

**MANAGEMENT INFORMATION SYSTEM CAPABILITIES AND PERFORMANCE
OF SELECTED COMMERCIAL BANKS IN NAKURU COUNTY NAMELY KENYA
COMMERCIAL BANK, EQUITY BANK, CO-OPERATIVE BANK AND FAMILY
BANK**

**TERENCE AKATU MACHENGO
D53/OL/NKU/32603/2017**


**A RESEARCH PROPOSAL SUBMITTED TO THE SCHOOL OF BUSINESS,
ECONOMICS AND TOURISM IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF
BUSINESS ADMINISTRATION (MANAGEMENT INFORMATION SYSTEMS) OF
KENYATTA UNIVERSITY**

NOVEMBER, 2024

DECLARATION

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

Signature:



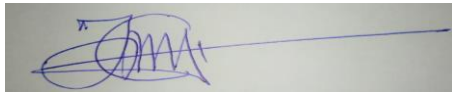
Date:

Terence Akatu Machengo

D53/OL/NKU/32603/2017

This research proposal is submitted for examination with my approval as the appointed university supervisor.

Signature



Date:

Dr. Josphat Kyalo

Lecturer, Department of Management Science

School of Business, Economics and Tourism

Kenyatta University.

DEDICATION

I would like to dedicate this work to my grandmother, Mrs. Agnes Marasha for her relentless efforts to educate me. There is no doubt in my mind that this study could not have been without her many years of dedicated support, counsel and above all love.

To my thesis supervisor Dr. Josphat Kyalo (PhD), I have nothing but gratitude. The many hours and days you spent teaching and encouraging me.

Finally, to my daughter Mercy Marasha, you are the reason I endeavor to do everything with excellence.

ACKNOWLEDGEMENT

First, I thank the Almighty God who makes all things possible and in whom all things consist for His abundant peace, grace and strength. I also wish to thank my thesis advisor, Dr. Josphat Kyalo of the School of Business at Kenyatta University. Dr. Josphat was always available to guide me with my proposal writing. He consistently allowed this study to be my own work but steered me in the right direction when needed. To my wonderful grandmother Mrs. Agnes Marasha, thank you for teaching me the value of academic excellence and inspiring me never to give up. To my daughter Mercy Marasha, I do not take for granted that you allowed me to be away to study when you needed me most.

TABLE OF CONTENTS

DECLARATION.....	ii
DEDICATION.....	iii
ACKNOWLEDGEMENT.....	iv
TABLE OF CONTENTS	v
LIST OF TABLES	viii
LIST OF FIGURES	ix
ABBREVIATIONS AND ACRONYMS.....	x
OPERATIONAL DEFINITION OF TERMS.....	xi
ABSTRACT.....	xii
CHAPTER ONE: INTRODUCTION	1
1.1 Background to the Study	1
1.1.1 Organizational Performance	3
1.1.2 Management Information System Capabilities	5
1.1.2 Commercial Banks in Kenya	7
1.2 Statement of the Problem	7
1.3 Objectives of the Study	9
1.3.1 General Objective	9
1.3.2 Specific Objectives	9
1.4 Research Questions	10
1.5 Significance of the Study	10
1.6 Scope of the Study.....	11
1.7 Limitations of the Study.....	11
1.8 Organization of the Study	12
CHAPTER TWO: LITERATURE REVIEW.....	13
2.1 Introduction	13

2.2 Theoretical Review	13
2.2.1 Balanced Scorecard Model	13
2.2.2 Customer Relationship Management Behaviour Theory	14
2.2.3 Prospect Theory	15
2.2.4 Fraud Triangle Theory	16
2.3 Empirical Review	17
2.3.1 Customer Relationship Management and Bank Performance	17
2.3.2 Risk Management and Bank Performance	19
2.3.3 Loan Management and Bank Performance	20
2.3.4 Fraud Detection and Bank Performance.....	21
2.4 Summary of Literature Reviewed and Research Gaps.....	23
2.5 Conceptual Framework	27
CHAPTER THREE: RESEARCH METHODOLOGY	28
3.1 Introduction	28
3.2 Research Design.....	28
3.3 Target Population	28
3.4 Sampling Design and Sample Size.....	29
3.5 Data Collection Instrument	29
3.6 Pilot Test	30
3.6.1 Validity of Research Instrument.....	30
3.6.2 Reliability of Research Instrument	30
3.7 Data Collection Procedure	31
3.8 Data Analysis and Presentation.....	31
3.9 Ethical Considerations.....	32
REFERENCES.....	33

APPENDICES	37
Appendix I: Cover Letter	37
Appendix II: Questionnaire	38
Appendix III: Work Plan.....	43
Appendix IV: Research Budget.....	44

LIST OF TABLES

Table 2.1: Summary of Literature Reviewed and Research Gaps	23
Table 3.1: Target Population.....	28

LIST OF FIGURES

Figure 2.1: Conceptual Framework	27
--	----

ABBREVIATIONS AND ACRONYMS

CBK	Central Bank of Kenya
CIR	Operational Risk Indicator
CRM	Customer relationship management
ICT	Information Communication Technology
KBA	Kenya Bankers Association
LIQR	Liquidity risk management indicator
MENA	Middle East and Northern Africa
MIS	Management Information Systems
NACOSTI	National Council for Science Technology and Innovation
NDIC	Nigerian Deposit Insurance Corporation
NPLR	Risk management indicator
NPLs	Nonperforming Loans
SEM	Structural Equation Modeling
SPSS	Statistical Packages For Social Sciences
SRCC	Spearman Rank Correlation Coefficient
ROA	Return on Assets
BP	Bank Performance

OPERATIONAL DEFINITION OF TERMS

Organizational Performance	Refers to the overall effectiveness and efficiency of an organization in achieving its goals and objectives
Management Information System Capability	Refers to the ability of an organization's information system to effectively collect, process, store, and analyze data in order to support decision-making and achieve organizational goals
Customer Relationship Management	Refer to a comprehensive approach that focuses on managing and nurturing relationships with customers.
Risk Management	Refers to an organization's ability to identify, assess, and mitigate risks effectively
Loan Management	Refers to the ability of a financial institution or individual to effectively manage and administer loans throughout their lifecycle.
Fraud Detection	Refers to an organization's capacity to identify and prevent fraudulent activities within its operations.

ABSTRACT

Commercial banks deal with sensitive customer information and financial transactions, making data security a top priority. Implementing strong security measures to protect against cyber threats and unauthorized access requires significant investment in technology and expertise. Therefore, this study seeks to investigate the influence of management information system capabilities on the performance of selected banks in Nakuru County-Kenya. The study specific objectives will be to establish the influence of customer relationship management capability, risk management capability, loan management capability and fraud detection capability on the performance of selected banks in Nakuru County-Kenya. The study will be guided by the following theories; balance scorecard model, CRM behavior theory, prospect theory and fraud triangle theory. This study will use descriptive research design. The study will target four commercial banks operating in Nakuru County namely; Kenya commercial bank, Equity bank, Cooperative bank and Family bank. The respondents will be employees working with these banks who will be 317 in total. Stratified sampling technique will be used to put the respondents into respective banks to ensure that all the respondents are adequately represented. Simple random sampling method will be used to select the respondents. The sample size will be 177 respondents. The study will collect primary data using a semi-structured questionnaire. The researcher will undertake a content validity test to confirm that the questionnaires are written in easy-to-understand language and that the questions are clear. A Cronbach alpha test will be used to determine the reliability. Qualitative data will be analysed qualitatively by organizing data into themes based on study objectives and the results will be presented in narrative form. The analysed data will be presented using tables and figures.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

A high-performing financial institution facilitates economic growth by providing essential financial services to individuals, businesses, and governments, promotes stability in the financial system and fosters investor confidence and attracts both domestic and foreign investments (Berger, DeYoung, Genay & Udell, 2020). According to Gupta, Yesmin and Khan (2023) better financial institution performance promotes financial inclusion by providing access to financial services for all segments of society. It ensures that individuals and businesses, regardless of their socio-economic status, have access to banking services, credit facilities, insurance, and investment opportunities. This inclusivity helps to reduce income inequality, promote social mobility, and create a more equitable society. Therefore, it is crucial for governments and regulators to create an enabling environment that encourages the development and growth of such institutions to ensure the overall prosperity of the nation.

Mang'ana (2022) observes that commercial banks play a crucial role in the economy by providing financial services to individuals, businesses, and governments. However, the traditional banking system often faces challenges in terms of efficiency, speed, and customer experience. To address these issues, commercial banks are increasingly turning to technological advancements to enhance their operations and improve overall efficiency. According to Gichungu and Oloko (2023) technological advancements are playing a crucial role in enhancing the efficiency of commercial banks which are also streamlining operations, reducing costs, improving customer experience, and enabling banks to make more informed decisions. Therefore, as technology continues to evolve, commercial banks must embrace these advancements to stay competitive and meet the evolving needs of their customers.

Vannirajan and Manimaran (2019) observed that Management Information Systems (MIS) play a crucial role in enhancing the operational efficiency of commercial banks. These systems help in streamlining various processes within the organization, leading to improved decision-making, increased productivity, and better customer service. According to Akhter (2022) the implementation of management information systems in commercial banks has a significant impact on operational efficiency, enabling them to stay competitive in a rapidly evolving industry. Therefore, banks can achieve higher levels of productivity and profitability by leveraging technology to streamline processes, improve decision-making, and enhance customer service.

Grigorian and Manole (2018) observe that the Bank of America is one of the largest commercial banks in the United States and has a strong presence in various advanced economies. The bank has shown consistent improvement in its financial performance, driven by its focus on cost management, digital innovation, and customer-centric strategies. Bank of America has also benefited from a strong economy and favorable interest rate environment in recent years. According to Wozniowska (2022) the BNP Paribas is one of the largest commercial banks in Europe and has a strong presence in various advanced economies. The bank has consistently reported solid financial results, driven by its diversified business model and strong risk management practices. BNP Paribas has also been actively investing in digital transformation to enhance its customer experience and improve operational efficiency.

In Sub-Saharan Africa, where many financial institutions operate across multiple branches and locations, MIS enables seamless information sharing and real-time collaboration. Employees can access and update information from any location, ensuring that all stakeholders have access to the most up-to-date data. This enhances decision-making processes, as managers can make informed choices based on accurate and timely information, leading to improved operational efficiency (Nyanzu, Pephrah & Ayayi, 2019). According to

Ali, Gueyie and Okou (2021) financial institutions in Sub-Saharan Africa often face challenges related to manual processes, which are time-consuming, error-prone, and hinder productivity. MIS automates these tasks, such as data entry, transaction processing, and report generation, reducing the reliance on manual labor and freeing up employee' time for more value-added activities. This automation not only improves efficiency but also minimizes the risk of human error, leading to more accurate and reliable data.

Njenga (2019) observed that the utilization of technology has greatly influenced the performance of commercial banks in Kenya, revolutionizing the way they operate and interact with customers. In addition, commercial banks in Kenya have witnessed significant improvements in their operations, customer service, and overall efficiency by embracing technological advancements. According to Aduda and Kingoo (2020) the adoption of technology has enabled banks to streamline their internal processes and improve operational efficiency through adopting automated systems and software that have replaced manual tasks, reducing the risk of errors and increasing the speed and accuracy of various banking operations.

1.1.1 Organizational Performance

Performance of an organization refers to the overall success and effectiveness of the organization in achieving its goals and objectives by consistently meeting or exceeding targets and demonstrating strong performance across all key area (Waal, 2017). According to Gerrish (2022) the performance of an organization is the significant milestones, accomplishments, and successes that a company has attained over a period of time and such achievements are often used to measure its success and differentiate it from competitors. Therefore, a better performing organization indicates that it is able to produce more output with the same or fewer resources, leading to increased profitability and competitiveness. In

this study, organizational performance will be measured in terms of efficiency, effectiveness and profitability.

Weersainghe and Perera (2018) indicate that profitability serves as an indicator of the performance of commercial banks as it reflects the ability of the bank to generate income and manage expenses effectively. According to Mbekomize and Mapharing (2022) a profitable bank is able to attract investors, retain customers, and withstand economic downturns. It also allows the bank to reinvest in its operations, expand its services, and remain competitive in the market. Additionally, profitability is closely monitored by regulators and stakeholders to ensure the financial stability and sustainability of the bank in the long term.

Operational efficiency refers to the ability of an organization to utilize its resources effectively and efficiently in order to achieve its goals and objectives and is of utmost importance within an organization as it directly impacts its overall performance and success (Lam, Yeung & Cheng, 2022). According to Fugate, Stank and Mentzer (2023) operational efficiency enables organizations to adapt quickly to changing market conditions and customer demands. By having efficient processes in place, organizations can respond promptly to market trends, introduce new products or services, and stay ahead of the competition. This flexibility and agility are essential in today's fast-paced business environment.

Henri (2018) observes that effectiveness of an organization refers to its ability to achieve its desired outcomes and objectives efficiently. It involves the organization's ability to utilize its resources, processes, and strategies in a way that maximizes results and minimizes waste. An effective organization is able to align its activities with its goals, make informed decisions, adapt to changes, and continuously improve its performance. According to Gonfa (2020) the effectiveness of a commercial bank is greatly influenced by the implementation of Management Information Systems (MIS) because commercial banks can efficiently collect,

store, and analyze vast amounts of data related to their operations. This data includes customer information, transaction records, financial statements, and market trends.

1.1.2 Management Information System Capabilities

Management information system capability refers to the ability of an organization's information system to effectively collect, process, store, and distribute information to support decision-making and achieve organizational goals (Peppard & Ward, 2021). According to Mithas, Ramasubbu and Sambamurthy (2022) management information system capability is crucial for organizations to effectively manage and utilize information for decision-making and strategic planning and also enables organizations to streamline operations, improve productivity, reduce costs, and enhance customer service. Management information system capability will be measured in terms of customer relationship management capability, risk management capability, loan management capability and fraud detection capability.

Haislip and Richardson (2017) observe that Customer relationship management (CRM) capability can enhance the performance of commercial banks by providing a comprehensive view of customer interactions and preferences. The banks can better understand their needs and preferences, allowing them to tailor their products and services to meet those needs by collecting and analyzing data on customer behavior. According to Soltani, Zareie, Milani and Navimipour (2022) CRM enables commercial banks to better target their marketing efforts and attract new customers. The banks can create targeted marketing campaigns that are more likely to resonate with their target audience by analyzing customer data and identifying trends. This can help banks attract new customers and grow their customer base, ultimately driving revenue growth.

Ariff, Ahmad and Ismail (2017) observe that integrating risk management into the management information system allows banks to identify and assess potential risks more

effectively and enables banks to monitor and track risk indicators in real-time. According to Ibrahim and Esa (2022) the utilization of risk management as a capability within the management information system enables banks to enhance their risk reporting and compliance processes and also allows banks to leverage advanced analytics and predictive modeling techniques. Therefore, proper management of risk enables banks to identify and assess risks more effectively, monitor risk indicators in real-time, implement stress testing and scenario analysis, enhance risk reporting and compliance processes, and leverage advanced analytics.

Mbam and Igboji (2021) observe that implementing loan management capabilities within management information systems allows banks to streamline and automate their loan processes. This includes loan origination, underwriting, approval, disbursement, and monitoring. Ngugi and Koori (2023) observe that loan management capabilities within management information systems enable banks to effectively assess and manage credit risk. These systems can integrate credit scoring models, financial analysis tools, and data analytics to evaluate the creditworthiness of borrowers. Therefore, by leveraging these capabilities, banks can make more informed lending decisions, minimize the risk of default, and optimize their loan portfolios.

Fraud detection stems from the increasing prevalence of financial fraud in the banking industry, which poses a significant threat to both the financial stability of banks and the trust of their customers (Taherdoost, 2021). According to Joseph, Albert and Byaruhanga (2023) the implementation of fraud detection technology allows banks to improve their operational efficiency by automating the detection process and reducing the need for manual intervention. This not only saves time and resources but also enables banks to respond more quickly to potential threats, minimizing the impact of fraud on their bottom line.

1.1.2 Commercial Banks in Kenya

The Companies Act, the Banking Act, the Central Bank of Kenya Act and the various prudential guidelines issued by the Central Bank of Kenya (CBK), govern the Banking industry in Kenya. The banking sector was liberalised in 1995 and exchange controls lifted. The CBK, which falls under the Minister for Finance's docket, is responsible for formulating and implementing monetary policy and fostering the liquidity, solvency and proper functioning of the financial system. The CBK publishes information on Kenya's commercial banks and non-banking financial institutions, interest rates and other publications and guidelines. The banks have come together under the Kenya Bankers Association (KBA), which serves as a lobby for the banks' interests and addresses issues affecting its members.

There are forty four (44) commercial banks licensed by the Central Bank of Kenya (CBK), the national banking regulator. Commercial banks play a major role of the financial system of all the countries. Financial system of a country is much needed for the successful economic development and performance of all the countries. According to the Ahmad, Raza, Amjad and Akram (2011) it can be seen that, banks and financial institutions are special components of a healthy and wealthy financial system of the country. Those can assist the investors for their fair investment through this investment; a country can obtain an efficient capital and money market in country.

1.2 Statement of the Problem

Commercial banks typically have multiple systems in place, such as core banking systems, customer relationship management systems, and risk management systems. Integrating these systems and ensuring seamless data flow can be complex and time-consuming (Otieno, 2021). Muro, Magutu and Getembe (2023) observed that commercial banks deal with sensitive customer information and financial transactions, making data security a top priority.

Implementing strong security measures to protect against cyber threats and unauthorized access requires significant investment in technology and expertise. In addition, MIS implementation requires substantial financial resources for software licenses, hardware infrastructure, training, and ongoing maintenance. Therefore, overcoming technical challenges, addressing organizational resistance, ensuring data quality, and dealing with human resource constraints are crucial for successful MIS implementation.

During the year ended June 30, 2023, the Kenya banking industry comprised of 38 commercial banks. The financial position and performance of the industry was that the gross loans and advances increased by 14.0 percent from KSh 3.5 trillion in June 2022 to KSh 4.0 trillion in June 2023. In June 2023, core capital and total capital to total risk weighted assets ratios were 16.6 percent and 18.6 percent respectively. Liquidity remains strong with the overall liquidity ratio in June 2023 standing at 49.7 percent compared to 52.5 percent reported in June 2022. However, Asset Quality deteriorated with the gross nonperforming loans (NPLs) increasing from KSh 514.4 billion in June 2022 to KSh 576.1 billion in June 2023. Profitability decreased by KSh 13.1 billion. The annual profit before tax decreased by 6.4 percent to KSh 205.0 billion in the year ended June 2023 from KSh 218.1 billion in the year ended June 2022.

There are a number of studies that have been done in relation to management information system capability and organizational performance. For instance, Odindo (2022) investigated the influence of management information system agility on performance of commercial banks in Nairobi City County, Kenya and the study found out that service quality, ICT literacy, system security, information storage were significant and had positive effect on performance of commercial banks. However, the study presents a conceptual gap. Wandili (2022) investigated the influence of management information system capabilities on the supply chain performance of listed manufacturing firms in Kenya and regression analysis

results indicate that information system infrastructure, integration capabilities and human resource capabilities have a significant influence on supply chain performance. However, the study focused manufacturing firms thus presenting a contextual gap. Ifeoma (2022) examined the effect of management information system on the performance of deposit money banks in Nigeria and found that MIS has significant effect in improving the performance of deposit taking banks. However, the study focused on deposit taking banks in Nigeria hence presents a contextual gap. Therefore, this study seeks to investigate the influence of management information system capabilities on the performance of selected commercial banks in Nakuru County-Kenya.

1.3 Objectives of the Study

1.3.1 General Objective

The general objective of this study will be to investigate the influence of management information system capabilities on the performance of selected commercial banks in Nakuru County-Kenya.

1.3.2 Specific Objectives

This study seeks to;

- i. Establish the influence of customer relationship management and the performance of selected commercial banks in Nakuru County-Kenya.
- ii. Examine the influence of risk management and the performance of selected commercial banks in Nakuru County-Kenya.
- iii. To assess the influence of loan management and the performance of selected commercial banks in Nakuru County-Kenya.
- iv. To determine the influence of fraud detection and the performance of selected commercial banks in Nakuru County-Kenya.

1.4 Research Questions

The study seeks answers to the following research questions;

- i. What is the influence of customer relationship management on the performance of selected banks in Nakuru County-Kenya?
- ii. What is the influence of risk management on the performance of selected banks in Nakuru County-Kenya?
- iii. What is the influence of loan management on the performance of selected banks in Nakuru County-Kenya?
- iv. What is the influence of fraud detection on the performance of selected banks in Nakuru County-Kenya?

1.5 Significance of the Study

Management Information Systems (MIS) play a crucial role in this regard, as they provide banks with the tools and insights needed to effectively manage their operations, risks, and customer relationships. By examining the impact of MIS capability on the management of commercial banks, researchers and practitioners can gain valuable insights into how technology can be leveraged to drive strategic decision-making, improve operational efficiency, and enhance customer service. For example, MIS can help banks streamline their processes, automate routine tasks, and provide real-time data and analytics to support decision-making at all levels of the organization. Stakeholders can identify potential challenges and opportunities for improvement. This knowledge can help banks develop strategies to enhance their MIS capabilities, address any gaps or weaknesses, and stay ahead of the competition. The study will also open a gap to other researchers who would wish to study on the related area of study.

1.6 Scope of the Study

This study will focus on performance of selected commercial banks in Nakuru County, Kenya. These banks will include; Kenya commercial bank, Equity bank, Cooperative bank and Family bank. The management information system capability will be measured in terms of customer relationship management capability, risk management capability, loan management capability and fraud detection capability. The respondents will be employees working with these selected banks. Data will be collected using questionnaires. The performance of these banks will be measured from the year 2019 to 2023.

1.7 Limitations of the Study

This study may be limited because of limited access to data, strict regulatory requirements, confidentiality concerns, and resistance from employees or management. To overcome these challenges, researchers will establish strong relationships with key stakeholders, ensure compliance with regulations, use anonymized data where possible, and communicate the benefits of the study to gain buy-in from all parties involved. The study may also face challenges due to organizational culture and competing priorities. To overcome these obstacles, researchers will engage with stakeholders early on, align research goals with business objectives, communicate the value of the study to decision-makers, and adapt research methods to fit the unique context of the institution. The study may also face a challenge due to data security concerns, regulatory hurdles, and changing market conditions. To mitigate these challenges, researchers can prioritize data privacy and security, stay informed about regulatory changes, adapt research protocols as needed, and maintain flexibility in their approach to account for external factors that may impact the study.

1.8 Organization of the Study

This proposal comprises of three chapters. Chapter one presents the background to the study, research problem, objectives of the study, purpose of the study, research questions, significance of the study, scope of the study, limitation of the study and assumptions of the study. Chapter two will present the theoretical review, empirical review, conceptual framework, knowledge gaps and summary of the literature review. Chapter three will highlights the research methodology including research design, target population, sampling and sample size, research instruments, pilot study, data collection techniques, method of data analysis and ethical issues.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents a literature review regarding the influence of management information system capabilities on organizational performance. This is presented in the following sections; theoretical review, empirical review, summary of literature reviewed and research gaps and conceptual framework.

2.2 Theoretical Review

The study will be guided by the following theories; balance scorecard model, CRM behavior theory, prospect theory and fraud triangle theory.

2.2.1 Balanced Scorecard Model

The balanced scorecard model by Kaplan and Norton (1996) is a strategic management tool that helps organizations measure and manage their performance in a balanced and comprehensive manner. It provides a framework for organizations to align their objectives, measures, targets, and initiatives across different perspectives, including financial, customer, internal processes, and learning and growth. One of the key significances of the balanced scorecard model according to Kaplan and Norton (1996) is that it enables organizations to have a holistic view of their performance. By considering multiple perspectives, organizations can avoid the pitfalls of solely focusing on financial measures, which may not capture the full picture of their performance. The balanced scorecard allows organizations to assess their performance from various angles, ensuring that they are not neglecting important aspects of their operations.

Burtseva and Chausow (2018) observe that the balanced scorecard model helps organizations translate their strategy into actionable objectives and measures. It provides a clear framework

for setting targets and tracking progress towards strategic goals. By linking measures to strategic objectives, organizations can ensure that their efforts are aligned with their overall strategy and that they are making progress towards their desired outcomes. According to Bostan and Grosu, (2021) balanced scorecard model promotes communication and alignment within the organization. Therefore, by providing a common language and framework for performance measurement, the balanced scorecard facilitates communication and understanding among different departments and levels of the organization.

This model is relevant to the study because it enables organizations to monitor and manage performance in a timely manner. By regularly tracking and reviewing performance measures, organizations can identify areas of improvement and take corrective actions when necessary. This proactive approach to performance management helps organizations stay agile and responsive to changing market conditions. Therefore, by adopting the balanced scorecard model, organizations can enhance their performance and achieve their strategic objectives.

2.2.2 Customer Relationship Management Behaviour Theory

The theory of customer relationship management behavior by Labus (2007) is based on the idea that understanding and managing customer relationships is essential for the success of a business. This theory posits that customers are not just passive recipients of products or services, but active participants in the relationship with the company. According to this theory, Laban (2007) indicate that customer relationship management behavior involves understanding the needs, preferences, and behaviors of customers in order to build and maintain strong, long-lasting relationships. This includes gathering and analyzing data on customer interactions, preferences, and feedback, as well as using this information to tailor products, services, and marketing strategies to meet the needs of individual customers.

Wetsch (2019) observe that the theory of customer relationship management behavior emphasizes the importance of communication and engagement with customers. This includes providing excellent customer service, responding to feedback and complaints in a timely and effective manner, and building trust and loyalty through consistent and personalized interactions. Rababah, Mohd and Ibrahim (2021) observe that Customer relationship management (CRM) behavior theory focuses on understanding and predicting customer behavior in order to build and maintain strong relationships with them. Implementing this theory within organizations involves incorporating strategies and practices that are based on the principles of CRM behavior theory. Therefore, implementing CRM behavior theory within organizations can help improve customer satisfaction, loyalty, and retention, ultimately leading to increased profitability and long-term success.

2.2.3 Prospect Theory

Prospect theory was first introduced in 1979 by Amos Tversky and Daniel Kahneman, who later developed the idea in 1992. The pair said that the prospect theory was better at accurately describing how decisions are made, compared to the expected utility theory. The theory suggests that individuals make decisions based on the potential gains and losses they perceive, rather than on objective probabilities. According to Holmes, Holcomb and McGuire (2017) the utilization of prospect theory within organizational settings involves applying the principles and concepts of prospect theory to decision-making processes and strategies within a company or any other type of organization.

In organizational settings, prospect theory can be used to understand and predict how employees, managers, and leaders make decisions, and how these decisions may impact the overall performance and success of the organization (Levy, 2017). By considering the biases and heuristics inherent in prospect theory, organizations can design better decision-making processes, improve risk management, and enhance overall performance. According to

Bromiley and Rau (2022) prospect theory suggests that individuals tend to be risk-averse when facing potential gains, but risk-seeking when facing potential losses. By understanding these biases, organizations can better assess and manage risks. For example, when evaluating potential investments or new projects, decision-makers can consider the potential gains and losses associated with each option, and adjust their risk tolerance accordingly.

This theory is relevant to the study because the utilization of prospect theory within organizational settings can provide valuable insights into decision-making processes, risk management, incentive systems, and communication strategies. By considering the biases and heuristics inherent in prospect theory, organizations can make more informed and effective decisions, leading to improved performance and success.

2.2.4 Fraud Triangle Theory

The fraud triangle theory, developed by criminologist Donald Cressey in 1953, suggests that three factors contribute to the occurrence of fraud: opportunity, pressure, and rationalization. Firstly, the theory emphasizes the importance of opportunity in facilitating fraud. This can include measures such as segregation of duties, regular audits, and the use of technology to detect and prevent fraudulent activities. Secondly, the fraud triangle theory highlights the role of pressure or motivation in driving individuals to commit fraud. This can include financial pressures, such as personal debt or a desire for material gain, as well as non-financial pressures, such as job insecurity or a desire for recognition. Lastly, the fraud triangle theory recognizes the importance of rationalization in justifying fraudulent actions. Individuals who commit fraud often find ways to rationalize their behavior, such as believing that they are entitled to the stolen funds or that they are only borrowing the money temporarily.

In an organizational context, Kagias, Cheliatsidou, Garefalakis, Azibi and Sariannidis (2022) observe that organizations should focus on implementing strong internal controls and risk

management systems to minimize the opportunities for fraud to occur, promote a positive work environment, providing fair compensation, and offering opportunities for career advancement, which can reduce the likelihood of employees feeling the need to engage in fraudulent behavior and foster a strong ethical culture, promoting transparency and accountability, and providing ethics training to employees. Therefore, by implementing appropriate measures to minimize opportunities for fraud, addressing the underlying pressures that may drive individuals to commit fraud, and promoting an ethical culture, organizations can effectively prevent and detect fraudulent activities.

2.3 Empirical Review

This section brings out relevant details concerning the study variables based on the review of other research published works. It reviews the study variables that include customer relationship management, risk management, loan management and fraud detection capabilities of the management information systems

2.3.1 Customer Relationship Management and Bank Performance

Ali, Habidin, Jamaludin, Khaidir and Shazali (2018) investigated the influence of customer relationship management and organizational performance in Malaysian healthcare industry. Sampling method is used in this study by using structured questionnaire. The population of this study comprised in Malaysian healthcare industry. Questionnaires were distributed to healthcare's manager in Malaysian healthcare industry. To analyse the data, two statistical techniques were adopted. A Structural Equation Modeling (SEM) technique was utilised to perform the required statistical analysis of the data from the survey. CRM plays an important role in Malaysian Healthcare Industries. Collaboration of top management, technology and organizational culture should lead the organization to improve their performance in healthcare industry. However, the study focused on healthcare sector Malaysia.

Kenneth, Justin and Adiele (2020) investigated the influence of customers' relationship management on banks' performance in Nigeria. The nomothetic methodology was adopted and forty copies of structured questionnaires were our primary data collection instrument which was distributed to ten functional and registered money deposit banks in south-south zone of Nigeria. However, the postulated hypotheses were tested by employing the Spearman Rank Correlation Coefficient (SRCC) statistical tool which was facilitated by the statistical packages for social sciences (SPSS). The study however showed that a significant relationship exists between CRM & BP. Furthermore, it was found that amongst the dimensions of CRM, customer identification and retention impacts more significantly on business performance. The study therefore concludes that Nigerian money deposit banks should increase their customer identification and retention strategies since they commensurably impact on their level of performance. However, the study focused on banks' performance in Nigeria.

Mungla (2018) investigated the effects of customer relationship management systems on financial performance of Commercial Banks in Kenya. The target population for this study were commercial banks that have been in operation between the years 2013 to 2017. A cross sectional study design was used. Primary data was collected using structured questionnaires. The findings showed that with the adoption of CRM systems commercial banks in Kenya have improved their overall engagement with their customers. This has led to innovation of a variety of products for bank customers. The main challenges observed in the adoption of CRM systems were rapid rate of technological change on CRM systems and high operational costs such as need for continuous staff training resulting in the need to hire skilled staff. However, the study focused on financial performance between the years 2013 to 2017.

2.3.2 Risk Management and Bank Performance

Harb, El-Khoury, Mansour and Daou (2023) examined the influence of risk management on bank performance: evidence from the MENA region. This study uses a panel data regression analysis on a sample of 51 listed commercial banks operating in 10 MENA countries during the period 2010–2018. The results show that credit risk management does not affect the accounting performance of banks, while it has a non-linear, convex relationship with market performance. Surprisingly, liquidity risk management is not a significant driver for either performance measure in studied banks. However, when a bank combines credit risk management with liquidity risk management efforts, liquidity risk management actions return significant results on both performances, illustrated by an inverted U-shaped relationship. However, the study focused on performance between the period of 2010 to 2018.

Endaweke (2021) investigated the influence of risk management and its impact on the financial performance of commercial banks in Ethiopia. Balanced fixed effect panel regression was used for the data of eight commercial banks in the sample covered the period from 2002 to 2013. Four risk management variable that affects banks performance were selected and analyzed. The results of panel data regression analysis showed that credit risk management indicator (NPLR), Liquidity risk management indicator (LIQR) and operational risk indicator (CIR) had negative and statistically significant impact on banks performance. Capital adequacy ratio had positive statistically insignificant impact on banks performance. In addition to this the study is also analysis of primary data by descriptive statistical tools and on hypothesis testing using regression model. However, the study focused on performance of commercial banks in Ethiopia.

Ng'aari (2022) investigated the effect of risk management practices on the profitability of listed commercial banks in Kenya. Both descriptive and correlation design were used to achieve the study objective. Purposive sampling technique was used to select 8 listed

commercial banks in Nairobi Securities Exchange. Secondary panel data was collected from annual audited financial statements. Both descriptive and inferential statistics were used to analyze the data. Panel regression analysis was used to test the hypothesis of the study. Correlation analysis too showed a positive and moderate strength between the two variables. Further, analysis demonstrated that a unit change in liquidity risk management caused the commercial banks profit to increase by 0.24 units. However, the purposive sampling technique was used.

2.3.3 Loan Management and Bank Performance

Gatakaa (2017) investigated the relationship between loan policy and financial performance of commercial banks in Kenya. This study adopted a descriptive survey research design. The target population of this study was all the 43 commercial banks in Kenya (CBK, 2012). The sample size for the study was 13 commercial banks. Stratified random sampling technique and simple random sampling technique were used to obtain a sample size of 13 commercial banks. The secondary data was collected from the published annual reports spanning five years (2009-2013) for the sampled commercial banks. Regression analysis was used to test the relationship between loan policy and financial performance of commercial banks in Kenya. From the findings, the provision for bad and doubtful debts was positively related to the financial performance of the Kenyan commercial banks. Declining loan default rate significantly enhanced the financial performance of the Kenyan commercial banks. However, the study focused on annual reports spanning five years (2009-2013).

Munyiri (2020) investigated lending policies and their effects on performance of commercial banks in Kenya. The population of interest of this study was forty 44 commercial banks in Kenya. The study being a survey implied that data was collected from all the 44 commercial banks. The researcher used structured questionnaires as the main data collection instrument. The questionnaires had both open and close-ended questions. Descriptive statistics was used

to summarize the data. From the findings, the study concludes that lending policies formulated by the commercial banks are customer friendly, focused on customer capability, prevailing market condition that suit the customer needs and enables their clients to feel comfortable when borrowing from the banks. However, the study used cross-sectional research study.

Mwongera (2021) investigated the loan management and the survival of commercial banks in selected areas in Meru region in Eastern Kenya. The study utilized descriptive correlation survey design using questionnaire as the research instrument. A sample of 112 bank employees was used as the respondents for the study. Stratified random sampling method was used to identify the respondents. Using the Pearson's Linear Correlation Coefficient, the correlation between the two variables was determined. The study established that there is high level of loan management and high level of survival of commercial banks in selected districts in Meru Region. However, the study focused on commercial banks in selected areas in Meru region in Eastern Kenya.

2.3.4 Fraud Detection and Bank Performance

Manyo, Walter, Bassey and Chike (2023) examined the effect of fraud on commercial banks' performance in Nigeria. The study utilizes secondary sources of data extracted from the Nigerian Deposit Insurance Corporation (NDIC) Annual Report and CBN Statistical Bulletin from 1994 to 2020. Statistical methods such as descriptive analysis, Pearson correlation and OLS regression techniques were employed in the evaluation of the data. The result of the hypotheses revealed the number of fraud cases as well as the total amount lost to fraud had a positive and significant impact on bank performance while the total number of staff involved in fraud was found to be negative and significant on deposit money banks performance in Nigeria. However, the study used secondary data.

Andrew and Claud (2021) investigated the effect of financial fraud on commercial banks performance of Equity Bank Rwanda Plc. Descriptive and correlation research designs were utilized in the study. Population of 100 respondents from different Kigali branches was selected which majorly composed of the managers, tellers, credit and risk officers and finance officers. The study utilized primary data collected using questionnaires and secondary data sourced from Equity Bank Rwanda reports and National Bank of Rwanda. Data was analyzed using IBM SPSS version 21 and presentation done in figures and tables. From correlation findings, Pearson correlation coefficient of -0.690, -0.630 and -0.650 for fraudulent loans, fraudulent invoices and identity theft respectively was found. This implies that as financial fraud cases increases, commercial banks performance reduces. However, the study focused on commercial banks performance of Equity Bank Rwanda Plc.

Meiryani, Lusianah and Juli (2021) investigated the effect of fraud detection and prevention on financial performance study on Trading Company. This study used 33 samples as respondents. This research uses quantitative methods, where the data collected from the results of distributing questionnaires are processed, presented, and analyzed quantitatively (numbers) and descriptively (sentence descriptions). The results showed that the fraud detection variable had a significant effect on financial performance and the fraud prevention variable had a significant effect on financial performance. That is, good or bad financial performance of a company is influenced by cases of fraud that occur in the company. However, the study focused on financial performance study on trading company.

2.4 Summary of Literature Reviewed and Research Gaps

Table 2.1: Summary of Literature Reviewed and Research Gaps

Author	Focus of the Study	Findings	Research Gaps	Focus of the current study
Ali <i>et al.</i> (2018)	Influence of customer relationship management and organizational performance in Malaysian healthcare industry	Collaboration of top management, technology and organizational culture should lead the organization to improve their performance in healthcare industry	The study focused on healthcare sector Malaysia	The study will focus on performance of selected banks in Nakuru County-Kenya
Kenneth <i>et al.</i> (2020)	Influence of customers' relationship management on banks' performance in Nigeria.	Amongst the dimensions of CRM, customer identification and retention impacts more significantly on business performance	The study focused on banks' performance in Nigeria	The study will focus on performance of selected banks in Nakuru County-Kenya
Mungla (2018)	Effects of customer relationship management systems on financial performance of Commercial Banks in Kenya	Adoption of CRM systems by commercial banks in Kenya have improved their overall engagement with their customers	The study focused on financial performance between the years 2013 to 2017	The study will focus on performance of selected banks in Nakuru County-Kenya between 2019 to 2023
Harb <i>et al.</i> (2023)	Influence of risk management on bank performance : evidence from the MENA	Credit risk management does not affect the accounting performance of banks, while it has a non-linear,	The study focused on performance between the period of 2010 to 2018	The study will focus on performance of selected banks in Nakuru County-Kenya

	region	convex relationship with market performance.		between 2019 to 2023
Endaweke (2021)	Influence of risk management and its impact on the financial performance of commercial banks in Ethiopia	Capital adequacy ratio had a positive statistically insignificant impact on banks performance	The study focused on performance of commercial banks in Ethiopia	The study will focus on performance of selected banks in Nakuru County-Kenya
Ng'aari (2022)	Effect of risk management practices on the profitability of listed commercial banks in Kenya	Correlation analysis too showed a positive and moderate strength between the two variables	The purposive sampling technique was used	A stratified method will be used
Gatakaa (2017)	Relationship between loan policy and financial performance of commercial banks in Kenya.	The provision for bad and doubtful debts was positively related to the financial performance of the Kenyan commercial banks	The study focused on annual reports spanning five years (2009-2013)	The study will focus on performance of selected banks in Nakuru County-Kenya
Munyiri (2020)	Lending policies and their effects on performance of commercial banks in Kenya	The study concludes that lending policies formulated by the commercial banks are customer friendly, focused on customer capability, prevailing	The study used cross-sectional research study	The study will used descriptive research design

		market condition that suit the customer needs and enables their clients to feel comfortable when borrowing from the banks		
Mwongera (2021)	Loan management and the survival of commercial banks in selected areas in Meru region in Eastern Kenya	There is high level of loan management and high level of survival of commercial banks in selected districts in Meru Region.	The study focused on commercial banks in selected areas in Meru region in Eastern Kenya	The study will focus on performance of selected banks in Nakuru County-Kenya
Manyo <i>et al.</i> (2023)	Effect of fraud on commercial banks' performance in Nigeria	The total amount lost to fraud had a positive and significant impact on bank performance while the total number of staff involved in fraud was found to be negative and significant on deposit money banks performance in Nigeria	The study used secondary data	The study will use primary data
Andrew and Claud (2021)	Effect of financial fraud on commercial banks performance of Equity Bank Rwanda Plc.	Financial fraud cases increases, commercial banks performance reduces	The study focused on commercial banks performance of Equity Bank Rwanda Plc	The study will focus on performance of selected banks in Nakuru County-Kenya

Meiryani, Lusianah and Juli (2021)	Effect of fraud detection and prevention on financial performance study on Trading Company.	Fraud detection variable had a significant effect on financial performance and the fraud prevention variable had a significant effect on financial performance	The study focused on financial performance study on trading company	The study will focus on performance of selected banks in Nakuru County-Kenya
------------------------------------	---	--	---	--

Source: Researcher (2024)

2.5 Conceptual Framework

A conceptual framework is used to illustrate the variables to be studied and the relationships and impacts we expect to find between them.

Independent Variables

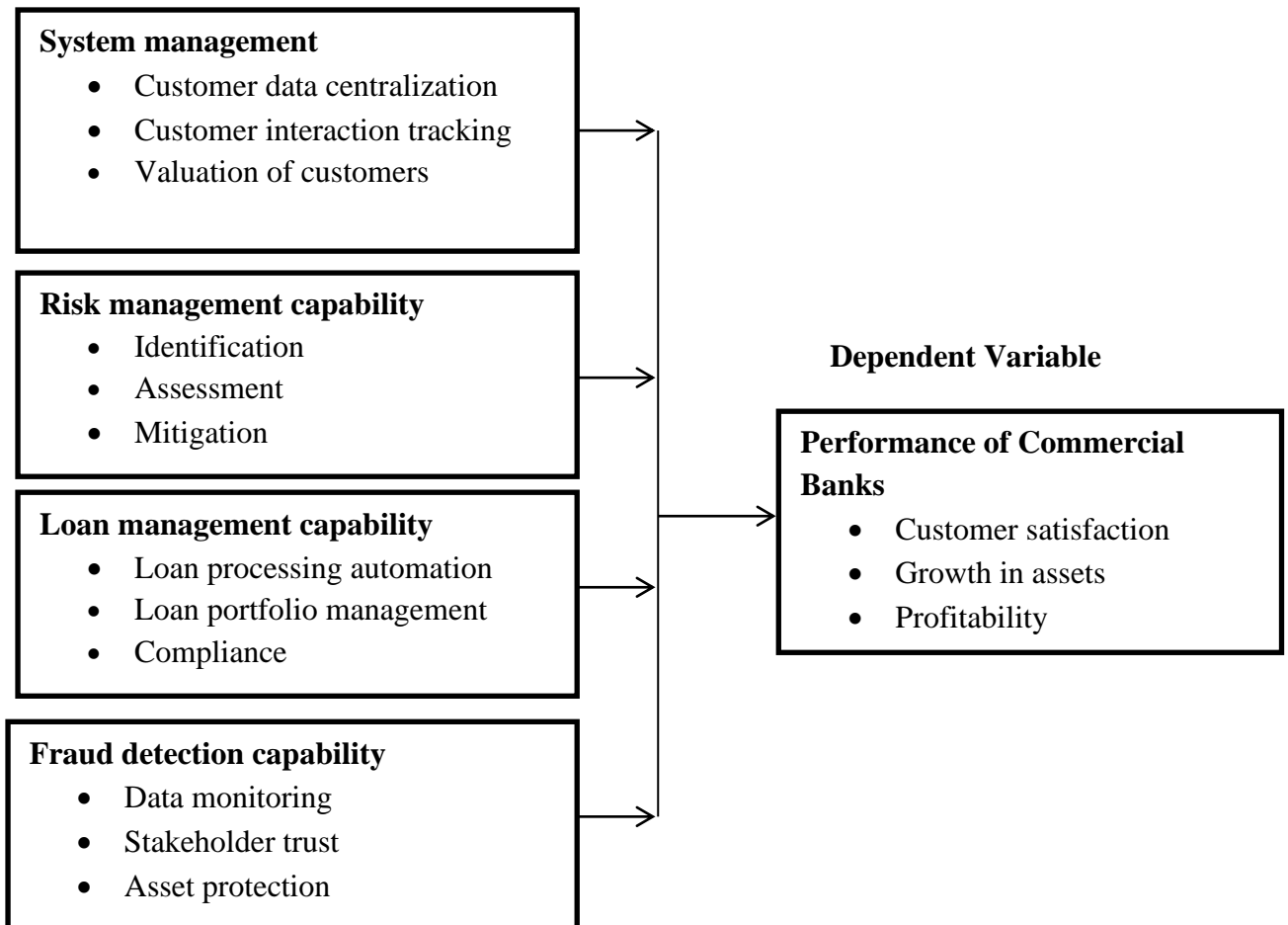


Figure 2.1: Conceptual Framework

Source: Researcher (2024)

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter comprises of research design, target population, sampling design and sample size, data collection instruments, pilot study, data collection procedure, data analysis and ethical considerations.

3.2 Research Design

This study will use descriptive research design. According to Williams (2017) descriptive research design is significant in the field of research methodology as it provides a foundation for further research, offers a comprehensive overview of a population or sample, generates and tests theories, and informs practical decision-making. By systematically describing and analyzing data, researchers can gain valuable insights and contribute to the advancement of knowledge in their respective fields. Therefore, this type of research design will be used as it focuses on describing the characteristics, behaviors, and patterns of a specific population or sample, without manipulating or controlling any variables.

3.3 Target Population

The study will target four commercial banks operating in Nakuru County namely; Kenya Commercial Bank, Equity Bank, Cooperative Bank and Family Bank. The respondents will be employees working with these banks who will be 317 in total. This is presented in Table 3.1.

Table 3.1: Target Population

Name of the Bank	Population
Kenya Commercial Bank	85
Equity Bank	95
Cooperative bank	71
Family Bank	66
Total	317

3.4 Sampling Design and Sample Size

Sampling design and sample size are important to establish the representativeness of the sample for generalization (Kombo & Tromp, 2006). Stratified sampling technique will be used to put the respondents into respective banks to ensure that all the respondents are adequately represented. Simple random sampling method will be used to select the respondents. To determine the sample size for employees to participate in the study, the following Taro Yamane (1967) formula will be used: $n=N/[1+N(e^2)]$

Where n = Sample size; N = Population under study and e = The margin error (in this study it will be 0.05)

$$n= 317/ [1+ 317(0.05^2)] =177$$

The sample size will be 177 respondents representing 55.8% of the total population (317). Therefore, the sample size will be drawn based on Mugenda & Mugenda (2013), that for a smaller population, a sample of 10% - 30% is considered to be adequate, as shown in Table 3.2.

Table 3.2: Sample Size

Name of the Bank	Population (N)	Sample Size (n)	Percentage (%)
Kenya Commercial Bank	85	47	(47/177) =27%
Equity Bank	95	53	(53/177) =30%
Cooperative Bank	71	40	(40/177) =23%
Family Bank	66	37	(37/177) =20%
Total	317	177	(177/177) =100%

3.5 Data Collection Instrument

The study will collect primary data using a semi-structured questionnaire with both closed and open-ended questions to improve the responses obtained from respondents by allowing them to express their opinions on various aspects of the study variables. The questionnaire will comprise of 5 sections namely; section A will collect data on respondents background

information, section B will collect data on customer relationship management capability, section C will collect data on risk management capability, section D will collect data on loan management capability, section E will collect data on fraud detection capability and Section F will collect data on organizational performance. The closed ended questions will be designed following a likert scale to allow the respondents to express their level of agreement on each statement describing a specific variable.

3.6 Pilot Test

Pilot testing is a small test involving a small number of respondents to assist the researcher in checking for the quality of the questionnaires and identify any weaknesses before going for the final data collection process (Orodho, 2005). Mugenda and Mugenda (2013) indicate that pilot study is made up of a one-tenth of the population that has uniform characteristics, Therefore, a total of 17 questionnaires will be piloted to respondents working in the National Bank of Kenya.

3.6.1 Validity of Research Instrument

Validity testing entails determining whether the data collection instrument will provide information relevant to the study's stated goal (Orodho, 2015). The researcher will undertake a content validity test to confirm that the questionnaires are written in easy-to-understand language and that the questions are clear. This will be accomplished by consulting the supervisor, who is a specialist in the field.

3.6.2 Reliability of Research Instrument

Orodho (2015) defines instrument reliability as the ability to measure an instrument and produce consistent results. It is the measure to which reliability as a measure of research instrument yields consistent results after repeated trials. A Cronbach alpha test will be used to determine the reliability. According to Mugenda and Mugenda (2013), if the correlation

between separate administrations of the test will be 0.7 or higher, then it will be presumed to have good test-retest reliability. The Spearman correlation coefficient is calculated from the scores on each half of the test which usually fall between 0.0 and 1.0, with the closer to 1.0, the more reliable the instrument is. This study will target a correlation coefficient of 0.8 as recommended by Mugenda and Mugenda (2003).

3.7 Data Collection Procedure

The management of banks will be visited to ask for permission to collect data from the employees. The researcher will then visit the sampled respondents through booking appointments with the heads of department to request for permission to collect data. The questionnaires will be left with the respondents within duration of two weeks to give the respondents ample time to go through all the questions. This will aid in enhancing the response rate and ensuring that the information gathered is accurate and reliable.

3.8 Data Analysis and Presentation

Data obtained from the questionnaires will be edited, cleaned after which data will be coded. Qualitative data will be analysed qualitatively by organizing data into themes based on study objectives and the results will be presented in narrative form. Quantitative data will be analyzed using descriptive statistics such a mean and standard deviation. The analysed data will be presented using tables and figures. This will be made possible by using Statistical Package for Social Sciences (SPSS) version 21.0. In addition, inferential statistics will be done using correlation analysis and multiple regression analysis. Statistical analysis will be guided by multiple regression model to test the relationship between variables and the extent to which they influence each other.

The regression equation will be: $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3+ \beta_4X_4 + \epsilon$

Whereby Y = Performance of Commercial Banks

X_1 = System management

X_2 = Risk management

X_3 = Loan management

X_4 = Fraud detection

β_0 = Coefficient of determination

$\beta_1 - \beta_4$ = Coefficients of variables

ε = Error term

3.9 Ethical Considerations

Compliance with ethical standards will be ensured by obtaining authorization from the Kenyatta University Graduate School to conduct the research. Prior to commencing data collection, a research permit will be obtained from the National Council for Science Technology and Innovation (NACOSTI). A letter of introduction will be drafted, clearly stating the research objectives and outlining the desired level of cooperation from the participants. Strict confidentiality measures will be implemented to safeguard the information obtained during the research process.

REFERENCES

- Aduda, J., & Kingoo, N. (2020). The relationship between electronic banking and financial performance among commercial banks in Kenya. *Journal of finance and investment analysis*, 1(3), 99-118
- Akhter, A. (2022). Impact of accounting information system on organizational performance: Private commercial banks of Bangladesh. *International Journal of Scientific and Research Publications*, 12(4), 307-314.
- Ali, H., Gueyie, J. P., & Okou, C. (2021). Assessing the impact of information and communication technologies on the performance of microfinance institutions in Niger. *Journal of Small Business & Entrepreneurship*, 33(1), 71-91
- Ali, N., Habidin, N. F., Jamaludin, N. H., Khaidir, N. A., & Shazali, N. A. (2018). Customer relationship management and organizational performance in Malaysian healthcare industry. *International Journal of Advancements in Research and Technology*, 2(1), 1-5.
- Andrew, B., & Claud, R. (2021). The effect of financial fraud on commercial banks performance case study of Equity Bank Rwanda Plc. *International Journal of Scientific and Research Publications*, 11(10), 5 – 13
- Ariff, M. S. B. M., Ahmad, A., & Ismail, K. (2017). A framework for risk management practices and organizational performance in higher education. *Review of Integrative Business and Economics Research*, 3(2), 422 – 430
- Berger, A. N., DeYoung, R., Genay, H., & Udell, G. F. (2020). Globalization of financial institutions: Evidence from cross-border banking performance. *Brookings-Wharton papers on financial services*, 2000(1), 23-120.
- Bromiley, P., & Rau, D. (2022). Some problems in using prospect theory to explain strategic management issues. *Academy of Management Perspectives*, 36(1), 125-141
- Endaweke, M. (2021). *Risk management and its impact on the financial performance of commercial banks in Ethiopia*. (Dissertation in Accounting and Finance, Addis Ababa University)
- Fugate, B. S., Stank, T. P., & Mentzer, J. T. (2023). Linking improved knowledge management to operational and organizational performance. *Journal of Operations Management*, 27(3), 247-264.
- Gatakaa, L. (2017). *The relationship between loan policy and financial performance of commercial banks in Kenya* (Doctoral dissertation, University of Nairobi)
- Gerrish, E. (2022). The impact of performance management on performance in public organizations: A meta-analysis. *Public Administration Review*, 76(1), 48-66.
- Gichungu, Z. N., & Oloko, M. A. (2023). Relationship between bank innovations and financial performance of commercial banks in Kenya. *International Journal of Education and Research*, 3(5), 443-456

- Gonfa, S. G. (2020). MIS Influencing Managers in Decision-Making: The Case of Commercial Banks in Ethiopia. *ITIHAS-The Journal of Indian Management*, 5(4), 8 – 14
- Grigorian, D. A., & Manole, V. (2018). Determinants of commercial bank performance in transition: An application of data envelopment analysis. *Comparative Economic Studies*, 48, 497-522.
- Gupta, A. D., Yesmin, A., & Khan, O. F. (2023). Growth of non-bank financial institutions over time and contribution to economy: Evidence from Bangladesh. *Global Journal of Management and Business Research Finance*, 13(6), 16-24.
- Haislip, J. Z., & Richardson, V. J. (2017). The effect of Customer Relationship Management systems on firm performance. *International Journal of Accounting Information Systems*, 27, 16-29.
- Harb, E., El Khoury, R., Mansour, N., & Daou, R. (2023). Risk management and bank performance: evidence from the MENA region. *Journal of Financial Reporting and Accounting*, 21(5), 974-998.
- Henri, J. F. (2018). Performance measurement and organizational effectiveness: Bridging the gap. *Managerial finance*, 30(6), 93-123
- Holmes, R. M., Holcomb, T. R., & McGuire, J. B. (2017). Management theory applications of prospect theory: Accomplishments, challenges, and opportunities. *Journal of Management*, 37(4), 1069-1107.
- Ibrahim, F. S., & Esa, M. (2022). A study on enterprise risk management and organizational performance: Developer's perspective. *International Journal of Civil Engineering and Technology*, 8(10), 184-196.
- Ifeoma, T. E. (2022). The effect of management information system on the performance of deposit money banks in Nigeria. *International Journal of Management, Social Sciences, Peace and Conflict Studies*, 5(2), 625 – 635
- Joseph, O. N., Albert, O., & Byaruhanga, J. (2023). Effect of internal control on fraud detection and prevention in district treasuries of Kakamega County. *International Journal of Business and management invention*, 4(1), 47-57
- Kagias, P., Cheliatsidou, A., Garefalakis, A., Azibi, J., & Sariannidis, N. (2022). The fraud triangle—an alternative approach. *Journal of Financial Crime*, 29(3), 908-924
- Kenneth, C. A., Justin, M. O. G., & Adiele, C. K. (2020). Customers' relationship management and banks' performance in Nigeria. *International journal of science and research*. 2(1), 416 – 422
- Kombo, D. K. and Tromp, D. L. A. (2006). *Proposal and Thesis writing: An introduction*. Nairobi: Pauline's Publications Africa
- Labus, M. (2007). *Discovery of the CRM behaviour theory: managing corporate customer relationships in the changing telecoms industry* (Doctoral dissertation, University of the West of England, Bristol,).

- Lam, H. K., Yeung, A. C., & Cheng, T. E. (2022). The impact of firms' social media initiatives on operational efficiency and innovativeness. *Journal of Operations Management*, 47, 28-43
- Levy, J. S. (2017). Prospect theory, rational choice, and international relations. *International studies quarterly*, 41(1), 87-112
- Mang'ana, R. (2022). Strategic adoption of technological innovations on competitive advantage of commercial banks in Kenya. *Journal of Business and Strategic Management*, 7(2), 16-36.
- Manyo, T. S., Walter, M. H., Basse, O. E., & Chike, E. C. (2023). Effect of Fraud on Commercial Banks' Performance in Nigeria. *Frontiers in Management Science*, 2(2), 69-78.
- Mbam, B. C. E., & Igboji, K. O. (2021). Enhancing Cooperative Loan Scheme Through Automated Loan Management System. *West African Journal of Industrial and Academic Research*, 6(1), 144-153.
- Mbekomize, C. J., & Mapharing, M. (2022). Analysis of determinants of profitability of commercial banks in Botswana. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 7(2), 131-144.
- Meiryani, M., Lusianah, L., & Juli, S. N. (2021). The effect of fraud detection and prevention on financial performance study on trading company. In *Proceedings of the 7th International Conference on Industrial and Business Engineering* (pp. 219-227)
- Mithas, S., Ramasubbu, N., & Sambamurthy, V. (2022). How information management capability influences firm performance. *MIS quarterly*, 7(1), 237-256
- Mugenda, O. & Mugenda, A. (2003). *Research Methods: Qualitative and Quantitative Approaches*. Nairobi: Acts Press
- Mungla, C. (2018). *Effects of Customer Relationship Management systems on financial performance of Commercial Banks in Kenya* (Doctoral dissertation, Strathmore University)
- Munyiri, M. (2020). *Lending policies and their effects on performance of commercial banks in Kenya* (Doctoral dissertation, University of University)
- Muro, M. B., Magutu, P. O., & Getembe, K. N. (2023). The strategic benefits and challenges in the use of customer relationship management systems among commercial banks in Kenya. *European Scientific Journal*, 9(13), 6 – 14
- Mwongera, M. (2021). *Loan management and the survival of commercial banks in selected Districts in Meru region in Eastern Kenya* (Doctoral dissertation, Kampala International University, College of Economics and Management)
- Ng'aari, E. W. (2022). *Effect of risk management practices on the profitability of listed commercial banks in Kenya* (Doctoral dissertation).
- Ngugi, J. W., & Koori, J. (2023). Mobile based loan management practices and financial performance of commercial banks in Kenya. *The International Journal of Business & Management*, 7(2), 9 – 13

- Njenga, L. M. (2019). *Technological Innovation And Performance Of Commercial Banks In Kenya* (Doctoral dissertation, University of Nairobi)
- Nyanzu, F., Peprah, J. A., & Ayayi, A. G. (2019). Regulation, outreach, and sustainability of microfinance institutions in Sub-Saharan Africa: A multilevel analysis. *Journal of Small Business Management*, 57, 200-217.
- Odindo, T. A. (2022). *Management information system agility and performance of commercial banks in Nairobi City County, Kenya* (Doctoral dissertation, Kenyatta University)
- Orodho, A. J. (2005). *Essentials of Educational and Social Science Research methods: Qualitative and Quantitative Approaches*. Nairobi: Acts Press
- Otieno, B. J. (2021). *Challenges in the implementation of mobile banking information systems in commercial* (Doctoral dissertation, University of Nairobi).
- Peppard, J., & Ward, J. (2021). Beyond strategic information systems: towards an IS capability. *The Journal of Strategic Information Systems*, 13(2), 167-194.
- Rababah, K., Mohd, H., & Ibrahim, H. (2021). Customer relationship management (CRM) processes from theory to practice: The pre-implementation plan of CRM system. *International Journal of e-Education, e-Business, e-Management and e-Learning*, 1(1), 22-27.
- Soltani, Z., Zareie, B., Milani, F. S., & Navimipour, N. J. (2022). The impact of the customer relationship management on the organization performance. *The Journal of High Technology Management Research*, 29(2), 237-246
- Taherdoost, H. (2021). A review on risk management in information systems: Risk policy, control and fraud detection. *Electronics*, 10(24), 3065 - 3072
- Vannirajan, T., & Manimaran, S. (2019). Management information systems for service quality in commercial banks: An empirical study. *Asia Pacific Business Review*, 5(2), 61-74.
- Waal, A. A. (2017). The characteristics of a high performance organization. *Business strategy series*, 8(3), 179-185
- Wandili, M. (2022). *The Influence of Management Information System capabilities on the supply chain performance of listed manufacturing firms in Kenya* (Doctoral dissertation, Strathmore University).
- Weersainghe, V. E. I. W., & Perera, T. R. (2018). Determinants of profitability of commercial banks in Sri Lanka. *International Journal of Arts and commerce*, 2(10), 141 – 170
- Wetsch, L. R. (2019). Trust, satisfaction and loyalty in customer relationship management: an application of justice theory. *Journal of relationship marketing*, 4(3-4), 29-42
- Williams, C. (2017). Research methods. *Journal of Business & Economics Research (JBER)*, 5(3), 6 – 11
- Wozniewska, G. (2022). Methods of measuring the efficiency of commercial banks: an example of Polish banks. *Ekonomika*, 8(4), 81 - 91.

APPENDICES

Appendix I: Cover Letter

Cell No.: 0725000357

Email : akawan89@gmail.com

Dear respondent,

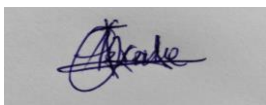
Re: Request for Participation in Research Study

I am a postgraduate student at Kenyatta University undertaking a study entitled: **Management Information System capabilities and performance of selected commercial banks in Nakuru County namely Kenya Commercial Bank, Equity Bank, Co-operative Bank and Family Bank**” as a requirement for the Degree of Master’s in Business Administration (Management Information System).

I chose you as my study respondent because you are better suited to provide the information needed for this study. You are kindly asked to rate yourself based on the question items provided. Please take a few moments to complete the questionnaire items. I assure you that your responses will be kept completely confidential and used solely for academic purposes. Your assistance in facilitating this study will be greatly appreciated.

Any help would be greatly appreciated.

Thank you very much.



Terence Akatu Machengo.

Appendix II: Questionnaire

Please tick on the box corresponding to your response.

Section A: Background Information

1. Indicate your Gender: Male Female
2. Age:
Less than 25 years 25 – 34 Years
35 – 44 Years 45 years and above
3. Indicate your highest level of education
 Diploma Post Graduate Diploma
 Bachelor's Degree Master's Degree
4. Indicate your work experience:
 Less than 5 years 5-9 years
 10- 15 years Above 15 Years

Section B: System Management

The following table contains statements regarding the influence of customer relationship management capability on the performance of selected banks in Nakuru County-Kenya. Kindly indicate the extent to which you agree with the statements by using the Likert scale provided.

Strongly agree =5, Agree =4, Undecided =3, Disagree =2, and Strongly Disagree =1

Statement	1	2	3	4	5
The banks can easily access and analyze data to better understand customer needs and preferences					
The banks are able to carry out a more personalized marketing and sales efforts, leading to higher conversion rates and customer satisfaction					
The banks are able to provide a consistent and seamless customer experience, regardless of the channel used					
The banks are able to tailor their communication strategies to					

better meet customer needs and expectations					
The banks are able to identify their most profitable customers and tailor their marketing and sales efforts to focus on retaining and growing these relationships					
CRM capability enables banks to increase their customer lifetime value and overall profitability for the organization					

4. Kindly indicate any other influence of customer relationship management capability on the performance of selected banks in Nakuru County-Kenya?

.....

Section C: Risk Management

The following table contains statements regarding the influence of risk management capability on the performance of selected banks in Nakuru County-Kenya. Kindly indicate the extent to which you agree with the statements by using the Likert scale provided.

Strongly agree =5, Agree =4, Undecided =3, Disagree =2, and Strongly Disagree =1

Statement	1	2	3	4	5
The bank is able to identify potential risks and vulnerabilities in their operations, supply chains, and market conditions by collecting and analyzing relevant data					
The bank is able to develop strategies and contingency plans to mitigate these risks before they materialize, reducing the likelihood of negative impacts on performance					
The bank managers are able to assess the potential impact of risks on various aspects of the organization, such as financial performance, reputation, and compliance					
The bank is able to prioritize resources and make strategic decisions that align with the organization's risk appetite and objectives					
Risk management capability enables timely identification and response to risks by automating risk assessment processes and integrating them into the organization's workflows					
Risk management capability reduces the time and effort required to manage risks manually, allowing employees to focus on core activities and improving overall productivity					

5. Kindly indicate any other influence of risk management capability on the performance of selected banks in Nakuru County-Kenya?

.....

Section D: Loan Management

The following table contains statements regarding the influence of loan management capability on the performance of selected banks in Nakuru County-Kenya. Kindly indicate the extent to which you agree with the statements by using the Likert scale provided.

Strongly agree =5, Agree =4, Undecided =3, Disagree =2, and Strongly Disagree =1

Statement	1	2	3	4	5
The banks are able to reduce manual errors, minimize processing time, and enhance customer experience					
Loan processing automation enables banks to capture and analyze relevant data points					
The banks are able to gain a holistic view of their loan portfolio which facilitates assessment of the performance of individual loans, identify potential risks, and make informed decisions regarding loan restructuring, refinancing, or collection strategies					
The banks can use this data to evaluate the profitability and sustainability of their lending activities and adjust their strategies accordingly					
The banks ensure adherence to legal and industry standards by integrating loan management processes with regulatory requirements and risk assessment frameworks.					
The proactive approach to compliance and risk management helps banks mitigate potential risks, avoid penalties, and maintain a strong reputation in the market					

6. Kindly indicate any other influence of loan management capability on the performance of selected banks in Nakuru County-Kenya?

.....

Section E: Fraud Detection

The following table contains statements regarding the influence of fraud detection capability on the performance of selected banks in Nakuru County-Kenya. Kindly indicate the extent to which you agree with the statements by using the Likert scale provided.

Strongly agree =5, Agree =4, Undecided =3, Disagree =2, and Strongly Disagree =1

Statement	1	2	3	4	5
The banks are able to identify and prevent fraudulent activities that can negatively impact the bank’s financial health and reputation					
The banks are able to effectively mitigate risks and safeguard their assets, thereby improving overall operational efficiency and profitability					
Monitoring and analyzing risk enables the banks to enhance their ability to respond swiftly to potential threats, minimizing the impact of fraud on the business.					
Monitoring and analyzing data in real-time allows the bank to quickly identify suspicious patterns or anomalies that may indicate fraudulent behavior					
Implementing robust fraud detection systems helps institutions meet these obligations, ensuring they are in line with industry standards and regulatory guidelines					
Regulatory compliance help banks to avoid penalties, legal issues, and reputational damage associated with non-compliance					

7. Kindly indicate any other influence of fraud detection capability on the performance of selected banks in Nakuru County-Kenya?

.....

Section F: Organizational Performance

The following table contains statements regarding the performance of selected banks in Nakuru County-Kenya. Kindly indicate the extent to which you agree with the statements by using the Likert scale provided.

Strongly agree =5, Agree =4, Undecided =3, Disagree =2, and Strongly Disagree =1

Statement	1	2	3	4	5
The bank's operational efficiency has improved					
The bank's effectiveness has improved					

Kindly indicate the profitability of your bank in terms of ROA for the last 5 years (2019 to 2023).

Year	2020	2021	2022	2023	2024
ROA					

Appendix III: Work Plan

Activity	January - May, 2024	June - July, 2024	August, 2024	September - December 2024
Proposal				
Pilot Study				
Collection of data				
Analysis				
Report writing				
Submission of the project				

Appendix IV: Research Budget

ACTIVITY	COST (KSHs)
Printing of research instruments	14,000
Pilot study	21,000
Transport	82,000
Communication	13,000
Internet expenses	17,000
Miscellaneous	11,000
TOTAL	158,000