothari, 2008). This description makes sure that the targeted population is homogeneous. The target population was limited to 652 employees employed at National Bank of Kenya head
office (National Bank of Kenya, 2018). The target population was divided into three categories as shown in Table 3.1.

Table 3.1: Target Population

<table>
<thead>
<tr>
<th>Population category</th>
<th>Frequency</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top level management</td>
<td>35</td>
<td>5.4</td>
</tr>
<tr>
<td>Middle Level Management</td>
<td>86</td>
<td>13.2</td>
</tr>
<tr>
<td>Lower Level Management</td>
<td>531</td>
<td>81.4</td>
</tr>
<tr>
<td>Total</td>
<td>652</td>
<td>100.0</td>
</tr>
</tbody>
</table>


3.3.2 Sampling Design

3.3.2.1 Sampling Frame

The sampling frame is defined as the set of source materials from which the sample is drawn. It provides a means by which particular members of the target population are chosen (Johnson, Scholes & Whittington, 2008). The sampling frame in essence is a complete list of all the cases in the population from which a sample is drawn (Kombo & Tromp, 2006). Since a researcher hardly has direct access to the entire population of interest in social science research, a researcher must rely upon a sampling frame to represent all of the essentials of the population of interest (Kombo & Tromp, 2006). The sampling frame for this study were the employees at National Bank of Kenya head office.

3.3.2.2 Sampling Technique

According to Mugenda and Mugenda (2008), sampling is that part of statistical process which is concerned with the choosing of a subset of individual observations within a population with the goal of yielding some knowledge about the population of concern, necessary for making predictions based on statistical inference. Sampling technique is the process a researcher adopts to gather people, places or things to study (Kombo & Tromp, 2006). Stratified simple random sampling technique was used since the population of interest was not homogeneous and could be subdivided into groups or strata to obtain a representative sample. According to Erik and Marko (2011) stratified random sampling yields estimates of the overall population parameters with greater precision and ascertains a more representative sample which was derived from a comparatively homogeneous
population. A random sample from each stratum was collected in a number proportional to the size of the stratum when compared to the population. This method was chosen because it minimized the chances of bias and all items had an equal opportunity of being chosen.

3.3.2.3 Sample Size

Mugenda & Mugenda (2008) explain a sample to be a small group that is obtained from an accessible population. The sample is drawn from a list of population elements that often differ somewhat from the defined population (Zikmund et al., 2013).

Mugenda & Mugenda, (2008) suggests that for descriptive studies at least 10% - 20% of the total population is enough. The sample population of the study was 15% of the total target population resulting to a sample size of 98 as shown in Table 3.2.

Table 3.2: Sample Size

<table>
<thead>
<tr>
<th>Population category</th>
<th>Frequency</th>
<th>Sample Percentage</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Management</td>
<td>35</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>Middle Level Management</td>
<td>86</td>
<td>15</td>
<td>13</td>
</tr>
<tr>
<td>Lower Level Management</td>
<td>531</td>
<td>15</td>
<td>80</td>
</tr>
<tr>
<td>Total</td>
<td>652</td>
<td>15</td>
<td>98</td>
</tr>
</tbody>
</table>


3.4 Data Collection Method

The study utilized primary data as well as secondary data. Primary data was administered in form of questionnaires. Questionnaires offer a fairly cheap, quick and efficient way of getting large amounts of information from a large sample of people. Data can be collected relatively fast since the researcher did not need to be present when the questionnaires were being completed. This is beneficial for large populations where interviews would be impractical (Kothari, 2014). The questionnaire comprised of closed ended questions so as to save time and also enable respondents to answer questions as coded by the researcher (Cooper & Schindler, 2011).

Closed-ended questions require the respondent to choose from among a given set of responses (Mugenda & Mugenda, 2008). They comprised mainly of likert scales and numerical ranges questions. According to Cooper and Schindler, (2011) likert scales are
the most frequently used variation of summated rating scale; they are the most reliable and provide greater volume of data than many other scale. They are also a better approximation of the normal response curve. This study used likert scale because they communicate interval properties to respondents, and therefore produce data that can be related to an interval scale. The questionnaire was divided into 2 sections. The 1st section contained demographic information concerning age of the respondents, gender of the respondents, education level and years of experience. The questionnaire also contained organisation information that included statement as per research questions. For the closed ended questions, the Likert 5- Point Scale, 1 represented ‘strongly disagree, 2 represented ‘disagree’, 3 represented ‘agree’, 4 represented ‘strongly agree’ and 5 ‘not applicable’.

Secondary data was collected from an online source known as Nairobi Stock Exchange (NSE). This data was necessary to allow for acquisition of financial performance data pertaining National Bank for the last three years. Audited Records for National Bank of Kenya published on the NSE website were reviewed to collect the data. Secondary data collection method is advantageous in that, it saves time since data has already been collected and is highly accessible. It also generates new insights based on previous analysis done on the same data.

3.5 Research Procedure

Research procedure is the process of acquiring subjects and gathering information needed for a study (Erikand & Marko, 2011). The researcher had an introduction letter from United States International University to assure the respondents that the information that they gave, would be treated confidentially and it would be used purely for research purposes when doing actual data collection. The researcher made use of network to persuade targeted respondents to fill up and return the questionnaires to ensure a high response rate. The researcher also encouraged the respondents to participate without holding back the information that they had as the research instruments would not bear their names. The questionnaire was administered through drop and pick method.

The study conducted a pilot study to pretest and validates the questionnaire. The researcher selected 9 pilot respondents from the target population to examine the reliability of the research instrument. Kothari (2008) recommends that a pilot of at least 10% of the population should be represented thus the choice of 9 respondents was
considered as a good pilot representation. The pilot data was not included in the actual study. The pilot study allowed for pre-testing of the research instrument to enhance the instrument’s validity and reliability. The pilot study also allowed the researcher to be accustomed with research and its administration procedure as well as recognize items that required modification. After the pretest, the researcher then refined the questionnaire by adjusting questions that were cited as ambiguous to be more specific and clear. To ensure a high response rate, the questions were simplified to short, easy to understand questions to ensure that the respondents had an easy time responding. Upon refinement of final questionnaire, the researcher proceeded to do the actual data collection.

3.6 Data Analysis

Data analysis is the process of evaluating data using analytical and logical reasoning to scrutinize each component of the data provided which help in inspecting, transforming, and modeling data with the intention of finding useful information and suggesting conclusions (Bryman & Bell, 2015). Analysis was done quantitatively using descriptive statistics such as mean, mode, median and standard deviation. Data analysis was done using SPSS software version 22.

The researcher further employed a regression model to study the relationship between the factors studied here. The research deems regression method to be beneficial for its ability to test the nature of influence of independent variables on a dependent variable. Regression is able to approximate the coefficients of the linear equation, involving one or more independent variables, which best predicted the value of the dependent variable (Cooper & Schindler, 2011). Correlation analysis is the statistical method that can be used to examine the level of association of two variables. This analysis was seen as the first step in statistical modeling to determine the relationship between the dependent and independent variables. Correlation analysis helped detect any chance of collinearity. Correlation values will range from 0 to ±1.0, a value of 0 indicates that there is no relationship between the dependent and the independent variables. On the other hand, a correlation of ±1.0 indicates that there exists a perfect negative or positive relationship. The relationship was regarded as weak when \( r = \pm 0.1 \) to \( \pm 0.29 \), while the relationship was considered medium when \( r = \pm 0.3 \) to \( \pm 0.49 \), \( r \pm 0.5 \) to \( \pm 0.74 \) was strong and when \( r = \pm 0.75 \) and above, the relationship was considered to be of a very strong variable (Cooper & Schindler, 2011).
Eventually, results were summarized and presented in form of tables, graphs and percentages. Cooper and Schindler (2011) states that the use of percentages is important for two reasons; first it simplifies data by reducing all the numbers to range between 0 and 100. Second, they translate the data into standard form with a base of 100 for relative comparisons. Tables present results with clarity and ease of understanding.

3.7 Chapter Summary

This chapter covered the research methodology used for the study. The study adopted a descriptive research design. A descriptive research design determines and reports the way things are and uses a pre-planned design for analysis. The target population was limited to the 652 employees employed at National Bank of Kenya head office. The sampling frame for this study was the employees at National Bank of Kenya head office. Stratified simple random sampling technique was used since the population of interest is not homogeneous and could be subdivided into groups or strata to obtain a representative sample. The study used closed ended questions to gather primary data. The researcher selected a pilot group of 9 individuals from the target population to test the validity of the research instrument. Analysis was done quantitatively by use of descriptive statistics and inferential statistics with the use of SPSS software version 22 where percentages and means were derived. The next chapter discussed the results and findings obtained from the field. The chapter presents the background information of the respondents and findings of the analysis based on the objective of the study.
CHAPTER FOUR

4.0 RESULTS AND FINDINGS

4.1 Introduction

This chapter presented the analysis of study findings on the effect of automation on performance in commercial banks in Kenya using a case study of National Bank of Kenya. This chapter analysed the variables involved in the study and estimates of the model presented in the previous chapter.

4.2 General Information

4.2.1 Response Rate

Out of the targeted 98 respondents, 95 filled in and returned the questionnaires whereas 3 questionnaires were not returned resulting to a response rate of 96.9% which was satisfactory. According to Mugenda and Mugenda (2003), a response rate of 50% is adequate for analysis and reporting, a rate of 60% is good and a response rate of 70% and over is excellent. This response rate therefore was satisfactory to make conclusions on the study.

Table 4.1: Response Rate

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response</td>
<td>95</td>
<td>96.9</td>
</tr>
<tr>
<td>Non-Response</td>
<td>3</td>
<td>3.1</td>
</tr>
<tr>
<td>Total</td>
<td>98</td>
<td>100.0</td>
</tr>
</tbody>
</table>

4.2.2 Gender of the Respondents

Table 4.2 below presents information on gender distribution amongst respondents. Findings showed that 47.4% were male while 52.6% were female. The study showed fair engagement of male and female respondents.
Table 4.2: Gender of the Respondents

<table>
<thead>
<tr>
<th>Gender of the Respondents</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>45</td>
<td>47.4</td>
</tr>
<tr>
<td>Female</td>
<td>50</td>
<td>52.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>95</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

4.2.3 Age of the Respondents

As indicated in Table 4.3, the study was interested in knowing the age of the respondents to deduce the difference in opinion. Most of the respondents as shown by 44.2% fell between the age brackets of 21 to 30 years, 40% were aged between 31 to 40 years, 8.4% were aged 41 to 50 years, 4.2% were aged above 50 years while 3.2% were aged less than 21 years. This showed that the respondents were of age and were able to understand the questions and provide informed responses.

Table 4.3: Age of the Respondents

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 21 years</td>
<td>3</td>
<td>3.2</td>
</tr>
<tr>
<td>21 -30 years</td>
<td>42</td>
<td>44.2</td>
</tr>
<tr>
<td>31 – 40 years</td>
<td>38</td>
<td>40.0</td>
</tr>
<tr>
<td>41 – 50 years</td>
<td>8</td>
<td>8.4</td>
</tr>
<tr>
<td>Above 50 years</td>
<td>4</td>
<td>4.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>95</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

4.2.4 Level of Education of the Respondents

On the level of education of the respondents in the organization, the study requested the respondents to indicate their level of education. From the findings indicated in Table 4.4, the study recognized that 51.6% of the respondents had attained a bachelor’s degree, 28.4% had post graduate qualification, 11.6% had diploma while 8.4% indicated they had other qualification. Therefore, the respondents had the relevant education necessary to complete the questionnaire and in running their businesses.
Table 4.4: Level of Education of the Respondents

<table>
<thead>
<tr>
<th>Level of Education</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diploma</td>
<td>11</td>
<td>11.6</td>
</tr>
<tr>
<td>Degree</td>
<td>49</td>
<td>51.6</td>
</tr>
<tr>
<td>Post Graduate</td>
<td>27</td>
<td>28.4</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
<td>8.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>95</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

4.2.5 Years Worked at National Bank of Kenya

Table 4.5 below presents information regarding the number of years respondents have worked at National Bank of Kenya. 36.8% of the respondents indicated that they had worked for less than 5 years, 33.7% of the respondents indicated that they had worked for 5-10 years, 12.6% of the respondents indicated they had worked for 11 to 15 years and 16 to 20 years. Finally, 4.2% of the respondents had worked for above 20 years, this implied that most of the respondents had been in the bank for a considerable period of time which implies they were in a position to give credible information relating to this study.

Table 4.5: Years Worked at National Bank of Kenya

<table>
<thead>
<tr>
<th>Years</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 5 years</td>
<td>35</td>
<td>36.8</td>
</tr>
<tr>
<td>5 - 10 years</td>
<td>32</td>
<td>33.7</td>
</tr>
<tr>
<td>11 – 15 years</td>
<td>12</td>
<td>12.6</td>
</tr>
<tr>
<td>16 – 20 years</td>
<td>12</td>
<td>12.6</td>
</tr>
<tr>
<td>Above 20 years</td>
<td>4</td>
<td>4.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>95</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

4.2.6 Designation of the Respondents

With regards to designation of the respondents at National Bank of Kenya, 82.1% of the respondents indicated that they were lower level management, 12.6% of the respondents were middle level management and finally 5.3% of the respondents were top level management as indicated in table 4.6 below. This indicated that respondents of different designations were involved in the study.
Table 4.6: Designation of the Respondents

<table>
<thead>
<tr>
<th>Level of Management</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Level Management</td>
<td>5</td>
<td>5.3</td>
</tr>
<tr>
<td>Middle Level Management</td>
<td>12</td>
<td>12.6</td>
</tr>
<tr>
<td>Lower Level Management</td>
<td>78</td>
<td>82.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>95</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

4.3 The Automated Systems Used by the Commercial Banks

As shown in Table 4.7, investigation on effectiveness of the automated systems showed that the respondents strongly agreed that the bank continuously automated its systems as new technologies emerged as shown by (mean = 4.38, std. deviation = 0.23), respondents strongly agreed that Central bank enforces automation of crucial banking systems (mean = 4.24, std deviation = 0.22) and they agreed that the bank had fully automated its core systems as shown by (mean = 3.56, std. deviation = 0.13). The standard deviation represented the variation of responses from the mean with the highest variation being 0.5 an indication that the variations in responses were acceptable since the standard deviations were less than 1.

Table 4.7: Level of Automation

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The bank has fully automated its core systems</td>
<td>3.56</td>
<td>0.13</td>
</tr>
<tr>
<td>The bank continuously automates its systems as new technologies emerge</td>
<td>4.38</td>
<td>0.23</td>
</tr>
<tr>
<td>Central bank enforces automation of crucial banking systems</td>
<td>4.24</td>
<td>0.22</td>
</tr>
</tbody>
</table>

Table 4.8 shows findings on automated systems used by the bank. Findings showed that the respondents strongly agreed that the bank had an automated mobile banking platform accessible to its customers (mean = 4.87, std. deviation = 0.38), the bank utilized ATM technology to serve its customers (mean = 4.40, std. deviation = 0.23) and the bank had an automated internet banking platform accessible to its customers (mean = 4.22, std. deviation = 0.20). Respondents agreed that the bank had automated its SMS banking
solutions (mean = 3.75, std. deviation = 0.14) and they were neutral the bank had automated most utility bill payments (mean = 3.33, std. deviation = 0.17). The standard deviation represented the variation of responses from the mean with the highest variation being 0.5 an indication that the variations in responses were acceptable since the standard deviations were less than 1.

Table 4.8: Automated Systems Used by the Bank

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The bank utilizes ATM technology to serve its customers</td>
<td>4.40</td>
<td>0.23</td>
</tr>
<tr>
<td>The bank has an automated internet banking platform accessible to its customers</td>
<td>4.22</td>
<td>0.20</td>
</tr>
<tr>
<td>The bank has an automated mobile banking platform accessible to its customers</td>
<td>4.87</td>
<td>0.38</td>
</tr>
</tbody>
</table>

4.4 The Organizational Strategic Alignment towards Automation

Investigation on the organizational strategic alignment towards automation presented in Table 4.9 showed that; the respondents strongly agreed that technology is an important aspect in the alignment of information systems with business strategy (mean = 4.34, std. deviation = 0.27). The respondents agreed that for good strategic alignment, IT professionals should be involved during strategic planning (mean = 4.16, std. deviation = 0.19). The study found out that the bank’s business strategies are only formulated by top management (mean = 3.84, std. deviation = 0.14), strategic alignment has appeared as a top concern to the bank (mean = 3.77, std. deviation = 0.14) and that management has ensured alignment exists between information systems and business for smooth work of the organization (mean = 3.55, std. deviation = 0.10). Respondents were neutral that the bank’s strategic direction is one that embraces the rapid change in technology and innovation (mean = 3.34, std. deviation = 0.08). The standard deviation represented the variation of responses from the mean with the highest variation being 0.5 an indication that the variations in responses were acceptable since the standard deviations were less than 1.
Table 4.9: The Organizational Strategic Alignment towards Automation

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic alignment has appeared as a top concern to the bank</td>
<td>3.77</td>
<td>0.14</td>
</tr>
<tr>
<td>The bank’s business strategies are only formulated by top management</td>
<td>3.84</td>
<td>0.14</td>
</tr>
<tr>
<td>For good strategic alignment IT professionals should be involved during strategic planning</td>
<td>4.16</td>
<td>0.19</td>
</tr>
<tr>
<td>Management has ensured alignment exists between information systems and business for smooth work of the organization</td>
<td>3.55</td>
<td>0.10</td>
</tr>
<tr>
<td>The bank’s strategic direction is one that embraces the rapid change in technology and innovation</td>
<td>3.34</td>
<td>0.08</td>
</tr>
<tr>
<td>Technology is an important aspect in the alignment of information systems with business strategy</td>
<td>4.34</td>
<td>0.27</td>
</tr>
</tbody>
</table>

4.4.1 Organizational Structure on Strategic Alignment

Investigation on the organizational structure on strategic alignment presented in Table 4.10 showed that; the respondents were neutral that the organization structure enables the bank gain competitive advantage towards automation of information (mean = 3.32, std. deviation = 0.17), the bank’s organization structure supports effective controls (mean = 3.20, std. deviation = 0.10) and the organization structure enhances the innovativeness of staff (mean = 3.14, std. deviation = 0.05). The standard deviation represented the variation of responses from the mean with the highest variation being 0.5 an indication that the variations in responses were acceptable since the standard deviations were less than 1.
### Table 4.10: Organizational Structure on Strategic Alignment

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The bank’s organization structure supports effective controls</td>
<td>3.20</td>
<td>0.10</td>
</tr>
<tr>
<td>The organization structure enhances the innovativeness of staff</td>
<td>3.14</td>
<td>0.05</td>
</tr>
<tr>
<td>The organization structure enables the bank gain competitive advantage towards automation of information</td>
<td>3.32</td>
<td>0.17</td>
</tr>
</tbody>
</table>

### 4.4.2 Organizational Culture on Strategic Alignment

Table 4.11 below presents information on how organizational culture is strategically aligned. Findings showed that the respondents agreed that the bank’s organizational culture enhanced commitment amongst staff which increased the success of system automation (mean = 4.02, std. deviation = 0.18). Respondents were neutral that the bank’s organizational culture created room for innovativeness (mean = 3.21, std. deviation = 0.09). The standard deviation represented the variation of responses from the mean with the highest variation being 0.5 an indication that the variations in responses were acceptable since the standard deviations were less than 1.

### Table 4.11: Organizational Culture on Strategic Alignment

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The bank’s organizational culture enhances commitment amongst staff which increases the success of system automation</td>
<td>4.02</td>
<td>0.18</td>
</tr>
<tr>
<td>The bank’s organizational culture creates room for innovativeness</td>
<td>3.21</td>
<td>0.09</td>
</tr>
</tbody>
</table>

### 4.4.3 Top Management on Strategic Alignment

Table 4.12 below shows information on how top management was strategically aligned. Results showed that; the respondents agreed that top management provided strategic vision and direction towards automation of systems (mean = 3.76, std. deviation = 0.15) and that top Management ensured that there was cooperation among employees towards automation (mean = 3.65, std. deviation = 0.11). Respondents were neutral that
management had incorporated the development and nurturing of a culture and processes that support innovation in the overall company strategy (mean = 3.37, std. deviation = 0.16) and that top management ensured there was support in form of resource allocation for automation (mean = 3.00, std. deviation = 0.03). The standard deviation represented the variation of responses from the mean with the highest variation being 0.5 an indication that the variations in responses were acceptable since the standard deviations were less than 1.

Table 4.12: Top Management on Strategic Alignment

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Management ensures that there is cooperation among employees towards automation</td>
<td>3.65</td>
<td>0.11</td>
</tr>
<tr>
<td>The top management ensures there is support in form of resources allocated to automation</td>
<td>3.00</td>
<td>0.03</td>
</tr>
<tr>
<td>Top management provides strategic vision and direction towards automation of systems</td>
<td>3.76</td>
<td>0.15</td>
</tr>
<tr>
<td>Management has incorporated the development and nurturing of a culture and processes that support innovation in the overall company strategy.</td>
<td>3.37</td>
<td>0.16</td>
</tr>
</tbody>
</table>

4.5 The Effects of Automation on Organization Performance

4.5.1 Effects of Automation on Service Quality

Investigation on the effects of automation on service quality showed that; the respondents agreed that automation enhanced better service quality leading to organization performance (mean = 4.18, std. deviation = 0.22), automation enhanced constant and consistent service availability (mean = 3.62, std. deviation = 0.14), automation led to the elimination of errors and data redundancies (mean = 3.57, std. deviation = 0.18) and automation led to time saving due to fast service delivery (mean = 3.54, std. deviation = 0.20). The respondents agreed that automation led to reduction in turnaround and processing time (mean = 3.47, std. deviation = 0.20) and that automation of critical banking systems had reduced manual tasks in the bank hence timely service delivery (mean = 3.46, std. deviation = 0.14). Respondents were neutral that automation had
improved connectivity amongst banks leading to better service accessibility to customers (mean = 3.26, std. deviation = 0.10). The standard deviation represented the variation of responses from the mean with the highest variation being 0.22 an indication that the variations in responses were acceptable since the standard deviations were less than 1.

Table 4.13: Effects of Automation on Service Quality

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automation has enhanced better service quality leading to organization performance</td>
<td>4.18</td>
<td>0.22</td>
</tr>
<tr>
<td>Automation has improved connectivity amongst banks leading to better service delivery to customers</td>
<td>3.26</td>
<td>0.10</td>
</tr>
<tr>
<td>Automation has enhanced constant and consistent service availability</td>
<td>3.62</td>
<td>0.14</td>
</tr>
<tr>
<td>Automation has led to time saving due to fast service delivery</td>
<td>3.54</td>
<td>0.20</td>
</tr>
<tr>
<td>Automation of critical banking systems has reduced manual tasks in the bank hence timely service delivery</td>
<td>3.46</td>
<td>0.14</td>
</tr>
<tr>
<td>Automation has led to the elimination of errors and data redundancies</td>
<td>3.57</td>
<td>0.18</td>
</tr>
<tr>
<td>Automation has led to reduction in turnaround and processing time</td>
<td>3.47</td>
<td>0.20</td>
</tr>
</tbody>
</table>

4.5.2 Customer Loyalty

Investigation on the effects of automation on customer loyalty showed that; the respondents agreed that automation has opened up a world of opportunities for customer i.e. personal banking (mean = 3.98, std. deviation = 0.19), automation has given the bank a better competitive edge in the industry which makes it more appealing to the customers (mean = 3.71, std. deviation = 0.12) and automation has enhanced customer satisfaction leading to customer loyalty (mean = 3.49, std. deviation = 0.13). Respondents were neutral that automation has enhanced security of customers transaction (mean = 2.79, std. deviation = 0.08). The standard deviation represented the variation of responses from the mean with the highest variation being 0.19 an indication that the variations in responses were acceptable since the standard deviations were less than 1.
Table 4.14: Customer Loyalty

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automation has enhanced security of customers transactions</td>
<td>2.79</td>
<td>0.08</td>
</tr>
<tr>
<td>Automation has enhanced customer satisfaction leading to customer loyalty</td>
<td>3.49</td>
<td>0.13</td>
</tr>
<tr>
<td>Automation has opened up a world of opportunities for customer i.e. personal banking</td>
<td>3.98</td>
<td>0.19</td>
</tr>
<tr>
<td>Automation has given the bank a better competitive edge in the industry making it more appealing to the customers</td>
<td>3.71</td>
<td>0.12</td>
</tr>
</tbody>
</table>

4.5.3 Cost Saving

Investigation on the effects of automation on cost saving showed that; the respondents agreed that automation has increased revenue for the bank (mean = 4.06, std. deviation = 0.17), automation has reduced the marginal costs for the bank leading to higher profit margins (mean = 3.64, std. deviation = 0.18), automation has lowered fees for the customers (mean = 3.45, std. deviation = 0.15) and that automation has lowered both physical overhead costs as well as operation cost (mean = 3.41, std. deviation = 0.17). The standard deviation represented the variation of responses from the mean with the highest variation being 0.18 an indication that the variations in responses were acceptable since the standard deviations were less than 1.

Table 4.15: Cost Saving

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automation has increased revenue for the bank</td>
<td>4.06</td>
<td>0.17</td>
</tr>
<tr>
<td>Automation has reduced the marginal costs for the bank leading to higher profit margins</td>
<td>3.64</td>
<td>0.18</td>
</tr>
<tr>
<td>Automation has lowered fees for the customers</td>
<td>3.45</td>
<td>0.15</td>
</tr>
<tr>
<td>Automation has lowered both physical overhead costs as well as operation cost</td>
<td>3.41</td>
<td>0.17</td>
</tr>
</tbody>
</table>
4.6 Performance of National Bank of Kenya

The financial performance of the National Bank of Kenya was measured through return on assets and return on equity where secondary data was collected from the financial reports of the bank for a period of 5 years from the year 2012 to the year 2016.

4.6.1 Return on Equity

ROE is not just a mere measure of profitability but also a measure of efficiency. When ROE increases, a company is able to make profit without spending much on capital. In addition, it shows how well the company’s management is making use of the shareholder’s capital. Simply put, when ROE is high the better for the company and shareholders. The return on equity decreased from 72.9% in year 2012 to 71.5% in year 2013 an indication that the bank was not doing well as its ability to generate profit from its capital was low. The bank was able to improve on its performance from year 2013 to 2014 where ROE increased to 81.3%, in year 2015 it increased further to 86.4% and 98.9% in year 2016, an indication that the bank was doing well in terms of financial performance

![Figure 4.1: Return on Equity](image-url)
4.6.2 Return on Assets

The figure of Return on Assets provides investors an idea on the effectiveness of a company in terms of its ability to convert investment into net income. The higher the ROA, the better, because it suggests that the company is earning more money on less investment. The return on assets dropped from 11.36% in year 2012 to 9.18% in year 2013 and further to 8.07% in year 2014 and 7.7% in year 2015 an indication that the bank was not effectively converting its assets into net income. The return on assets increased from 7.7% to 9.6% in year 2016 an indication that the bank’s performance improved.

![Return on Assets Graph](image)

Figure 4.2: Return on Assets

4.7 Correlation Analysis

On the correlation of the study variables, the researcher conducted a Pearson correlation analysis. From the findings on the correlation analysis between performance as measured by return on assets and service quality, the study found that there was a strong positive correlation coefficient as shown by correlation factor of 0.725. There was a strong positive correlation between customer loyalty and performance as shown by a correlation coefficient of 0.844 and association between cost saving and performance was strong and positive as shown by a correlation coefficient of 0.822.
Table 4.16: Correlation Analysis

<table>
<thead>
<tr>
<th></th>
<th>Return on Assets (Y)</th>
<th>Service Quality (X1)</th>
<th>Customer Loyalty (X2)</th>
<th>Cost Saving (X4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return on Assets (Y)</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>.725**</td>
<td>.844**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.021</td>
<td>.000</td>
<td>.015</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>95</td>
<td>95</td>
<td>95</td>
</tr>
<tr>
<td>Service Quality (X1)</td>
<td>Pearson Correlation</td>
<td>.725**</td>
<td>1</td>
<td>.237</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.021</td>
<td>.005</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>95</td>
<td>95</td>
<td>95</td>
</tr>
<tr>
<td>Customer Loyalty (X2)</td>
<td>Pearson Correlation</td>
<td>.844**</td>
<td>.237</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.021</td>
<td>.005</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>95</td>
<td>95</td>
<td>95</td>
</tr>
<tr>
<td>Cost Saving (X4)</td>
<td>Pearson Correlation</td>
<td>.822**</td>
<td>.288</td>
<td>.290</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.015</td>
<td>.005</td>
<td>.005</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>95</td>
<td>95</td>
<td>95</td>
</tr>
</tbody>
</table>

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

4.8 Regression Analysis

In this study, a simple regression analysis was conducted to test the influence among predictor variables. The research used statistical package for social sciences (SPSS V 22.0) to code, enter and compute the measurements of the multiple regressions. The model summary is presented in the Table 4.18

Table 4.17: 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>.899a</td>
<td>.807</td>
<td>.803</td>
<td>.82224</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Service quality, Customer loyalty, Cost saving

Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable. From the findings in the above table the value of adjusted R squared was 0.803 an indication that there was
variation of 80 percent on performance of National bank due to changes in service quality, customer loyalty and cost saving usage at 95 percent confidence interval. This shows that 80 percent changes in performance of National bank could be accounted to service quality, customer loyalty and cost saving. R is the correlation coefficient which shows the relationship between the study variables, from the findings shown in the table above, it is notable that there extists strong positive relationship between the study variables as shown by 0.899.

Table 4.18: Analysis of Variance

<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>93.424</td>
<td>3</td>
<td>31.141</td>
<td>22.664</td>
<td>.013b</td>
</tr>
<tr>
<td>Residual</td>
<td>125.012</td>
<td>91</td>
<td>1.374</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>118.436</td>
<td>94</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: ROA  
b. Predictors: (Constant), Service quality, Customer loyalty, Cost saving

From the ANOVA statistics, the study established the regression model had a significance level of 0.013 which is an indication that the data was ideal for making a conclusion on the population parameters as the value of significance (p-value) was less than 0.05. The calculated value was greater than the critical value (22.664>2.705) an indication that service quality, customer loyalty and cost saving all influenced performance of National bank. The significance value was less than 0.05 indicating that the model was significant.

Table 4.19: 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>(Constant)</td>
<td>5.445</td>
<td>1.116</td>
<td>4.879</td>
<td>.000</td>
</tr>
<tr>
<td>Service Quality $x_1$</td>
<td>.901</td>
<td>.066</td>
<td>.591</td>
<td>13.579</td>
</tr>
<tr>
<td>Customer Loyalty $x_2$</td>
<td>.841</td>
<td>.089</td>
<td>.413</td>
<td>9.438</td>
</tr>
<tr>
<td>Cost Saving $x_3$</td>
<td>.654</td>
<td>.114</td>
<td>.278</td>
<td>5.737</td>
</tr>
</tbody>
</table>

a. Dependent Variable: ROA  

From the data in the above table the established regression equation was

$$Y = 5.445 + 0.901 X_1 + 0.841 X_2 + 0.654 X_3$$
From the above regression equation, it was revealed that holding service quality, customer loyalty and cost saving, to a constant zero, the performance of National bank would be at 5.445, a unit increase in service quality would enhance the performance of National bank by a factor of 0.901, a unit increase in customer loyalty would enhance the performance of National bank by a factor of 0.841 and a unit increase in cost saving would enhance the performance of National bank by a factor of 0.654. All the variables were significant as their significant value was less than (p<0.05).

4.9 Chapter Summary

This chapter sought to find the effects of automation on performance of commercial banks in Kenya: a case of National Bank of Kenya. The study consisted of demographic factors parts, the automated systems used by Commercial Banks, the organizational strategic alignment towards automation, the effects of automation on organization performance, the financial performance of National Bank of Kenya as indicated by its financial reports, Correlation analysis and regression analysis. Results obtained showed that the bank continuously automates its systems as new technologies emerge, technology is an important aspect in the alignment of information systems with business strategy and automation has enhanced better service quality leading to organization performance. The performance of National bank varied across the years as return on assets and return on equity increased and decreased in some years. The study found that there was a strong positive correlation coefficient as shown by correlation factor of 0.899 and regression analysis showed an increase in the 3 variables would result to a positive increase on performance. Chapter five provides summary, discussion, conclusion and recommendations based on the findings of this research.
CHAPTER FIVE

5.0 DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

In this chapter, the researcher provides the major summary of the study, a discussion on the findings of the research compared with the findings in the literature review. The findings were concluded on the basis of effects of automation on performance of commercial banks in Kenya: a case of National Bank of Kenya. Recommendations for further improvement were made through identification of the measures to be taken.

5.2 Summary

The general objective of this study was to analyze the effects of automation on performance of commercial banks in Kenya: a case of National Bank of Kenya. The study was guided by the following research objectives: To determine the automated systems used by the commercial banks, to evaluate the organizational strategic alignment towards automation and to determine the effects of automation on organization performance.

The study adopted a descriptive research design. The target population was limited to 652 employees employed at National Bank of Kenya head office. The sample population of the study was 15% of the total target population resulting to a sample size of 98. Out of the targeted 98 respondents, 95 filled in and returned the questionnaires and thus made a response rate of 96.9% which was satisfactory. The researcher selected a pilot group of 9 individuals from the target population to test the reliability and validity of the research instrument. Analysis was done quantitatively by use of descriptive statistics with the use of SPSS software version 22 where percentages and means were derived. In addition, inferential statistics such as regression and correlation were also carried out to determine the relationship between variables.

Investigation on automated systems used by the bank showed that the bank has an automated mobile banking platform accessible to its customers, the bank utilizes ATM technology to serve its customers and the bank has an automated internet banking platform accessible to its customers.

Investigation on the organizational strategic alignment towards automation showed that technology is an important aspect in the alignment of information systems with business strategy and for good strategic alignment IT professionals should be involved during
strategic planning. Investigation on the organizational structure on strategic alignment showed that organization structure enables the bank gain competitive advantage towards automation of information and the bank’s organization structure supports effective controls which enhance the innovativeness of staff. Investigation on the organizational culture on strategic alignment showed the bank’s organizational culture enhances commitment amongst staff which creates room for innovativeness. Investigation on top management on strategic alignment showed that top management provided strategic vision and direction towards automation of systems which ensured that there was cooperation among employees towards automation.

Investigation on the effects of automation on service quality showed that automation enhanced better service quality leading to organization performance, enhanced constant and consistent service availability, led to the elimination of errors and data redundancies and automation led to time saving due to fast service delivery. Investigation on the effects of automation on customer loyalty showed that automation had opened up a world of opportunities for customers, given the bank a better competitive edge in the industry and enhanced customer satisfaction which led to customer loyalty. Investigation on the effects of automation on cost saving showed that automation increased revenue for the bank, reduced the marginal costs for the bank leading to higher profit margins, lowered fees for the customers and lowered both physical overhead costs as well as operation cost.

On performance of National Bank of Kenya; the return on equity decreased from 72.9% in year 2012 to 71.5% in year 2013 an indication that the bank was not doing well as its ability to generate profit from its capital was low. The bank was able to improve on its performance from year 2013 to 2014 where ROE increased to 81.3%, in year 2015 it increased further to 86.4% and 98.9% in year 2016, an indication that the bank was doing well in terms of financial performance. The return on assets dropped from 11.36% in year 2012 to 9.18% in year 2013 and further to 8.07% in year 2014 and 7.7% in year 2015 an indication that the bank was not effectively converting its assets into net income. The return on assets increased from 7.7% to 9.6% in year 2016 an indication that the bank’s performance improved.

From the findings on the correlation analysis between performance as measured by return on assets and service quality, customer loyalty and cost saving were strong and positive. The correlation coefficient which showed the relationship between the study variables
were strong indicated that there was a strong positive relationship between the study variables. From the ANOVA statistics, the study established the regression model had a significance level of 0.01 which is an indication that the data was ideal for making a conclusion on the population parameters as the value of significance (p-value) was less than 0.05. The calculated value was greater than the critical value (22.664 > 2.705) an indication that service quality, customer loyalty and cost saving all influenced performance of National bank of Kenya.

5.3 Discussion

5.3.1 The Automated Systems Used by the Commercial Banks

Investigation on automated systems used by the bank showed that; the respondents strongly agreed that the bank has an automated mobile banking platform accessible to its customers. The findings supported Anyasi and Otubu (2009) who stated that customers are able to receive real time notification on every credit or debit transaction that they perform as a result of a value add service provided by SMS banking and these feature enables customers to monitor their accounts with a 24-hour service. The bank utilizes ATM technology to serve its customers. The growth in Technology has played a crucial role in improving service delivery standards in the Banking industry (Ngari & Muiruri, 2014). In its simplest form, Automated Teller Machines (ATMs) and deposit machines now enable customers to perform banking transactions beyond banking hours.

The bank has an automated internet banking platform accessible to its customers. The use of internet banking leads to reduction of cost which in return leads to an increase in profitability. Introduction of internet banking has resulted in exceptional speed in banking system and has played a key role in the globalization of banking system (Malhotra & Singh, 2009). Respondents agreed that the bank has automated its SMS banking solutions and they were neutral the bank has automated most utility bill payments. The findings supported Nyangosi, Arora and Singh (2009) argue that in Kenya, most banks have adopted internet, mobile and other e-banking facilities to enrich delivery channels to their customers.

The respondents agreed that customers are more attracted to automation than manual transactions and they were neutral that upon introduction of an automated system, the bank introduces training programs to its staff on the same. Hasan, Schmiedel and Song (2013) deduced that services delivery is informational such that it informs customers
about the products being offered by the bank and is also transactional in that it gives customers a chance to conduct retail banking operations. Internet banking as an alternative channel for retail banking, it has a major influence on efficiency attributed to telephone banking and PC banking. Financial institutions in Kenya has not ignored information systems since they play a significant role in the banking operations because consumers are mindful of technological progressions and demand for quality services (Jun & Cai, 2011).

From the findings, the respondents strongly agreed that the bank continuously automates its systems as new technologies emerge. In addition, they agreed that Internet banking system is easily accessible to its customers who opt to use the system from the comfort of their own homes. Pikkarainen, Karjaluoto and Pahnila, (2014) describes internet banking as an internet platform, that allows customers to use different types of banking services ranging from bill payment to making investment. Further the use of internet banking leads to reduction of cost which in return leads to an increase in profitability. Introduction of internet banking has resulted in exceptional speed in banking system and has played a key role in the globalization of banking system (Malhotra & Singh, 2009).

Respondents strongly agreed that Central bank enforces automation of crucial banking systems and they agreed that the bank has fully automated its core systems. Ngari and Muiruri (2014) earlier noted that Central bank enforces automation of crucial banking systems. The lack of vast adoption of automated systems by some banks has been accredited to limited or unavailability of infrastructure and legislation that provisions for usage automated systems (Nyangosi, Arora & Singh, 2009).

5.3.2 The Organizational Strategic Alignment towards Automation

Investigation on the organizational strategic alignment towards automation showed that; the respondents strongly agreed that technology is an important aspect in the alignment of information systems with business strategy. Vijay (2014) noted strategic alignment has constantly emerged as a key factor for information technology specialists and company executives and it has been consistently and frequently categorized as a vital challenge facing corporations. The respondents agreed that for good strategic alignment IT professionals should be involved during strategic planning and the bank’s business strategies are only formulated by top management. For proper alignment, information
system professionals should be involved in business planning and business professionals to be involved in information systems planning (Batiz-Lazo & Woldesenbet, 2006).

Strategic alignment has appeared as a top concern to the bank and that management has ensured alignment exists between information systems and business for smooth work of the organization. Hauner and Peiris (2015) proposed that information systems planning is very crucial as the organizations attempt to leverage information system applications to improve efficiency, reengineer business processes, gain competitive advantage, and compete more effectively. Respondents were neutral that the bank’s strategic direction is one that embraces the rapid change in technology and innovation. The findings supported Swanson and Ramiller, (2014) that strategic alignment has constantly emerged as a key factor for information technology specialists and company executives and it has been consistently and frequently categorized as a vital challenge facing corporations.

Investigation on the organizational structure on strategic alignment showed that; the respondents were neutral that the organization structure enables the bank gain competitive advantage towards automation of information. Zaribaf and Bayrami (2010) deduced that strategy is formulated by top management exclusively and middle-level managers are tasked to implement the strategy unless several changes are required prior to implementation which implies to structure alignment with strategy automation. Further the bank’s organization structure supports effective controls and the organization structure enhances the innovativeness of staffs. The findings supported Kumar and Meenakshi (2009), organization structure supports effective controls. Accountability for performance is important in decentralized organizations. It is important to ensure each unit has necessary control over its performance.

Investigation on the organizational culture on strategic alignment showed that; the respondents agreed that the bank’s organizational culture enhances commitment amongst staff which increases the success of system automation. Katsioloudes (2012) noted an organization culture is about the manner in which things are done or get done. The relationship to strategy implementation is that, individuals think it is fairly easy to comprehend. Respondents were neutral that the bank’s organizational culture creates room for innovativeness. Neuert (2014) earlier inferred that a stable organizational culture improves commitment amongst workers and focus on system automation within the organization as opposed to resistance to rules and that hinder success.
Investigation on top management on strategic alignment showed that; the respondents agreed that top management provides strategic vision and direction towards automation of systems and top management ensures that there is cooperation among employees towards automation. McKee (2013) confirmed that the involvement of the top management of any firm planning innovation adoption and implementation is very crucial to the success of the endeavor. The involvement of the top management of any firm planning innovation adoption and implementation is very crucial to the success of the endeavor. Respondents were neutral that management has incorporated the development and nurturing of a culture and processes that support innovation in the overall company strategy and that the top management ensures there is support in form of resources allocated to automation. Nyangosi and Arora (2010) earlier deduced that managerial support ensures that adequate resources are allocated to automation. Positive managerial attitude towards change generally leads to organizational innovativeness.

5.3.3 The Effects of Automation on Organization Performance

Investigation on the effects of automation on service quality showed that; the respondents agreed that automation has enhanced better service quality leading to organization performance. Flamholtz and Randle (2011) earlier noted that that automation adds value to customers in the banking sector. Lower fees, better service quality, consistent service availability, time saving, accessibility of the services, ease of use of the systems, speed of service delivery, convenience, compatibility with lifestyle and security are the key value considerations while choosing the automated service delivery channel.

Further automation has enhanced constant and consistent service availability, automation has led to the elimination of errors and data redundancies and automation has led to time saving due to fast service delivery. The findings agreed with Okibo and Wario (2014) that the advancement in technology is moving faster and provides new ways to aggregate and analyze information, improving connectivity and reducing the marginal costs of accessing information and participating in financial services. This will help in advancing their management tools to meet future customer needs and improve how they compile and report information.

The respondents agreed that automation has led to reduction in turnaround and processing time and that automation of critical banking systems has reduced manual tasks in the bank.
hence timely service delivery. Ciciretti, Hasan and Zazzara (2008) deduced that technological innovation entails implementation of core banking systems which reduces manual tasks and process time and to implement technological innovation, organizations frequently have to reinvent their business systems and develop new working practices. The eradication of mistakes and data ambiguity also leads to an improvement in the productivity of branches. Respondents were neutral that automation has improved connectivity amongst banks leading to better service delivery to customers. Santos, 2013 noted that technological innovation entails implementation of core banking systems which reduces manual tasks and process time. To implement technological innovation, organizations frequently have to reinvent their business systems and develop new working practices.

Investigation on the effects of automation on customer loyalty showed that; the respondents agreed that automation has opened up a world of opportunities for customer i.e. personal banking, automation has given the bank a better competitive edge in the industry and automation has enhanced customer satisfaction leading to customer loyalty. Banks reach out to their customers and provide them with both general information and the opportunity of performing interactive retail banking through the use of telecommunication systems. For survival, they have to earn customer loyalty through product features and service excellence and continuous improvement of services offered (Yousafzai, Pallister & Foxall, 2015).

Respondents were neutral that automation has enhanced security of customer transaction. Bose & Rao (2011) noted that customer satisfaction as a result of service quality is the deciding factor in building and maintaining loyalty among customers because it positively impacts purchase intentions as well as behavior. Customers remain loyal when they feel that the organization gives better services/products which meet and exceed their needs. Dick and Basu (2014) stated that establishment of a true relationship with customers creates long-term customer loyalty from where organizations understand its key drivers and put in place lasting strategies.

Investigation on the effects of automation on cost saving showed that; the respondents agreed that automation has increased revenue for the bank. Banks with high costs of maintaining branch network are therefore motivated to adopt technology by the prospect of future cost savings (Johnston, 2015). Automation has reduced the marginal costs for
the bank leading to higher profit margins, automation has lowered fees for the customers and that automation has lowered both physical overhead costs as well as operation cost. Santos (2013) deduced that the eradication of mistakes and data ambiguity also leads to an improvement in the productivity of branches. This enhances reduction in costs due to minimized processing and turnaround time which results to an increase in output and more efficiency in delivery of service to customers.

5.4 Conclusion

5.4.1 The Automated Systems Used by the Commercial Banks

The study concludes that the bank continuously automates its systems as new technologies emerge. Central bank enforces automation of crucial banking systems and that the bank has fully automated its core systems. The main automations made by the National bank were automation of mobile banking, ATM technology and internet banking.

5.4.2 The Organizational Strategic Alignment towards Automation

The study concludes that technology is an important aspect in the alignment of information systems with business strategy, that for good strategic alignment, IT professionals should be involved during strategic planning. The bank’s business strategies are only formulated by top management. Further, strategic alignment has appeared as a top concern to the bank and that management has ensured alignment exists between information systems and business for smooth work of the organization. The organization structure enables the bank gain competitive advantage, the bank’s organizational culture enhances commitment amongst staff which increases the success of system automation and top management provides strategic vision and direction towards automation of systems.

5.4.3 The Effects of Automation on Organization Performance

The study concludes that automation has enhanced better service quality, has enhanced constant and consistent service availability, has led to the elimination of errors and data redundancies and finally, led to time saving due to fast service delivery. Further, automation has led to reduction in turnaround and processing time. In addition, automation of critical banking systems has reduced manual tasks and improved
connectivity. Finally, automation has opened up a world of opportunities for customers which has given the bank a better competitive edge in the industry, enhanced customer satisfaction, customer loyalty, and increased revenue and reduced the marginal costs for the bank leading to higher profit margins.

5.5 Recommendations

5.5.1 Recommendation for Improvement

5.5.1.1 The Automated Systems Used by the Commercial Banks

The study recommends that the bank should continuously automates its systems as new technologies emerge since by adopting automated systems, both customer service level and customer relationship will improve for the better. All the commercial banks should automate all mobile banking services and internet banking since this enhances the speed in banking system and plays a key role in the globalization of banking system and hence play a crucial role in improving service delivery standards in the banking industry.

5.5.1.2 The Organizational Strategic Alignment towards Automation

The study recommends that respondents should incorporate and invest in technology since technology is an important aspect in the alignment of information systems with business strategy. Banks should incorporate a good organizational structure since it enables the bank gain competitive advantage towards automation of information and enhances the innovativeness of staff. In addition, banks should incorporate a good organizational culture since it enhances commitment amongst staff which increases the success of system automation. Finally, top management should provide strategic vision and direction towards automation of systems.

5.5.1.3 The Effects of Automation on Organization Performance

The study recommends that the banks should automate all its services since automation enhance service quality, constant and consistent service availability, elimination of errors and data redundancies and time saving due to fast service delivery. Further, automation enhances customer loyalty, customer satisfaction, cost saving, increase revenue, reduce marginal costs for the bank, lowered fees for the customers, lowered both physical overhead costs and thus enhance efficiency in delivery of service to customers.
5.5.2 Recommendation for Further Studies

This study only focused on National bank of Kenya, a study should be done to cover all the commercial banks in Kenya and thus compare the results. The study focused on commercial banks which have automated systems, thus a study can be done on other institutions which have automated their systems and thus compare the results. The study focused on effects of automation on performance of commercial banks in Kenya, a study can be done on the challenges in automation of commercial banks in Kenya.
REFERENCES


Vijay, R. (2014). *Technology Adoption in Developing Countries*, Oxford University Press.


Wandera, C. M. (2012). Challenges facing Kenya medical research institute in the implementation of the automation strategy.


APPENDICES

Appendix I: Introduction Letter

Dear Sir/Madam,

I am conducting an analysis on the effects of automation on organization performance of commercial banks in Kenya, a case of National Bank of Kenya in partial fulfillment of my Masters of Business Administration Degree at USIU-Africa. The success of the research substantially depends on your cooperation. I hereby request you to respond to the questionnaire as honestly as possible and to the best of your knowledge. The questionnaire is designed for the purpose of this study only, therefore the responses will be treated confidentially and no name will be required from any respondent. Your feedback will be highly appreciated.

Yours Sincerely,

PURITY KEMBOI
Appendix II: Questionnaire

Section A: General Information:

1. Gender of the respondent?
   - Male [ ]
   - Female [ ]

2. What is your age in years
   - Less than 21 years [ ]
   - 21 -30 years [ ]
   - 31 – 40 years [ ]
   - 41 – 50 years [ ]
   - Above 50 years [ ]

3. What is your highest level of education achieved
   - Diploma [ ]
   - Degree [ ]
   - Post graduate [ ]
   - Other [ ]

4. How long have you worked at National Bank of Kenya in terms of years?
   - Below 5 years [ ]
   - 5 – 10 years [ ]
   - 11 – 15 years [ ]
   - 16 – 20 years [ ]
   - Above 20 years [ ]

5. What is your designation?
   - Top Level Management [ ]
   - Middle Level Management [ ]
   - Lower Level Management [ ]
### Section B: The Automated Systems Used by the Commercial Banks

To complete the following questions please read and then rate each statement between 1 to 5 where: 1 –Strongly disagree (SD), 2 –Disagree(D), 3 – Neutral (N), 4 – Agree (A), 5- Strongly Agree (SA).

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree (1)</th>
<th>Disagree (2)</th>
<th>Neutral (3)</th>
<th>Agree (4)</th>
<th>S.Agree (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The bank has fully automated its core systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>The bank continuously automates its systems as new technologies emerge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Central bank enforces automation of crucial banking systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>The bank utilizes ATM technology to serve its customers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>The bank has an automated internet banking platform accessible to its customers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>The bank has an automated mobile banking platform accessible to its customers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>The bank has an automated Internet Banking Platform accessible to its customers</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>8.</td>
<td>The bank has automated most utility bill payments</td>
<td></td>
<td></td>
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<tr>
<td>9.</td>
<td>The bank has automated its sms banking Solutions</td>
<td></td>
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<td></td>
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<tr>
<td>10.</td>
<td>Upon introduction of an automated system, the bank introduces training programs to its staff on the same</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Customers are more attracted to the use of automated systems than manual process</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Section C: The Organizational Strategic Alignment (a plan that assimilates the goals of the organization, guidelines and action procedures into a cohesive whole) towards Automations

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Strategic alignment has appeared as a top concern to the bank</td>
</tr>
<tr>
<td>2.</td>
<td>The bank’s business strategies are only formulated by top management</td>
</tr>
<tr>
<td>3.</td>
<td>For good strategic alignment IT professionals should be involved during strategic planning</td>
</tr>
<tr>
<td>4.</td>
<td>Management has ensured alignment exists between information systems and business for smooth work of the organization</td>
</tr>
<tr>
<td>5.</td>
<td>The bank’s strategic direction is one that embraces the rapid change in technology and innovation</td>
</tr>
<tr>
<td>6.</td>
<td>Technology is an important aspect in the alignment of information systems with business strategy</td>
</tr>
<tr>
<td>7.</td>
<td>The bank’s organization structure supports effective controls</td>
</tr>
<tr>
<td>8.</td>
<td>The organization structure enhances the innovativeness of staffs</td>
</tr>
<tr>
<td>9.</td>
<td>The organization structure enables the bank gain competitive advantage towards automation of information</td>
</tr>
<tr>
<td>10.</td>
<td>The bank’s organizational culture enhances commitment amongst staff which increases the success of system automation</td>
</tr>
<tr>
<td>11.</td>
<td>The bank’s organizational culture creates room for innovativeness</td>
</tr>
<tr>
<td>12.</td>
<td>Top Management ensures that there is cooperation among employees towards automation</td>
</tr>
<tr>
<td>13.</td>
<td>The top management ensures there is support in form of resources allocated to automation</td>
</tr>
<tr>
<td>14.</td>
<td>Top management provides strategic vision and direction towards automation of systems</td>
</tr>
<tr>
<td>15.</td>
<td>Management has incorporated the development and nurturing of a culture and processes that support innovation in the overall company strategy.</td>
</tr>
</tbody>
</table>
## Section D: The Effects of Automation on Organization Performance

1. Automation has increased revenue for the bank
2. Automation has enhanced better service quality leading to organization performance
3. Automation has improved connectivity amongst banks leading to better service delivery to customers
4. Automation has reduced the marginal costs for the bank leading to higher profit margins
5. Automation has lowered fees for the customers
6. Automation has enhanced constant and consistent service availability
7. Automation has led to time saving due to fast service delivery
8. Automation has enhanced security of customers transaction
9. Automation has enhanced customer satisfaction leading to customer loyalty
10. Automation has opened up a world of opportunities for customer i.e. personal banking
11. Automation of critical banking systems has reduced manual tasks in the bank hence timely service delivery
12. Automation has led to the elimination of errors and data redundancies
13. Automation has led to reduction in turnaround and processing time
14. Automation has lowered both physical overhead costs as well as operation cost
15. Automation has given the bank a better competitive edge in the industry

Thank you very much for your cooperation and honest feedback.
### 5 Year Financial Performance of National Bank of Kenya

#### Consolidated Statement of Financial Position

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>ASSETS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government Securities</td>
<td>26,788</td>
<td>27,400</td>
<td>30,091</td>
<td>27,083</td>
<td>54,545</td>
</tr>
<tr>
<td>Net loans &amp; Advances to customers</td>
<td>28,346</td>
<td>39,566</td>
<td>65,641</td>
<td>67,804</td>
<td>59,339</td>
</tr>
<tr>
<td>Fixed &amp; Intangible assets</td>
<td>4,913</td>
<td>4,914</td>
<td>5,518</td>
<td>5,587</td>
<td>5,464</td>
</tr>
<tr>
<td>Other Assets</td>
<td>7,131</td>
<td>20,676</td>
<td>21,842</td>
<td>24,382</td>
<td>15,236</td>
</tr>
<tr>
<td><strong>TOTAL ASSETS</strong></td>
<td>67,178</td>
<td>92,556</td>
<td>113,052</td>
<td>124,056</td>
<td>114,584</td>
</tr>
<tr>
<td><strong>LIABILITIES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer Deposits</td>
<td>55,191</td>
<td>77,993</td>
<td>104,734</td>
<td>110,622</td>
<td>95,967</td>
</tr>
<tr>
<td>Other Deposits</td>
<td>255</td>
<td>825</td>
<td>5,078</td>
<td>2,343</td>
<td>4,234</td>
</tr>
<tr>
<td>Other Liabilities</td>
<td>1,265</td>
<td>1,650</td>
<td>1,056</td>
<td>837</td>
<td>2,232</td>
</tr>
<tr>
<td>Shareholders’ Funds</td>
<td>19,607</td>
<td>11,888</td>
<td>12,224</td>
<td>11,054</td>
<td>11,157</td>
</tr>
<tr>
<td><strong>TOTAL LIABILITIES AND EQUITY</strong></td>
<td>67,178</td>
<td>92,556</td>
<td>113,052</td>
<td>124,056</td>
<td>114,584</td>
</tr>
</tbody>
</table>

#### Consolidated Statement of Profit or Loss

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Operating Income</td>
<td>7,634</td>
<td>8,194</td>
<td>9,933</td>
<td>3,556</td>
<td>11,035</td>
</tr>
<tr>
<td>Operating expenses</td>
<td>1,791</td>
<td>6,195</td>
<td>8,105</td>
<td>7,474</td>
<td>8,154</td>
</tr>
<tr>
<td>Loan Impairments</td>
<td>2,776</td>
<td>2,977</td>
<td>575</td>
<td>3,770</td>
<td>2,696</td>
</tr>
<tr>
<td><strong>PROFIT BEFORE TAX</strong></td>
<td>1,167</td>
<td>1,812</td>
<td>1,303</td>
<td>(1,637)</td>
<td>181</td>
</tr>
</tbody>
</table>
Appendix IV: Research Letter

TO WHOM IT MAY CONCERN.

16th March, 2018

Dear Sir/Madam,

REF: PERMISSION TO CONDUCT RESEARCH – PURITY KEMBOI
STUDENT ID. NO. 624866

The bearer of this letter is a student of United States International University (USIU) -Africa pursuing a Master of Science in Business Administration.

As part of the program, the student is required to undertake a dissertation on the “Effects of Automation on Performance in Commercial Banks in Kenya. A Case Study of National Bank of Kenya” which requires her to collect data.

Please note that information provided will be treated with utmost confidentiality and will only be used for academic purposes.

Kindly assist the student get the appropriate data and should you have any queries contact the undersigned.

Yours Sincerely,

Prof. Amos NJuguna,
Dean – School of Graduate Studies, Research and Extension
Tel: 730 116 442
Email: amnjuguna@usi.ac.ke