SENIOR MANAGEMENT PERCEPTION OF ARTIFICIAL INTELIGENCE ADOPTION IN INVESTMENT DECISION MAKING BY COMMERCIAL BANKS IN NAIROBI COUNTY, KENYA

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DECLARATION AND APPROVAL

Declaration by candidate

This research project is my original work and has not been presented in any other University or for any other award

Sign…… Date: 25th June ,2025

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Approval by the Supervisor

I confirm that the work reported in this research project has been carried out by the candidate under my supervision.

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DEDICATION

I dedicate this research project to my wife Easter and son Presley. Your encouragement and support have been crucial in my journey to complete this work.

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I am deeply thankful to God for the grace and strength to complete this research project. I want to express my heartfelt appreciation to Mount Kenya University for giving me the chance to conduct this study. A special thanks goes to my supervisor, Dr. Ruth Winnie Munene, whose support, advice, and guidance have been essential throughout this Research Project. I also want to acknowledge all the lecturers who played a role in my success along the way. Finally, I want to express my appreciation to my employer, Equity Bank Limited, and its management team for their incredible support and flexibility over the past two years. I am truly grateful.

ABSTRACT

This study aimed to assess senior management perceptions of artificial intelligence (AI) adoption in investment decision-making among commercial banks in Nairobi County, Kenya. Guided by the Technology Acceptance Model (TAM), the research sought to understand factors influencing AI integration, including perceived usefulness and ease of use. The primary objective was to identify the benefits, challenges, and readiness levels of banks' senior management towards adopting AI technologies in their investment processes.

The study adopted a mixed-methods research design, combining quantitative surveys and qualitative in-depth interviews. The target population comprised senior managers involved in strategic decision-making within commercial banks in Nairobi. A sample size of 30 senior managers was selected through stratified random sampling to ensure representation across various bank sizes and types. Data collection instruments included structured questionnaires for the quantitative phase and semi-structured interview guides for qualitative insights. The questionnaires measured perceptions of AI's usefulness, ease of use, perceived risks, and organizational readiness, while interviews explored deeper attitudes, concerns, and suggestions for AI integration.

Data analysis involved descriptive statistics and inferential tests such as correlation analysis to examine relationships between variables in the quantitative phase. Qualitative data were analyzed thematically to identify common perceptions, barriers, and facilitators related to AI adoption. The findings were presented using tables, charts, and narrative descriptions to elucidate senior management's perceptions comprehensively.
Prior to the main data collection, a pilot study was conducted with 15 senior managers from a different but comparable banking institution to test the clarity, relevance, and reliability of the instruments. The pilot helped refine questions and ensured the validity of the data collection process.

The results indicated a generally positive perception of AI's potential to improve investment decision-making, emphasizing benefits such as increased accuracy, efficiency, and real-time data processing. However, significant barriers included high implementation costs, resistance to change, lack of technical expertise, data security concerns, and regulatory uncertainties. The study concluded that despite cautious optimism, banks need targeted strategies to overcome these challenges to fully leverage AI's transformative potential.

This research contributes to understanding the perceptions influencing AI adoption in Nairobi's banking sector and offers practical recommendations for policymakers and industry leaders to facilitate smoother integration.

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LIST OF ABBREVIATIONS AND ACRONYMS

AI - Artificial Intelligence

AIaB - AI in Banking

AML - Anti-Money Laundering

API - Application Programming Interface

BI - Business Intelligence

CEO - Chief Executive Officer

CDD - Customer Due Diligence

CFO -Chief Financial Officer

CRM - Customer Relationship Management

CTO - Chief Technology Officer

FIS - Financial Information Systems

GDPR - General Data Protection Regulation

HFT - High-Frequency Trading

ICT - Information and Communication Technology

IT - Information Technology

KYC - Know Your Customer

ML - Machine Learning

NLP - Natural Language Processing

PCI - Payment Card Industry

RegTech - Regulatory Technology

ROI - Return on Investment

RPA - Robotic Process Automation

TAM - Technology Acceptance Mode

CHAPTER ONE

INTRODUCTION

1.0 Introduction

1.1 Background of the Study

In the contemporary financial landscape, the intersection of artificial intelligence (AI) and investment decision-making has emerged as a transformative force, shaping how organizations evaluate opportunities and manage risks. Globally, the adoption of AI technologies in finance has surged, driven by advancements in machine learning, big data analytics, and computational power. Financial institutions are increasingly leveraging AI to enhance predictive accuracy, streamline operations, and provide personalized services. AI tools like ML, predictive analysis, and NLP have been a game changer for financial operations. As a sign of this increasing trend, a report by Markets and Markets indicates that AI in the banking market is expected to grow from USD 3.89 billion in 2020 to USD 27.67 billion by 2025, at a Compound Annual Growth Rate (CAGR) of 47.9% (Markets and Markets, 2021). This has not only made financial information processing more efficient but also improved financial risk analysis and optimization of investment strategies, and ultimately enhanced profitability, regulatory compliance and competitive standing in the marketplace (Königstorfer & Thalmann, 2020). According to a report by Deloitte, organizations utilizing AI in investment processes experience improved operational efficiency, enabling them to make more informed decisions rapidly. Institutions like BlackRock and Goldman Sachs have invested heavily in AI-driven tools to manage billion-dollar portfolios, demonstrating a significant shift towards data-driven decision-making in global financial markets.

Regionally, the African banking sector is undergoing a digital transformation, offering a fertile ground for the application of AI in investment decision-making. Countries such as Kenya are at the forefront of this evolution, with a rising number of fintech startups and

established banks integrating AI technologies to optimize their investment strategies. The Kenyan banking sector has witnessed a 30% increase in AI adoption over the past two years, driven by the need to enhance customer experience, reduce operational costs, and gain a competitive edge. Regional initiatives like the African Development Bank's push for digital finance highlight the importance of innovation in driving economic growth and stability. Furthermore, the rise of mobile banking services and digital wallets has paved the way for more sophisticated data analytics capabilities within the region's financial institutions, facilitating better investment decisions.

Nationally, Kenya stands as a beacon of innovation within the African context, with its commercial banks increasingly recognizing the importance of AI in shaping their investment strategies. The Central Bank of Kenya has encouraged the adoption of technology in financial services, creating a supportive regulatory environment for AI-driven solutions. Senior management within commercial banks plays a crucial role in shaping the perception and subsequent implementation of AI technologies. Their understanding and acceptance of AI influence how effectively these tools can be integrated into investment decision-making processes. Recent studies have indicated that senior management's perceptions of AI's effectiveness directly correlate with their willingness to invest in such technologies. Furthermore, with Kenya's ambitious Vision 2030 goal aiming to transform the country into a middle-income economy, the successful integration of AI in banking is seen as a vital component in achieving sustainable economic growth.

This research project aimed to explore the perceptions of senior management within commercial banks in Kenya regarding the role of AI in investment decision-making. By

investigating their views and experiences, the study sought to uncover the factors influencing their adoption of AI technologies.

Additionally, it will shed light on the knowledge gaps and challenges faced by senior executives as they navigate the complexities of integrating AI into traditional investment practices. Understanding these dynamics is crucial not only for the evolution of the banking sector but also for shaping policies that encourage effective AI utilization in enhancing the financial services landscape in Kenya. As the financial industry continues to evolve, this study will contribute to existing literature and provide valuable insights for stakeholders, policymakers, and academics invested in the intersection of AI and investment practices.

Historically, investment decisions were based primarily on human experience and judgment around past financial data. On the other hand, these conventional methods have serious deficiencies like taking slow decisions, cognitive biases, inability to process a vast volume of data efficiently (Idris, 2023). Meanwhile, such applications can help maximize returns; cognitive biases are proven to skew investment decisions and cost significant money; a recent study showed that up to 65% of investment professionals admitted that cognitive biases played a role in their choices. AI technologies, on the other hand, allow for real-time information processing, repetitive assessments, and predictive analytics, thereby enhancing the accuracy and efficacy of decision-making. There are obvious benefits to employing AI for investment decision-making processes, yet the commercial banking industry in Kenya has been slow to adopt it. According to Stewart & Jürjens (2017), high implementation costs, a big lack of technical skills among employees, resistance to change and uncertainty about compliance all prevent a wider compromise. As an illustration, a recent study finds that almost half of banking executives in Kenya consider high implementation costs to be a significant challenge to

the adoption of AI technologies for investment decisions. Moreover, there are concerns about accountability and transparency as financial institutions increasingly rely on AI systems to make manmade decisions.

The objective of this study, therefore, was to explore these dynamics too by analyzing perceptions of AI in investment decision-making by senior management in commercial banks Nairobi, Kenya. Using a pragmatic approach, this research sought to examine the opportunities, constraints and applications of AI in banking. The insights generated from this research were beneficial for financial institutions, regulators, and AI developers, and helped guide strategies for AI implementation as well as assisted in tackling primary impediments to its adoption. The state of AI in banking around the world was a fast-evolving one. As per Statista, the AI in banking market was valued at more than USD 21 billion in 2020, and was expected to have had an approximate value of USD 164 billion by 2029. This translated into a phenomenal 25.6% CAGR (compound annual growth rate).

To emphasize the use cases of AI in the financial sector, Table 1 provided a summary of the different applications, along with their market shares: The banking industry was currently undergoing a major change due to the very fast development and use of Artificial Intelligence (AI) in investment decision making processes in commercial banks).

Classical investment decisions were usually made based on the past financial data and the expert's experience. But, these classic approaches had various limitations, which included; slow decision making, biasness in decision making and limited capacity to analyze a large data set (Idris, 2023). For instance, research had established that cognitive biases could affect investment decisions and result in huge losses; a recent poll

indicated that 65% of investment professionals agreed that cognitive biases affected their decision-making process. On the other hand, AI technologies provided real-time data analysis, repeated evaluations, and predictive modeling to enhance decision-making. However, the use of AI in investment decisions was still limited in Kenya's commercial banking sector. The lack of integration was mainly due to high costs of implementation, low level of technical capacity of employees, resistance to change and ambiguity regarding regulatory requirements (Stewart & Jürjens, 2017).

For instance, in a recent study, 50% of the banking executives in Kenya saw high implementation costs as a major challenge in the adoption of AI technologies in investment decisions. However, concerns to accountability and transparency were raised as more and more financial institutions were using AI systems to make vital decisions. In order to understand these dynamics, the purpose of this study was to examine the perceptions of senior management on the application of AI in investment decision making in commercial banks in Kenya.

The study employed a mixed methods approach to explore the possibilities of AI, the challenges of AI and the possibilities of applying AI in the banking sector. The findings of the study were useful to the financial institutions, the regulators and the AI developers to develop better strategies for integration of AI and to tackle the critical implementation issues. The current trends of AI in banking were changing globally. As per Statista, the market for AI in banking was worth more than US$ 21 billion in 2020 and was estimated to have reached around US$ 164 billion by 2029. This was an astonishing CAGR of 25.6%. To describe the distribution of the AI applications in the financial sector, Table 1 presented various applications and their market shares:

Table 1: Distribution of AI Applications in the Banking Sector (2022)

Application	Market Share %
Fraud Detection	35
Risk Management	25
Customer service Automation	20
Investment Decision-Making	15
Compliance and Regulatory	5

Source, CBK website2024)

As it pertains to Kenya, a recent survey indicated that only 20% of commercial banks have incorporated AI into their investment decision-making processes, demonstrating a significant gap in adoption compared to global trends. The perceptions of senior management regarding AI's impact on investment decision-making are integral for successful integration within the banking sector. A pie chart (Figure 1) illustrating the responses of senior banking executives' reveals varying attitudes toward AI.

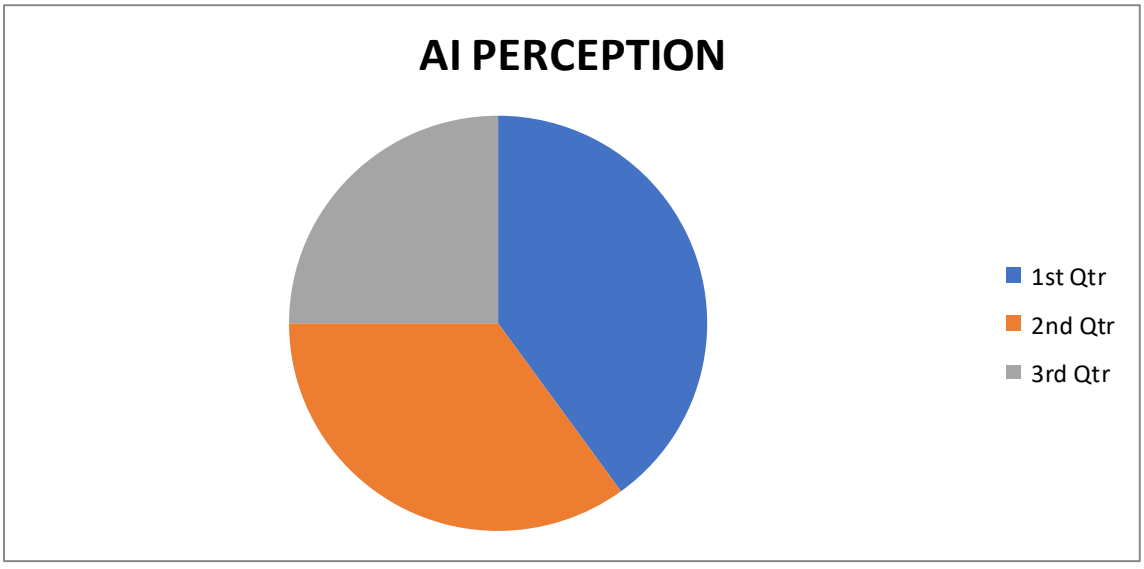

Figure 1:Perceptions of AI Integration

Source: (Idris, 2023)

1st Qtr.-Positive Perception: 40%

2nd Qtr.-Neutral Perception: 35%

3rd Qtr.-Negative Perception: 25%

The results show that while 40% of senior management expresses a positive view on the potential of AI to enhance investment decision-making, 25% maintain a negative perception, primarily influenced by concerns regarding implementation costs and data privacy issues. Furthermore, the challenges of adopting AI in investment decision-making are also highlighted in Figure 2, which shows the percentage of banking executives citing various barriers to AI adoption.

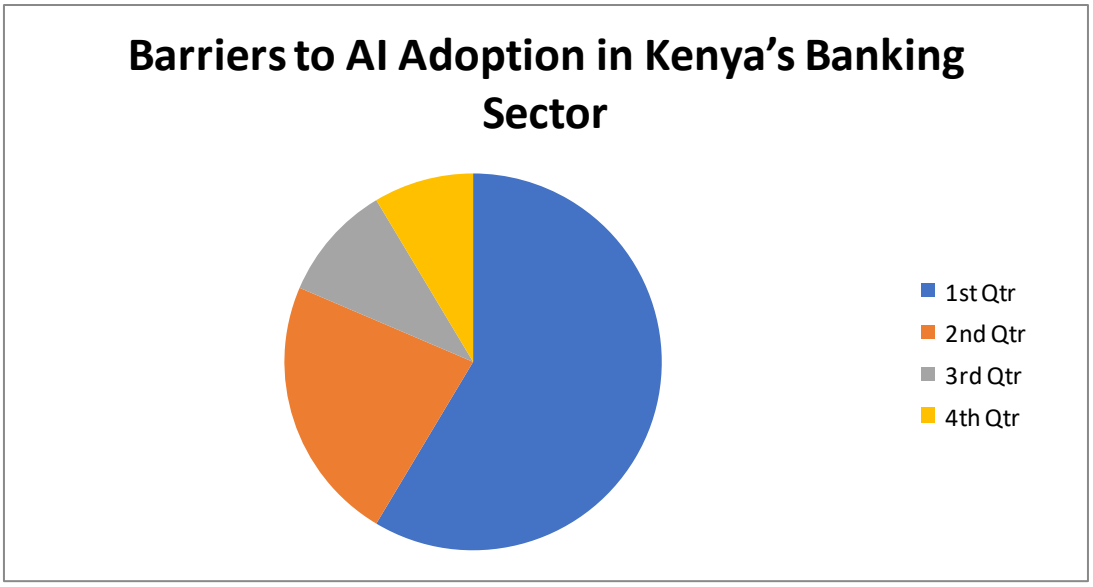

Figure 2:Barriers to AI Adoption in Kenya's Banking Sector

Source: (*CBK website2023)*

1st Qtr.-High cost

2nd Qtr.-Lack of skilled personnel

3rd Qtr.-Uncertainty in regulations

4th Qtr.- Accountability

This data underscored the critical hurdles that needed to be navigated for effective AI integration. The general objective of this study was to identify the perception of senior management in commercial banks on the role of AI in investment decision making. As a mixed methods study, it sought to determine the positives and the negatives of AI and where it could be best applied in the banking sector in Kenya.

The findings were important for financial institutions and regulators and AI developers to know where they were and where they were likely to encounter difficulties in the integration of AI. The application of Artificial Intelligence in investment decisions in the commercial banks in Kenya was very promising but its implementation was difficult due to challenges such as high costs, lack of skilled labor and uncertainties in regulation and accountability.

These findings from senior management perceptions further suggested that there was a need for focused efforts to tackle such barriers. In view of the fact that AI technology was developing every day, it was important for the Kenyan banks to seize this tool as a strategic tool that could greatly improve decision making and therefore enhance competition and profitability. This study was designed to offer meaningful insights into these questions as well as a better appreciation of how AI impacted investment decision making in the context of changing commercial banking environment.

1.2 Statement of the Problem

Commercial banks are fundamental to Kenya's financial system, playing a pivotal role in mobilizing savings, allocating credit, and supporting economic growth. Investment decision-making remains central to their operations, directly influencing profitability, risk management, and financial stability. Traditionally, these decisions have relied heavily on human judgment, historical data, and experience. However, with the rapid evolution of financial markets characterized by increasing complexity, volatility, and the proliferation of data, traditional decision-making models are increasingly inadequate. Reports from the Central Bank of Kenya (CBK, 2022) indicate that despite the significant potential of advanced analytical tools, many banks still depend on manual processes, which are susceptible to biases, slow data processing, and information overload.

Recent global studies underscore the transformative potential of Artificial Intelligence (AI) in finance. For instance, a report by PwC (2023) estimates that AI could add up to $1.2 trillion in value to the banking industry annually by 2030, primarily through improved investment decision-making, fraud detection, and customer service. Empirical research shows that AI-driven systems, such as machine learning algorithms and predictive analytics, enhance the accuracy and efficiency of investment processes by processing vast quantities of structured and unstructured data in real time. These systems can identify market trends, assess risks, and generate predictive insights that surpass human capabilities. For example, a study by Huang and You (2023) highlights how AI models in international financial markets have consistently outperformed traditional models in predicting asset prices and market movements.

Despite these promising prospects, Kenya's commercial banks have lagged behind their global counterparts in adopting AI for investment decision-making. According to a

survey conducted by the Kenya Bankers Association (KBA, 2022), less than 20% of commercial banks in Kenya have integrated AI into their core investment processes. This slow adoption is attributable to multiple barriers, including high costs of implementation, scarcity of technical expertise, and regulatory uncertainties. The World Bank's 2022 report on Kenya's financial sector emphasizes that the high capital costs associated with AI infrastructure covering software, hardware, and workforce training are significant deterrents, particularly for smaller banks with limited budgets. The report also notes that Kenya faces a severe shortage of AI professionals and data scientists; the country has fewer than 500 qualified data specialists, most of whom are concentrated in the technology hubs of Nairobi and Mombasa (Kenyan ICT Authority, 2023).

Furthermore, the regulatory environment in Kenya remains underdeveloped concerning AI use in finance. The CBK's recent policy review (2023) acknowledges the absence of comprehensive legal frameworks specifically addressing AI ethics, data privacy, and algorithmic transparency. This regulatory ambiguity creates legal risks and hinders banks from fully leveraging AI-driven investment tools, fearing potential violations of data protection laws or exposure to litigation. For example, the Data Protection Act (2019) provides some safeguards, but lacks explicit guidelines on AI-specific issues such as algorithmic bias and explainability, raising concerns among senior managers about compliance and reputational risks.

Resistance to change within organizational cultures further impedes AI adoption. Many senior executives and investment analysts are accustomed to traditional decision-making processes and view AI as a threat to job security or as an unreliable "black box." A survey by Deloitte (2022) found that over 60% of financial decision-makers globally expressed skepticism about fully trusting AI systems without human oversight. In Kenya, this skepticism is compounded by limited awareness of AI's capabilities, fears of over-

reliance on technology, and concerns over ethical issues like bias and fairness in automated decisions.

Cybersecurity and data privacy concerns are additional hurdles. The 2022 KPMG (Kenya) report highlights that cyberattacks targeting financial institutions increased by 35% in 2022, raising fears that AI systems, which rely heavily on sensitive data, could become targets for hacking, data breaches, or manipulation. Ethical considerations, including potential biases in AI algorithms that could lead to discriminatory lending or investment practices, further exacerbate these concerns. The lack of robust governance frameworks and ethical guidelines for AI use in Kenya's financial sector compounds these issues.

Given these challenges, there is a pressing need to understand senior management's perceptions of AI adoption in investment decision-making. Their attitudes, concerns, and readiness levels directly influence the pace and success of AI integration. However, limited research exists on Kenyan banks' strategic approach to AI, especially from the perspective of decision-makers. Most existing studies focus on technological capabilities without adequately exploring organizational, regulatory, and ethical barriers.

Therefore, this study aims to fill this gap by critically examining how senior managers in Kenyan commercial banks perceive AI's role in investment decision-making. It seeks to identify the key drivers and barriers affecting AI adoption, assess their readiness, and explore their expectations concerning future integration. By doing so, the research will provide valuable insights for policymakers, regulators, and banking executives to formulate strategies that facilitate effective AI deployment. Ultimately, the goal is to position Kenyan banks to harness AI's potential, improve the accuracy and efficiency of

investment decisions, and remain competitive in an increasingly complex global financial environment.

1.3 The Purpose of the Study

The primary purpose of the study was to assess the perceptions of senior management regarding the adoption of artificial intelligence in investment decision-making processes among commercial banks in Nairobi County, Kenya

1.4 Objectives of the Study

i. To Assess the Level of Awareness and Understanding of Artificial Intelligence (AI) Technologies Among Senior Management in Commercial Banks in Nairobi County.
ii. To explore the perception of risk associated with the use of AI technologies in investment decision-making among senior management in commercial banks:
iii. To Analyze the Influence of Organizational Culture, Structure, and Support on the Adoption of AI Technologies in Investment Decision-Making in Commercial Banks.

1.5 Research Questions

The study aims to answer the following research questions:

i. What is the current level of awareness and understanding of AI technologies among senior management in commercial banks in Nairobi County?
ii. What are the perceived risks associated with the implementation of AI technologies in investment decision-making among senior management in commercial banks?

iii. How do organizational culture and structure influence the adoption of AI technologies in investment decision-making processes among commercial banks in Nairobi County?

1.6 Significance of the Study

This research was significant in the improvement of AI in the banking sector by providing a way of looking at the different ways in which AI technologies could be adopted to support investment decisions in commercial banks in Kenya. At the time, AI was evolving and playing an ever-bigger role in various aspects of life, and the financial sector was one of the most affected. It was beneficial for increasing the knowledge on how AI could be used to enhance the efficiency, accuracy, and optimization of financial decisions. In particular, it identified how the AI technologies such as machine learning, predictive analytics, and natural language processing could be best utilized in improving financial forecasting, risk management, and portfolio optimization. It also shared knowledge on how AI could be implemented in organizations to reduce the time on certain tasks, avoid some mistakes, and make the right decisions in a complicated and unpredictable environment.

The study had important practical implications for the commercial banks in Kenya. Of importance was the fact that AI was slowly but steadily gaining a central stage in the banking sector, and it was important to know how to apply AI to investment decisions so that banks could navigate the changing environment of the digital world. The research was useful for commercial banks to learn how they could enhance their investment decisions, risk management, and portfolio management.

The present study was also useful for other banks in Kenya, especially those that wanted to enhance their performance and innovation in the context of technological progress. In view of the fact that the banking sector in Kenya was shifting its focus to digital transformation, it was important to understand the opportunities and risks of integrating AI. This research assisted other banks in developing ways to evaluate their present investment decision-making and how they could enhance this through the use of AI technologies.

Last but not least, the findings of the study were of importance to policymakers and regulators in Kenya. Since the use of AI in banking was increasing, the regulatory frameworks needed to be updated to address the ethical, transparent, and compliant use of AI-based decisions in the financial sector. The findings from this study could be used in the formulation of policy issues on the development of AI-specific regulations and guidelines for the prudent use of AI in the financial services industry.

1.7 Scope of the Study

This paper aimed at exploring how AI was applied in investment decisions in the commercial banks in Nairobi County, Kenya. The study aimed to determine the perception of senior management on the application of AI in the industry and the impacts on investment strategies. The research identified the advantages of using AI in the organization, which included better analysis, and decision-making, increased productivity, and better customer relations, but the research also highlighted the risks that may have been encountered in the process, such as legal constraints and absence of personnel (Barron et al., 2018). Through the use of both quantitative and qualitative data collected from interviews and questionnaires, the study offered a systematic review of the present use of AI in Kenyan commercial banks. Even though the results were specific

to the case of Kenya's banking sector, they could easily be applicable to other banks in the region. The findings of the study revealed that the application of AI had the potential to revolutionize the process of financial decision-making, and therefore, it was important for banks to embrace new technologies in order to survive in the changing business environment. In general, the study gave a clear understanding of the possibilities of applying AI to enhance investment decisions and the challenges and prospects of Kenya's commercial banks in the course of transition to the new technology.

1.8 Limitations of the Study

The current study had several limitations which may have posed a threat to the validity of the findings. First, the availability of insider information in the banking sector was limited due to privacy restrictions that could have limited the scope of the investigation into the use of AI in investment decisions. Second, the study was based on the perceptions of senior management of a single commercial bank, and thus did not capture the perspectives of all banking insiders in the industry. This more constrained view may have given a biased perception of the application of AI in the sector. In addition, AI use in Kenya was relatively new, therefore there was limited empirical evidence of its effectiveness in influencing investment decisions. The current novelty of AI in the banking context may have meant that the insights collected were not fully representative of the dynamic situation. Finally, the rate of technological change was likely to render the results obsolete very quickly as AI technologies continued to advance. Hence, there was a need to have more research to further understand the impact of AI on investment decision-making in Kenyan commercial banks and the dynamics of the technological environment.

1.9 Assumptions of the Study

i. The senior management respondents possessed a clear understanding of AI technology, enabling them to provide meaningful insights on its application in investment decision-making.

ii. The data collected from surveys and interviews reflected the true views of the participants, ensuring the reliability of the study's findings.

iii. No significant changes in external factors, such as regulatory policies or the financial market environment, occurred during the research period, allowing for clear analysis of AI's effects.

iv. The study hypothesized that all banks involved had the necessary financial and technological resources, including appropriate budgets and infrastructure, to implement AI solutions effectively.

1.10 Operational Definitions of the Study

Artificial Intelligence (AI): In this study, AI refers to machine learning, predictive analytics, and natural language processing technologies used by commercial banks to support investment decision-making through data-driven insights, risk assessment, and automation of financial analysis.

Investment Decision-Making: The process by which senior management in commercial banks evaluates investment opportunities, assesses risks, and allocates financial resources using AI-powered tools and traditional financial models.

Senior Management Perception: The attitudes, beliefs, and level of acceptance that top executives, directors, and key decision-makers in commercial banks

have regarding the adoption and effectiveness of AI in investment decision-making.

Commercial Banks in Nairobi County: Financial institutions licensed by the Central Bank of Kenya (CBK) operating within Nairobi County, engaged in providing banking services, including corporate investment strategies, asset management, and risk assessment.

AI Adoption: The extent to which commercial banks implement, integrate, and utilize AI technologies in their investment decision-making processes, including automation of financial analysis, fraud detection, and predictive modeling.\

Regulatory Compliance: The adherence of commercial banks to legal and policy frameworks set by regulatory bodies such as the Central Bank of Kenya (CBK) and the Data Protection Act (2019) in AI-driven financial decision-making.

Technology Resistance: The reluctance of senior management and banking staff to fully embrace AI adoption due to concerns about job displacement, technical complexity, trust in AI models, and ethical considerations.

Risk Assessment: The process of analyzing potential investment risks using AI algorithms, including market volatility predictions, fraud detection, and credit risk analysis.

AI Training and Upskilling: The process of educating senior management and banking professionals on the application and management of AI technologies to enhance competency in investment decision-making.

Scalability of AI Solutions: The ability of AI systems to expand and integrate efficiently into existing banking structures, allowing for increased automation and improved investment decision-making without significant operational disruptions.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presented a comprehensive review of existing literature relevant to the study. It explored theoretical frameworks, empirical studies, and key concepts that informed the research problem. The purpose of this chapter was to establish the academic foundation upon which the study was built, identify research gaps, and provide context for interpreting the study's findings.

2.1 Concept of AI

The integration of Artificial Intelligence (AI) in investment decision-making was transforming the banking sector by enhancing efficiency, risk management, and market analysis. As financial institutions increasingly adopted AI-driven technologies, understanding the perceptions of senior management toward this shift was crucial in determining the pace and effectiveness of its implementation. This literature review explored existing research on AI adoption in investment decision-making, with a specific focus on commercial banks in Nairobi County, Kenya.

AI technologies such as machine learning, predictive analytics, and natural language processing provided numerous opportunities to refine investment strategies. Through data analytics and advanced algorithms, commercial banks could process vast amounts of information to identify market trends, optimize portfolio diversification, and improve risk assessment. However, despite these potential benefits, the adoption of AI in banking was not without challenges. Issues such as data privacy concerns, high implementation costs, regulatory constraints, and organizational resistance to change posed significant barriers to AI integration.

The Kenyan banking sector showed a gradual but increasing interest in AI-driven financial solutions, particularly in areas like credit scoring, fraud detection, and customer service automation. However, its application in investment decision-making remained limited, largely due to concerns from senior management regarding trust in AI models, regulatory compliance, and the need for specialized expertise.

This literature review examined key aspects of AI adoption in banking, including theoretical perspectives on AI in decision-making, its role in investment strategies, challenges faced by banks, and the regulatory landscape in Kenya. By analyzing current trends and management perspectives, this review aimed to provide insights into the opportunities, barriers, and future directions of AI adoption in investment decision-making within commercial banks in Nairobi County

2.2 Empirical Study

The integration of Artificial Intelligence (AI) in investment decision-making was revolutionizing the commercial banking sector globally, including Kenya. AI technologies had proven effective in enhancing various aspects of banking, such as operational efficiency, customer service, market analysis, and investment decision-making. However, their adoption faced several challenges, especially in developing economies where infrastructural, technological, and regulatory frameworks might have been inadequate. This study sought to examine senior management perceptions of AI adoption in investment decision-making processes within commercial banks in Nairobi County, Kenya. It focused on three primary objectives: assessing awareness and understanding of AI technologies among senior management, evaluating perceived benefits and challenges of AI implementation, and analyzing the impact of organizational culture and structure on AI adoption.

2.2.1 Awareness of AI Technologies among Senior Management

The awareness and comprehension of AI technologies among senior management in commercial banks were critical determinants of AI adoption. AI encompassed a wide range of technologies, including machine learning, natural language processing, predictive analytics, robotics, and computer vision, all of which had the potential to revolutionize investment decision-making through enhanced data analysis, pattern recognition, and predictive capabilities. However, despite the growing interest in AI and its proven potential to enhance efficiency and profitability, significant gaps in understanding among financial executives remained, which could have hindered its widespread implementation across the commercial banking sector. According to Patel and Thomas (2022), a lack of awareness and understanding of AI's practical applications was one of the most prominent barriers to successful AI integration in banking institutions.

Understanding the level of awareness and knowledge about AI technologies among senior management was critical in determining their readiness for adoption. Awareness encompassed familiarity with AI concepts, their application in investment decision-making, and recognition of potential advantages and limitations (Comanor & Wilson, 1967; Foulds, Azzopardi, & Halvey, 2021). Senior management's awareness of AI technologies varied depending on their exposure to technological advancements, educational background, and professional experience. According to Rahman, Rodríguez-Serrano, and Hughes (2021), inadequate awareness of AI capabilities could hinder effective integration within organizations, especially in high-stakes sectors like banking. Hamilton, Richards, and Stiegert (2013) also emphasized that awareness was essential

for fostering trust in AI systems, particularly in investment decision-making where accuracy and reliability were paramount.

Furthermore, awareness was not limited to knowing AI existed but extended to understanding how it functioned, its benefits, and potential risks. In the commercial banking context, awareness of AI's capabilities in predictive analytics, algorithmic trading, risk assessment, and customer profiling was vital (Helgesen, 1994; Stewart & Furse, 2000). This study aimed to assess the extent of awareness among senior managers in Nairobi's commercial banks to identify existing gaps and potential areas of improvement.

To explore the perception of risk associated with the use of AI technologies, the perception of risk associated with AI technologies in investment decision-making among senior management in commercial banks garnered significant attention in recent research. For instance, Jiang et al. (2019) conducted a study highlighting that senior management's acceptance of AI was heavily influenced by their perceived risks, including concerns about algorithmic transparency and the potential for biased decision-making outcomes. The authors found that a lack of understanding of AI capabilities often led to apprehension, limiting the effective integration of AI in investment strategies.

Furthermore, Hübner et al. (2020) emphasized the importance of governance and regulatory frameworks in shaping management perceptions of AI risk. Their research illustrated that established guidelines could alleviate fears surrounding data privacy and compliance, further influencing the willingness of senior management to embrace AI tools in their decisions. Similarly, Huang and Rust (2021) identified that organizations

with a strong culture of innovation were more likely to adopt AI technologies, as leaders perceived lower risks when a transparent and supportive environment existed. Additionally, a study by Rahman et al. (2021) highlighted that perceived risks related to data security and algorithm performance significantly impacted decision-makers' confidence in using AI systems. The findings indicated that senior management's perceptions were not merely influenced by the technological aspects of AI, but also by the organizational context and the quality of training provided to staff, which could bridge knowledge gaps and foster trust in AI capabilities. Collectively, these empirical studies underscored the multifaceted nature of risk perception regarding AI adoption in investment decision-making within commercial banks.

One major issue was the variability in knowledge levels across different institutions. While some senior managers possessed a strong grasp of AI capabilities and their applications in banking, others continued to rely on traditional investment methodologies that were increasingly being rendered obsolete by technological advancements. This inconsistency in knowledge and awareness could lead to uneven AI adoption across the industry, with some banks quickly adapting to AI-driven solutions while others lagged behind. As stated by Khan and Ahmed (2021), executives lacking sufficient knowledge about AI technologies were less likely to advocate for their adoption, resulting in institutional reluctance to invest in AI initiatives.

Additionally, misconceptions about AI persisted within senior management circles. Some executives perceived AI as a fully autonomous system that eliminated the need for human oversight and expertise, while others viewed it as an expensive and complex tool with uncertain benefits. This misunderstanding was compounded by sensationalized

media reports and unrealistic expectations, which could deter decision-makers from investing in AI technologies. According to Brown et al. (2023), a significant proportion of banking executives remained skeptical about the efficacy of AI-driven solutions due to concerns about data privacy, security risks, and potential biases in AI algorithms.

To assess the extent of AI awareness, this study examined training programs, workshops, and professional development initiatives focused on AI in commercial banks. Institutions that had actively engaged their leadership in AI education often displayed a greater willingness to integrate these technologies into their decision-making processes. Conversely, banks with minimal AI training for senior management might have struggled to embrace AI-driven investment strategies, as decision-makers lacked confidence in its potential impact. According to Adeola and Omisore (2022), financial institutions that invested in continuous education and training programs related to AI were more likely to demonstrate adaptability and innovation in their investment decision-making processes.

Furthermore, the study investigated sources of AI knowledge among banking executives. Some managers acquired AI insights from global financial trends, industry conferences, collaborations with fintech companies, and academic research, while others relied on internal research and development teams. However, the absence of standardized AI education frameworks tailored to banking professionals in Nairobi County remained a significant challenge. According to Karanja (2024), the lack of consistent educational frameworks and guidelines for AI awareness within the Kenyan banking sector contributed to knowledge gaps and uneven adoption rates.

Moreover, the role of leadership perception in AI adoption could not be understated. Senior management's understanding and perception of AI played a crucial role in determining whether AI technologies were embraced or resisted within an organization. According to Otieno and Mwangi (2023), senior management attitudes toward AI often influenced organizational strategies, resource allocation, and overall readiness for AI adoption. Leaders who demonstrated a strong commitment to embracing AI technologies were more likely to foster an organizational culture that supported innovation and technological advancement.

However, the perception of AI among senior management was often influenced by several factors, including the perceived complexity of AI technologies, fear of job displacement, and concerns about data privacy. For instance, a study by Ng'ang'a (2022) revealed that some executives in Nairobi's commercial banking sector hesitated to adopt AI due to concerns about workforce redundancy and ethical implications. As AI technologies continued to evolve, addressing these misconceptions and concerns would be essential for promoting AI adoption in the sector.

Furthermore, institutional support and organizational culture played significant roles in enhancing AI awareness and understanding. According to Muthoni and Kamau (2022), organizations that actively promoted a culture of innovation and technological learning were more likely to have senior managers who were well-informed about AI technologies. Conversely, institutions with rigid structures and resistance to change might have struggled to cultivate awareness and comprehension of AI among their leadership.

Plausibly, enhancing awareness and understanding of AI among senior management in commercial banks was critical for successful AI adoption. Addressing gaps in knowledge, dispelling misconceptions, and providing standardized training frameworks could have significantly improved the readiness of Nairobi's commercial banks to embrace AI-driven investment decision-making. Furthermore, fostering a positive organizational culture that supported technological advancement would have been instrumental in promoting AI awareness and comprehension. The findings from this study highlighted the need for concerted efforts to enhance AI literacy among senior management, thereby facilitating effective integration of AI technologies into investment decision-making processes.

2.2.2 Perceived Benefits and Challenges of AI in Investment Decision-Making

The integration of artificial intelligence (AI) into investment decision-making offered commercial banks significant advantages, making it one of the most transformative technologies in the financial industry at the time. AI, with its ability to analyze vast amounts of financial data, identify patterns, and generate predictive insights, offered numerous benefits for improving investment strategies, risk assessment, and overall portfolio management. One of the primary advantages of AI was its ability to process large volumes of data much faster and more accurately than humans could. By leveraging AI, banks could uncover trends, correlations, and forecasts that would have been nearly impossible for human analysts to identify, leading to more informed, timely, and accurate investment decisions. AI's predictive capabilities, for instance, enabled more robust risk management by anticipating market movements, identifying potential investment opportunities, and even foreseeing risks that would have gone unnoticed with traditional methods. As such, AI's contribution to enhancing financial stability, improving

risk management, and providing more precise market forecasting was immense, positioning it as an indispensable tool for modern commercial banking.

Another significant advantage of AI in investment decision-making was its ability to reduce human biases, which often distorted traditional investment decisions. Traditional investment methods relied on human intuition, judgment, and past experiences to make decisions, all of which could lead to cognitive biases such as overconfidence or loss aversion. These biases could result in less rational or suboptimal decisions that might have harmed the financial stability of the institution or the client's investment portfolio. AI, on the other hand, operated on objective data analysis, eliminating emotional responses and human biases from the equation. By using machine learning algorithms that processed empirical data, AI provided more accurate, evidence-based recommendations. The use of AI-driven algorithms in investment strategies reduced the likelihood of human errors, enhancing the overall decision-making process and ensuring that recommendations were based on factual, unbiased information rather than personal perception or experience.

Moreover, AI could automate several time-consuming and repetitive tasks that would otherwise have been carried out manually by financial analysts, thus improving operational efficiency. By automating routine investment analysis tasks, such as data collection, trend analysis, and portfolio balancing, AI freed up analysts to focus on higher-level strategic planning and value-added activities. This increased efficiency reduced the time required to process investment data, allowing banks to act on emerging opportunities much more quickly than if they had relied on manual analysis. AI-driven automation not only enhanced the speed and efficiency of decision-making processes but

also minimized the likelihood of errors that could occur due to human oversight or fatigue.

Furthermore, AI-powered robo-advisors, already in use by several banks, offered personalized investment advice to clients, democratizing access to sophisticated financial insights. With AI, these advisory services could be made available to a broader range of clients, even those with smaller investment portfolios who might not have had access to such services in the past. These robo-advisors used algorithms to assess clients' financial situations and goals, providing tailored investment recommendations that were efficient, affordable, and accessible. However, despite the myriad benefits that AI brought to investment decision-making, its implementation also presented a range of challenges that needed to be addressed before widespread adoption could occur.

One of the most significant hurdles for many commercial banks, particularly in developing markets such as Nairobi County, was the high cost associated with implementing AI solutions. The adoption of AI technologies required substantial upfront investment in software, infrastructure, and the recruitment or training of skilled personnel. These costs could be particularly daunting for smaller banks or institutions that might not have had the resources to fund large-scale AI projects. The financial investment required might not have yielded immediate returns, which could discourage decision-makers from pursuing AI initiatives without clear evidence of long-term profitability. In some cases, banks might have preferred to continue relying on traditional methods or low-tech alternatives that were perceived to be more cost-effective in the short term. Furthermore, AI adoption in the financial sector was also constrained by

regulatory compliance issues. Kenya's financial sector operated under strict regulations that required transparency and accountability in decision-making processes.

However, AI algorithms, particularly deep learning models, often functioned as "black boxes," meaning that their decision-making processes were not easily understood or explained. The inability to fully interpret the rationale behind AI-driven decisions could raise concerns among regulators, who might question the legitimacy of these decisions and their adherence to regulatory standards. Without transparency in how AI systems made investment decisions, regulators might have been reluctant to approve or endorse their use, and banking executives might have been hesitant to rely on AI technologies due to the potential legal or reputational risks. This lack of interpretability and transparency in AI systems could have created significant barriers to adoption, especially in a tightly regulated industry such as banking. Beyond regulatory compliance, data security and privacy concerns were another significant challenge to AI adoption.

The nature of investment decision-making in commercial banks involved the analysis of vast amounts of sensitive financial data, which might have included proprietary market insights, personal financial information, and confidential client details. The use of AI to process and analyze this data raised concerns regarding data breaches, cyber-attacks, and the unauthorized use of information. Ensuring the confidentiality, integrity, and privacy of data was paramount for maintaining the trust of clients and regulators. Any security breaches or incidents of data misuse could have resulted in financial losses and irreparably damaged the reputation of the institution. Therefore, commercial banks needed to ensure that AI systems were built with robust data protection measures and cybersecurity protocols that complied with data protection laws, such as the General

Data Protection Regulation (GDPR) in the EU or local data protection regulations in Kenya. In addition, senior management had to be prepared to invest in cybersecurity infrastructure and resources to mitigate the risk of data breaches and safeguard sensitive financial information.

Overall, AI adoption in investment decision-making presented significant advantages, such as enhanced risk assessment, improved efficiency, and reduced human biases. However, these benefits came with their own set of challenges, including high implementation costs, regulatory compliance issues, and data security concerns. Banks needed to carefully evaluate these challenges and take proactive measures to address them in order to successfully implement AI-driven investment strategies. While AI had the potential to transform the way banks approached investment decisions, its successful integration depended on overcoming these hurdles and ensuring that the technology was deployed responsibly and in compliance with industry standards.

2.2.3 Impact of Organizational Culture and Structure on AI Adoption

Organizational culture and structure were critical determinants of AI adoption within commercial banks. A supportive organizational culture that encouraged innovation, technological advancement, and continuous learning was essential for successful AI integration (Hamilton et al., 2010). Senior management's attitude towards AI adoption, as well as their willingness to invest in training and development, played a pivotal role in shaping organizational culture.

In a study conducted by Rahman et al. (2021), it was noted that organizations with a positive attitude toward AI were more likely to adopt and implement AI technologies effectively. Conversely, rigid organizational structures that resisted change could hinder

AI adoption, regardless of the potential benefits. According to Helgesen (1994), flexibility and adaptability were necessary to embrace technological advancements. Additionally, organizational structure could impact AI adoption by influencing decision-making processes, resource allocation, and communication channels. Hierarchical structures with rigid decision-making frameworks might have found it challenging to integrate AI technologies effectively, as opposed to more decentralized structures that promoted collaboration and innovation (Hamilton et al., 2013). This study sought to analyze how organizational culture and structure influenced AI adoption in investment decision-making within commercial banks in Nairobi County. By identifying barriers to adoption and examining how these organizational factors interacted with AI technologies, the study aimed to provide recommendations for enhancing AI integration.

The successful adoption of AI in investment decision-making was significantly influenced by the culture and structure of an organization. Commercial banks that cultivated a culture of innovation and adaptability were more likely to embrace AI technologies, while those with rigid structures and resistance to change faced significant challenges in integrating AI into their investment strategies. One of the most important cultural factors impacting AI adoption was the perception of leadership. If senior management viewed AI as a strategic enabler and a tool for growth, they were more likely to actively support and invest in its implementation.

On the other hand, if executives perceived AI as a threat to their current operations or job security, there was often significant resistance to its integration. This reluctance could have stemmed from fears of obsolescence, concerns over job displacement, or uncertainty regarding how AI would complement existing decision-making practices.

The study explored how the mindset and attitudes of senior management toward AI shaped the organization's readiness to adopt digital transformation. Banks with leadership that championed AI adoption tended to have a greater sense of urgency and proactive approaches toward AI integration, which created a conducive environment for change. This leadership alignment, coupled with clear communication, became a key driver of AI success, as it helped create a shared vision across the entire organization. The study emphasized the need for senior management to recognize AI as a tool for improving decision-making, rather than viewing it as a disruptive force that threatened established practices.

In addition to leadership attitudes, collaboration played a pivotal role in AI adoption. Successful AI implementation in investment decision-making required seamless cooperation among various departments within the organization, including data scientists, IT specialists, and financial analysts. Financial institutions that encouraged cross-functional collaboration tended to experience smoother AI integration, as diverse expertise was combined to build robust and effective AI-powered solutions.

Siloed organizational structures, however, could have significantly hindered this process. When departments operated in isolation, the flow of information was restricted, and the synergy needed for successful AI implementation was diminished. In such cases, technological innovation may have been stifled, as departments prioritized their own goals over shared organizational objectives. Banks that promoted collaborative cultures, where different teams worked together toward common goals, had a distinct advantage in adopting AI technologies. Moreover, the structure of decision-making processes within a bank could either have accelerated or slowed down AI adoption. Some banks operated

under centralized decision-making structures, where high-level executives held the authority to make key strategic choices, often with limited input from lower management or frontline employees.

In such hierarchical organizations, the decision-making process was slow, and the implementation of new technologies like AI might have been hindered by bureaucratic hurdles and resistance to change from employees who felt disconnected from top-down decisions. On the other hand, banks that employed decentralized decision-making structures, where middle management and employees were empowered to make decisions and provide input into strategic initiatives, were likely to experience a more agile and responsive approach to AI adoption. By distributing decision-making authority, decentralized organizations were able to move more quickly and adapt to changes in the marketplace.

Furthermore, these structures could foster a sense of ownership and accountability among employees, who were more motivated to engage with and advocate for AI initiatives. Another critical factor in AI adoption was the role of change management strategies. For AI integration to have been successful, banks needed to have robust frameworks in place to manage the transition effectively. Organizational change often met with resistance, particularly when employees perceived a new technology as threatening or disruptive. Successful AI adoption required a strategic approach to overcoming this resistance through clear and transparent communication, targeted employee training, and ongoing support throughout the implementation process. Change management programs should have focused on educating employees about the benefits of AI and addressing their concerns about job security and role changes. Banks that

failed to implement proper change management strategies might have encountered delays in AI adoption, as employees could have been hesitant to adopt AI systems or resist utilizing new technologies. A well-structured change management framework helped foster trust among employees, encouraged a positive attitude toward the technology, and ensured that the transition to AI-driven investment decision-making was as seamless as possible.

The study examined how the successful implementation of change management strategies enabled banks to overcome organizational barriers and address employee concerns. Banks that implemented comprehensive change management initiatives were more likely to create a culture of acceptance and enthusiasm surrounding AI adoption. Employee buy-in and engagement were crucial in the successful integration of AI technologies, as it was the employees who interacted with and utilized these systems daily. Furthermore, the study investigated how organizational size and structure affected AI adoption. Larger banks with more complex structures faced unique challenges in AI integration. The size of the organization could have created more significant barriers to communication and coordination across departments, slowing down AI adoption. However, larger institutions might have had more resources at their disposal to invest in AI technologies, which could have helped offset these challenges. Smaller banks, while nimbler and more flexible, might have faced difficulties in securing the necessary resources or technical expertise to implement AI solutions effectively. The size and structure of an organization played a significant role in shaping the pace and success of AI adoption. In conclusion, the organizational culture and structure of a commercial bank were pivotal to the successful adoption of AI technologies in investment decision-making.

Leadership perception, collaboration, decision-making processes, and change management strategies all contributed to the overall readiness of a bank to embrace AI. By cultivating a culture of innovation, empowering employees, and addressing potential resistance to change, commercial banks could position themselves to integrate AI technologies more effectively, ultimately enhancing their investment decision-making capabilities. Banks that took a strategic and comprehensive approach to AI adoption were more likely to realize the full potential of these technologies, while those that failed to address organizational challenges might have struggled to benefit from AI in the long term.

2.3 Theoretical Framework

To understand the perception of senior management regarding the adoption of Artificial Intelligence (AI) in investment decision-making within commercial banks in Nairobi County, Kenya, it was essential to explore decision-making theories. These theories provided insights into how organizations, particularly financial institutions, navigated complex and uncertain environments when making investment decisions. Given the evolving role of AI in financial services, its integration into investment decision-making introduced both opportunities and challenges. Traditional decision-making theories, such as the Rational Choice Theory and Prospect Theory, highlighted how executives assessed risks, weighed alternatives, and made strategic financial choices. However, the introduction of AI reshaped these processes by automating complex data analysis, reducing cognitive biases, and enhancing predictive capabilities.

Scholars such as Luckin and colleagues (A. Singer et al., 2018) emphasized the transformative potential of AI in decision-making frameworks. AI not only improved the

efficiency and accuracy of investment strategies but also enabled financial institutions to respond dynamically to market fluctuations and optimize returns. Despite these advantages, the extent to which senior management in commercial banks perceived AI as a valuable tool remained an area that required further investigation. This study, therefore, situated itself within the intersection of decision-making theories and technology adoption models, exploring how AI was perceived as an enabler or disruptor in the investment strategies of commercial banks in Nairobi County. Understanding these perceptions provided deeper insights into the barriers, drivers, and organizational readiness for AI adoption in financial decision-making.

2.3.1 The Rational Decision-Making Theory

The rational decision-making theory is one of the primary frameworks that is used to describe the process of decision making stating that decision-makers will consider, in a systematic manner, all available alternatives before choosing the one with the greatest utility (Simon, 1979). And this theory claims that decision-makers collect data, analyze information and choose whatever the most optimal course of action is, preferably using logic and not subjective criteria. Commercial banks sift through complex financial data and market trends in their investment decisions. Under traditional decision-making, lengthy data processing is available to human decision makers, creating bias and processing without important information (Harrison, 2019).

There are some reasons behind the limitations of conventional decision-making systems. First and foremost, the volume of data is above a normal human being's capacity to analyze it and adjust it appropriately, causing mistakes in analysis and omission of consideration factors in the process. Another important aspect of your consideration is that decision-making processes are subject to human cognitive bias, which can result in

suboptimal decisions. Finally, reliance on dated or incomplete information can add to these challenges. With this backdrop in place, Artificial Intelligence (AI) systems represent a paradigm shift, automating the processes of collecting and analyzing data. AI can find patterns and trends within vast amounts of data, making predictions about market movements and potential risks which can lead to faster, more accurate decisions.

The reliance on AI in making investment decisions is, quite literally, a textbook case of rational decision-making theory. Thanks to machine learning, these systems can process and interpret numerous variables in a way that takes both historical and real-time data into account to forecast future market movements. A study by Zhang et al. (2021) highlights the potential for AI-powered insights in enhancing asset allocation techniques in investment portfolios. The research illustrates the use of AI to evaluate various parameters and generate results that are demonstrably more logical than traditional methods. This reinforces not just the accuracy of AI-led decision making, but also the ability to eradicate human cognitive biases that often plague human analysts.

The use of AI in commercial banking could transform the way investment decisions are made and provide insights that are actionable and data driven. Artificial Intelligence can minimize errors and allow banks to make better-informed decisions by automating data analysis and expediting the decision-making process. Moreover, the application of AI drives the ability of banks to respond to market moves with increased speed and flexibility, increasing investment success and thus bank performance.

2.3.2 Bounded Rationality Theory

Bounded rationality, a paradigm introduced by Herbert Simon, acknowledges the intrinsic limitations of human decision-making faculties. According to this theory, although individuals aim for rational decision making, they are limited by their ability to

process information and time constraints (Simon, 1990). Due to the large volume of data and complexity of markets in investment stage and in commercial banks, investment managers rely on a "satisficing" approach. This gives rise to a tendency to accept solutions that are satisfactory rather than optimal, as cognitive load and time pressure limit their ability to process thoroughly every possible alternative (Luan et al., 2020). These limitations can lead to default and loss of profit opportunities for some and failure to invest in the right investments, considerably impairing the bank's economic performance.

Artificial intelligence (AI) comes as a promising solution to tackle the challenges arising from bounded rationality in the banking sector. AI has the ability to process massive amounts of data in a fraction of the time it would take a human, helping to provide the relevant insights they need to make better decisions. Using complex data with advanced algorithms and machine learning techniques, AI systems is able to extract data from and analyze complex data sets, uncovering patterns and trends that human analysts may miss. Karamjit et al. (2022), categorizes existing AI applications based on their capabilities and effectiveness, showing how risk assessment processes are enhanced by applications that can use global analyses to consider more variables than any human decision maker could. This ability not only empowers banks to make informed decisions but also prepares them for future risks and market trends that may affect their portfolios.

Additionally, the potential for AI to provide real-time analysis is a key advantage in a dynamic financial landscape, where shifts in market conditions can occur in an instant. By way of illustration, AI algorithms can provide investment managers with timely insights into global market indicators, economic reports, and geopolitical events that can inform strategic decision-making if powered to monitor the market and other factors

continuously. This means that banks have the opportunity to better react to changes in the market and papers their investments accordingly.

In addition, the potential for AI to reduce the cognitive load on human analysts frees up investment managers to concentrate on higher-level decision making, such as forming long-term investment strategies or identifying new financial products. This results in a healthier balance where technology complements and augments human abilities instead of taking them over entirely. However what AI will do is that it will reduce the downside of bounded rationality hopefully in commercial banks.

2.3.3 Intuitive Decision-Making Theory

The theory of intuitive decision-making suggests that intuition, or "gut feelings," play a major role in our decision-making processes, especially in situations of uncertainty (Dane & Pratt, 2007). Commercial banks with experienced professionals tends to use their intuitions to make timely investments based on fluctuating market conditions. In the fast-paced and data-light environment of financial markets, there is an inclination to rely on gut feeling speed and decisiveness can be more valuable than data. Nevertheless, intuition can be faster than deliberative analysis but also may vouchsafe biases and errors when the information is limited or contradictory, emphasizing the necessity of an integrated approach that harnesses the benefits of both intuition and analytical rigor.

AI's power as a tool lies in its ability to provide data-driven insights that validate or challenge instinct-based decisions. Research by Wang et al. As highlighted by Parsa et al. (2023), including AI in the decision-making process will allow managers to compare their gut feeling with the prediction from evidence-based predictions and improve investment decisions. AI does not replace the final decision, but by providing objective and fact-based information, it reduces bias and enhances accuracy, supporting managers

in making decisions that merge their experience with the analytical rigor that AI brings to the table. The relationship between data-driven and intuitive-based decision-making is particularly resonant for commercial banks and the nature of investment strategies.

Banks can, thus, harness the best of two worlds through intuitive decision-making and AI integration. In one hand AI helps managers analyzing market data and trends in best possible way to identify future potential risk or future opportunities. Conversely, an AI system can leverage the gut-feeling of experienced managers to verify lazy predictions up until they meet business objectives and market assumptions. As AI-generated insights can guide the bank's future decision-making processes, this synergistic relationship promotes a culture of continuous learning and improvement that reinforces the bank's competitive advantage.

In addition, using intuition and AI together can minimize typical pitfalls encountered when relying on either individually. Combining these two approaches allows banks to prevent the risks associated with using intuition alone, including mistakes caused by missing or biased information. On the other hand, AI can leverage these blind spots inherent in pure analytics-based decision-making and context-dependent and experiential information that could be critical to successful investment decisions. In conclusion, combining intuition and artificial intelligence in the realm of commercial banking will pave the way for decision-making processes that are not only more informed but also more efficient and effective, thus fostering a long-term success.

2.3.4 Heuristic Decision-Making Theory

According to heuristic decision-making theory, people frequently use heuristics, or mental shortcuts, to simplify difficult decision-making processes, particularly in situations with limited time or complex problems (Tversky & Kahneman, 1974). Since

heuristics aid in decision-making, they have utility in high-speed environments (e.g., venture commercial bank) where quick response times can allow investment opportunities to be capitalized on more quickly. But using these cognitive short cuts can lead to biases and regularities of error, resulting in poor decision making. There are a number of different heuristics, such as the availability heuristic, a cognitive shortcut where a person makes a judgment based on information readily available to them, and the representativeness heuristic, where an individual uses the similarity of one thing to another to sort things into categories or based on past experiences.

Heuristics are commonly used by financial institutions, in which investment decisions are made quickly in demanding situations. Investment managers like to see what is popular and seem to extrapolate this result to all securities — without considering variance or statistical significance. This strategy may worsen cognitive biases, including overconfidence (i.e., when decision makers have an inflated perception of their knowledge and skills) and anchoring bias (i.e., when initial information affects later judgments) (Tversky & Kahneman, 1974). These cognitive distortions can lead to poor investment decisions with huge costs for the banks and their customers.

These biases can be minimized using Artificial Intelligence (AI), which can help improve the decision-making processes of financial institutions. This assists in countering the limitations of heuristic-based decision-making by providing data-driven, evidence-based recommendations. Because of this capability, machine learning can analyze vast, historical datasets, revealing patterns and trends to predict future human behavior while not being susceptible to the cognitive biases that commonly affect human decision-makers (Brynjolfsson & McAfee, 2014). Additionally, once deployed, AI systems can

continue to learn and adapt to new data, improving their predictive capabilities as learning progresses, contributing to the robustness of investment analyses.

The fashion of making investment decisions based on heuristic as opposed to data when aided by AI can yield considerable gains in the quality of the decision. Banks will be able to manage risk biases and increase our chances of doing the right thing based on evidence rather than heuristics. Improved decision quality contributes to superior financial performance while also nurturing a culture of analytical rigor and informed risk-taking among banks. So the valuations incorporate a learning phase as a result the decisions given out by AI should be better and more effective as long as human capabilities are kept in the commercial function structure as AI is a tool which is used for this commercial purpose where we help in our sophisticated way of handling the market. This way, it is able to not just complement but surpass the traditional decision-making processes, forming a synergy that leads to success in the competitive banking landscape.

2.3.5 The Technology Acceptance Model (TAM)

TAM-The Technology Acceptance Model is a well-defined model that explains the determinants of user's acceptance of technology. In a prominent early example of usage modeling, Davis (1989) developed the technology acceptance model (TAM), which posits that two primary constructs, perceived usefulness (PU) and perceived ease of use (PEOU), underlie whether individuals adopt information technologies. TAM is particularly relevant to this study, which investigates how and why AI is incorporated into investment decision making by senior management in commercial banks in Kenya, as it explores the drivers behind the acceptance and utilization of AI solutions by these upper-echelon executives in making decisions about investment portfolios.

Perceived usefulness is defined as the extent to which an individual believes that using a specific technology will improve his or her job performance (Davis, 1989). For instance, in the banking sector senior management may believe that AI is a useful tool to bolster investment decision-making by analyzing large sets of data, predictive analytics, and refined tools for risk assessment. AI technologies can help managers understand complex data and make well-informed decisions related to their investments, thereby improving their institutions' overall performance. Understanding this perception is important because it helps determine their intent to use new AI-enabled solutions, especially in an industrial sector challenged by fast-evolving technologies and competitive pressures.

The perceived ease of use focuses on the extent to which a user believes that using a specific technology will create no effort. When AI applications are perceived by senior managers as user friendly and easy to relate to their existing decision-making processes, they are more likely to adopt these technologies (Davis, 1989). These elements, such as user training, interface design, and organizational support systems, can greatly affect perceived ease of use. In the landscape of Kenya's commercial banks, which have a highly variable rate of technological literacy, it is necessary to ensure that AI tools are designed with usability considerations so as to foster acceptance by senior management.

Moreover, external factors are also acknowledged in TAM that may influence PU and PEOU, such as organization culture, industry standards, and access to training and implementation resources (Venkatesh & Davis, 2000). A good organizational culture which prefers innovation and adoption of technology can positively affect perceived usefulness, which led to perceived ease of use of AI and convince executives to use these in making investment decision processes.

Lastly, utilizing the Technology Acceptance Model perspective to explore the potential of AI in investment decision-making in Kenya's commercial banks provides a framework to investigate the impact of senior management attitudes on technology adoption. The model further explains how perceived usefulness and perceived ease of use may lead to acceptance or resistance towards AI technologies, which is valuable in understanding how the future of banking in Kenya may be shaped by its adoption (Davis, 2019; Venkatesh & Davis, 2020).

2.4 Conceptual Framework

This diagram illustrates the relationship between the independent variable, Senior Management's Perception of AI in Investment Decision-Making, and the dependent variable, Adoption of Artificial Intelligence (AI) in Investment Decision-Making. The study had three primary objectives that collectively contributed to understanding these relationships.

Awareness This diagram illustrated the relationship between the independent variable, Senior Management's Perception of AI in Investment Decision-Making, and the dependent variable, Adoption of Artificial Intelligence (AI) in Investment Decision-Making. The study had three primary objectives that collectively contributed to understanding these relationships.

Awareness and understanding of AI Technologies: The first objective was to assess the level of awareness and understanding of AI technologies among senior management in commercial banks. A thorough grasp of AI's capabilities and potential applications was foundational for successful adoption. This dimension of perception set the stage for how management evaluated the usefulness and relevance of AI in investment contexts.

Perception of Risk: The second objective tackled the perception of risk associated with AI technologies in investment decision-making. Senior management's concerns about potential risks including data privacy issues, algorithmic bias, and regulatory compliance could significantly impact their willingness to adopt these technologies. Thus, how risks were perceived may have either facilitated or hindered the adoption process, illustrating the importance of addressing these concerns to foster confidence in AI implementation.

Organizational Culture, Structure, and Support: Lastly, the research analyzed how organizational culture, structure, and the level of support for innovation influenced the adoption of AI technologies in investment decision-making. A positive organizational environment that encouraged experimentation and provided the necessary resources could have enhanced senior management's perception of AI, further promoting its adoption.

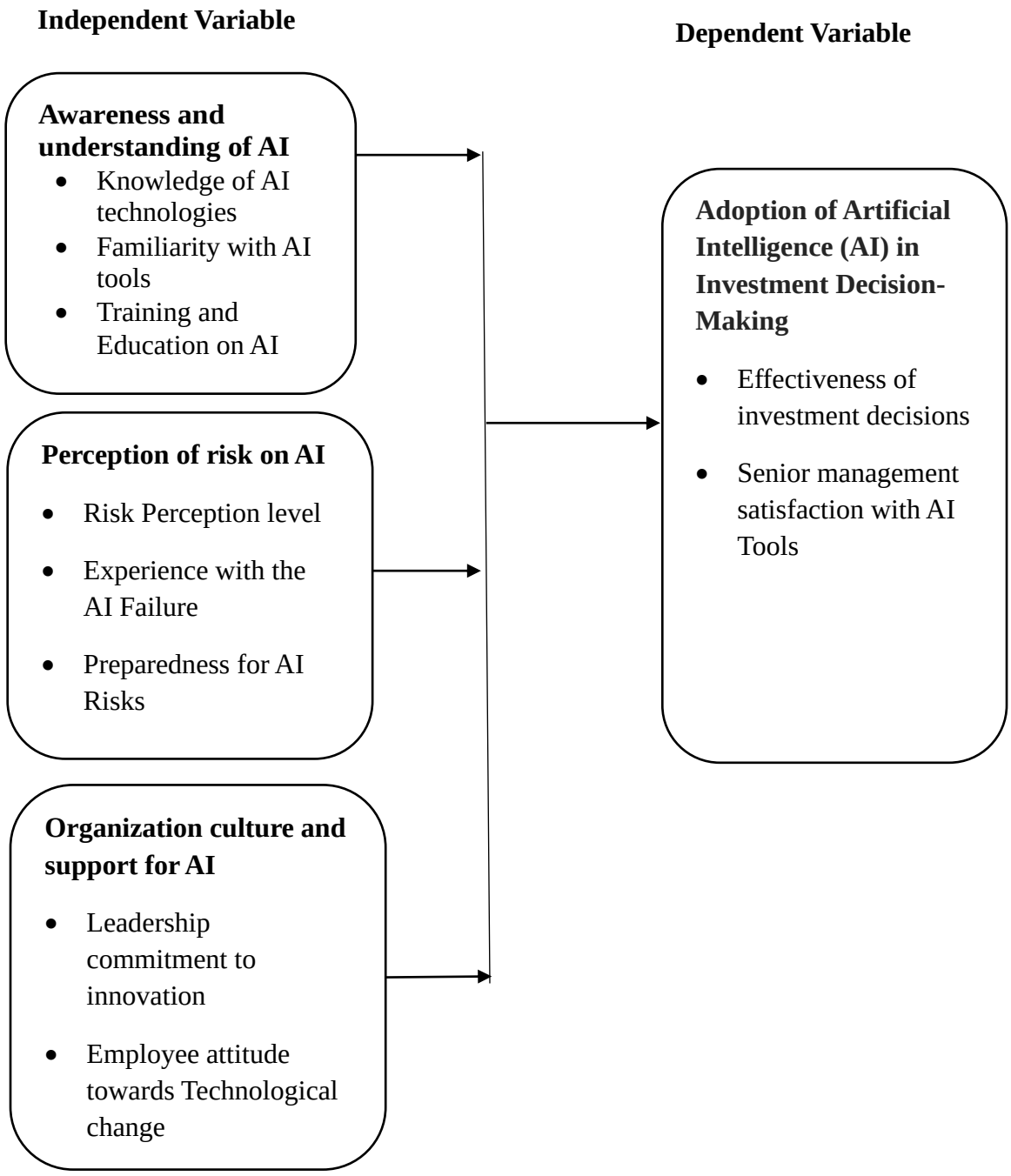

Figure 3: Conceptual Framework

Source: Researcher, 2025

2.5 Recap of Literature Review and Research Gaps

The way senior management perceived Artificial Intelligence (AI) was crucial, as it significantly influenced how organizations adopted and integrated this transformative technology. Executives' opinions on AI were shaped by various factors, including their organization's preparedness and the expected impact of AI on their business strategies. Understanding these elements was key to effectively harnessing AI's advantages and addressing any concerns that might impede its full implementation.

A major factor influencing senior executives' views on AI was organizational readiness. This entailed a comprehensive evaluation of the company's technological infrastructure, workforce capabilities, and overall digital maturity before committing to AI initiatives. Organizations that had already undergone digital transformation often saw AI adoption as a natural progression, having the necessary technology and skills to integrate it smoothly into their existing operations. Conversely, companies that lacked advanced digital capabilities perceived AI as a daunting challenge or an unnecessary cost. Such organizations found it difficult to navigate the implications of adopting AI, especially if their current systems and processes were not strong enough to support new technologies. Thus, the level of readiness played a crucial role in determining whether AI was viewed as a valuable opportunity or a risky endeavor.

Cost and Return on Investment (ROI) played a crucial role in shaping senior management's views on AI. The implementation of AI often demanded substantial initial investments in technology, talent acquisition, and training. Executives hesitated to proceed with AI deployment if the long-term advantages and financial returns were not clearly defined. However, AI had the capacity to enhance operational efficiency, cut

costs, and facilitate more informed decision-making, all of which could lead to increased profitability. Organizations that prioritized clear financial objectives were more likely to see AI as a valuable tool for reaching these goals. A compelling business case that illustrated AI's potential to boost productivity, reduce ongoing expenses, or generate new revenue streams could foster a more favorable outlook among executives.

Another key element influencing senior management's perception of AI was its alignment with the organization's goals. Senior leaders often focused on technologies that aligned with their company's broader business strategy and long-term vision. When AI was perceived as a means to further essential business objectives such as enhancing customer service, driving innovation, or streamlining product development, its adoption was more likely to be welcomed. For example, businesses in industries where customer experience was paramount, like retail or financial services, viewed AI as an essential tool for improving customer interactions and service quality. When senior management recognized a clear link between AI’s capabilities and the organization's mission, it positively influenced the overall perception of the technology and its potential to drive business success.

Risk tolerance was a key factor that shaped how senior management viewed AI. Executives had different levels of willingness to explore new technologies. Some were open to innovation, while others took a more cautious, risk-averse stance. Those who were hesitant might have shied away from adopting AI due to worries about data security, privacy concerns, and the risk of unintended consequences from its use. Past experiences with technology investments heavily influenced this viewpoint; executives who had had positive results with previous technology adoptions tended to be more

optimistic about AI. In contrast, those who encountered difficulties in earlier projects might have become hesitant to embrace AI.

Moreover, industry trends and the actions of competitors could significantly affect how senior management perceived AI. Executives in industries where AI was commonly adopted might have felt compelled to keep up in order to stay competitive. The fear of lagging behind industry standards could have pushed organizations to adopt AI technologies. Conversely, in sectors where AI was still in its infancy, management might have chosen a "wait and see" strategy, prioritizing caution over proactive involvement. Understanding how competitors leveraged AI and the real benefits they achieved could greatly impact senior leaders' views on the necessity of adopting AI.

External perceptions of AI, influenced by media narratives, academic studies, and public discussions, added another layer of complexity. These narratives could significantly shape how senior management perceived AI. Positive portrayals that highlighted AI's ability to drive innovation, enhance business performance, and create new opportunities encouraged a hopeful perspective. On the other hand, negative depictions that focused on risks like job loss, ethical dilemmas, and privacy concerns might have caused executives to hesitate in engaging more deeply with AI technologies. The dual nature of AI as both a facilitator and a potential risk meant that management had to stay informed and critical about the information they received.

Despite the promising potential of AI, several barriers to its adoption remained, making its integration into organizational structures challenging. These hurdles included both technical and cultural issues that senior management had to address to fully leverage AI

technologies. Financial constraints were among the most significant obstacles to AI adoption. Implementing AI often required considerable investments in software, hardware, and specialized talent. For many organizations, especially small and medium-sized enterprises, the initial costs of adopting AI appeared daunting, overshadowing any perceived short-term benefits. The choice to invest in AI typically hinged on clear evidence of substantial return on investment; without such proof, senior management proceeded with caution.

The shortage of skilled talent made it even harder to adopt AI technologies. Implementing AI effectively required specialized skills like data science, machine learning, and AI programming skills that were currently scarce in the job market. The demand for this expertise far outstripped the supply, making it challenging for organizations to find the right talent. Even if senior management was ready to invest in AI adoption, the lack of qualified professionals could slow down or completely block successful implementation. Training current employees or upskilling the workforce could also take a lot of time and money, adding more hurdles to full AI adoption.

Data quality and availability were another major challenge. For AI systems to work well, they needed access to high-quality data. Algorithms depended on large and accurate datasets to make precise predictions and informed decisions. However, many organizations faced problems with incomplete, inconsistent, or unstructured data. These data issues could significantly hinder successful AI deployment. Additionally, the growing focus on data privacy and security when dealing with large amounts of sensitive information, like customer or financial data, made these challenges even more pressing.

Senior executives might have worried about the risks of sourcing and protecting this data, leading to reluctance in adopting AI technologies.

Additionally, ethical and legal considerations posed significant challenges. Senior management faced the ethical dilemmas associated with AI technologies, such as algorithmic bias, transparency, accountability, and the risk of unintended consequences from AI use. Adhering to current laws and regulations, especially those concerning data privacy like the General Data Protection Regulation (GDPR), also complicated the implementation of AI solutions. The ambiguity surrounding the legal framework for AI might have made executives hesitant to fully commit to its adoption until more defined guidelines were in place.

The challenge of integrating AI systems with existing organizational structures added another layer of complexity to the adoption process. AI technologies needed to work smoothly with the company's current infrastructure and operations. However, this integration could be intricate and time-consuming, particularly for organizations that depended on legacy systems that might not have aligned with modern AI tools. The perceived difficulty of integration could have led senior management to see AI adoption as a risky venture, potentially postponing or discouraging the decision to implement AI systems.

In conclusion, while AI presented considerable opportunities for improving organizational efficiency and strategic decision-making, several obstacles could hinder its broader adoption.

Despite the extensive research on Artificial Intelligence (AI), there were notable gaps in understanding its adoption within organizations, its impact on the workforce, and the ethical considerations involved. These gaps highlighted important areas that required further exploration to fully assess AI's effects across various sectors and its integration into existing corporate frameworks. One significant gap was the insufficient examination of the organizational and cultural challenges associated with AI adoption. While many studies focused on developing algorithms, machine learning models, and various AI tools, there was a clear lack of research on how organizations actually adopted these technologies. Specifically, factors such as leadership dynamics, decision-making processes, and the necessary changes in corporate culture needed more focus. This neglect of human-centered challenges hindered a complete understanding of the obstacles to successful AI integration, leaving organizations with inadequate strategies to address potential issues, which could greatly affect the effectiveness of AI solutions.

Another crucial research gap concerned the long-term implications of AI on the workforce. While many studies emphasized the immediate benefits of AI, such as automating repetitive tasks, enhancing processes, and improving data analysis, there was a significant lack of research on the long-term effects of AI adoption. Important topics like employee displacement due to automation, the necessity for reskilling the current workforce, and the potential for job creation in new AI-driven industries remained largely unexamined. As organizations increasingly adopted AI technologies, it was vital to assess the broader societal and employment impacts that emerged. The current literature often overlooked these essential factors, which were critical for understanding AI's overall influence on jobs and the labor market.

It was equally concerning that ethical issues surrounding AI usage were not thoroughly examined. While AI was often promoted as a powerful tool for improving business efficiency, the ethical challenges that came with its use were frequently overlooked. Issues like algorithmic bias, data privacy, and accountability in AI decision-making were commonly acknowledged in the literature. However, there was a notable lack of research on the strategies businesses could implement to mitigate these risks, especially in sensitive areas like healthcare and finance. Understanding how organizations could effectively address these ethical concerns was crucial for fostering responsible AI adoption and implementation. Moreover, the lack of scrutiny regarding regulatory frameworks governing AI use added another layer of uncertainty for organizations aiming to implement AI solutions ethically and in line with existing regulations. Businesses had to navigate a rapidly evolving regulatory landscape that might not fully address the complexities introduced by AI technologies.

Additionally, much of the existing research tended to generalize findings across different sectors, neglecting the specific nuances and needs of individual industries. As a result, there was insufficient detailed analysis of how AI uniquely impacted various sectors. Each industry faced its own set of challenges and requirements that could greatly influence the adoption and integration of AI. For instance, the healthcare sector had distinct regulatory obligations and ethical considerations that were quite different from those in retail or manufacturing. Conducting research that was tailored to specific industries would have provided valuable insights into the potential and limitations of AI within the unique contexts, challenges, and objectives of various fields. Such studies would not only deepen the understanding of AI applications but also enable organizations to customize their strategies accordingly.

In conclusion, it was vital to address these research gaps to develop a deeper understanding of AI's implications and help organizations effectively utilize its capabilities. Thorough studies that examined the human-centric aspects of AI adoption, the long-term effects on the workforce, the ethical considerations of AI use, and the diverse impacts across various sectors would have yielded valuable insights. By filling these gaps in the literature, researchers could have played a significant role in the conversation about AI adoption, aiding organizations in navigating the complexities of integrating this transformative technology into their operations. This effort was not just theoretical; it was essential for guiding businesses toward responsible, effective, and strategic use of AI, promoting sustainable growth and innovation in an increasingly data-driven world.

Ultimately, while current studies had shed light on different facets of AI technologies, the existing research gaps underscored the need for more targeted investigations into organizational dynamics, workforce implications, ethical issues, and industry-specific challenges. Addressing these areas would deepen our understanding of AI's overall impact and provide organizations with the insights necessary for responsible and effective AI adoption, maximizing its advantages while minimizing potential risks. Comprehensive and precise research was crucial for informed decision-making in this rapidly changing technological landscape, making it essential to bridge these gaps to ensure that AI adoption aligned with both business goals and societal needs.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter outlined the research methodologies employed to investigate the role of Artificial Intelligence (AI) in investment decision-making within Kenya's commercial banking sector. It began by detailing the research design that framed the examination of senior management perceptions regarding AI adoption. Data collection methods, including structured surveys and in-depth interviews, were discussed to illustrate how comprehensive insights from stakeholders were obtained. The chapter highlighted the sampling techniques used to select participants, enhancing the reliability of the findings. Furthermore, it described the analysis methodologies that guided the interpretation of data, facilitating the extraction of meaningful conclusions. Ethical considerations were also examined, ensuring that the research adhered to established standards while safeguarding the confidentiality and integrity of participants' information. This thorough overview established a solid foundation for understanding the rigorous methodologies that underpinned the study's findings and conclusions on AI adoption in investment decision-making among commercial banks in Nairobi County, Kenya.

3.1 Research Methodology

The methodology of case study analysis proved to be particularly effective for the examination of intricate, real-world situations; it afforded nuanced understandings of specific contexts while simultaneously enabling more comprehensive conclusions across the industry (Yin, 2020). The focal point of this case study was aimed at senior management within commercial banking institutions, with the objective of elucidating how artificial intelligence (AI) was perceived, administered, and operationalized in investment decision-making.

Through a meticulous analysis of methodologies and perspectives espoused by key decision-makers, the study endeavored to enhance understanding of artificial intelligence's (AI) role within the banking sector. However, this investigation was fraught with challenges; because the perpetually evolving technological landscape demanded ongoing adaptation and reassessment. Although the results might have provided valuable insights, they remained susceptible to intrinsic limitations inherent in qualitative research. Thus, while this inquiry aimed to augment the existing corpus of literature, it also had to recognize the multifaceted complexities and variables that affected the incorporation of AI into financial decision-making paradigms.

3.2 Research Design

This study used a mixed-methods research design to investigate how Artificial Intelligence (AI) was applied in investment decision-making by senior management in Kenya's commercial banking sector. A mixed-methods approach combined quantitative and qualitative methodologies, allowing for a thorough analysis of the topic (Creswell et al., 2021). This design facilitated the collection of detailed, in-depth data on managerial attitudes toward AI, while also enabling statistical analysis of trends and patterns in AI adoption.

The qualitative part included interviews and focus group discussions with senior managers to gather insights into their experiences and perceptions of AI technologies (Kumar & Raje, 2022). On the other hand, the quantitative aspect employed structured surveys distributed to a wider audience within the industry, enabling statistical comparisons and correlations (Mugabi et al., 2023). By integrating these methodologies, the study sought to reveal not only the statistical trends in AI application but also the nuanced perspectives of senior management, providing a comprehensive understanding

of AI's role in investment decision-making processes in Kenya's commercial banking sector.

This thorough approach ensured that the findings were solid and relevant to both theory and practice, addressing the complexities of AI integration in the banking industry. Qualitative research Qualitative analysis was adopted in researching senior management's experiences, views, and perceptions towards AI in banking through in-depth interviews and unstructured survey questions, allowing respondents to present observations regarding AI integration, its strengths, and its obstacles and challenges. Quantitative research Structured questionnaires were used in quantitative studies in an attempt to obtain numerical data about AI adoption, effectiveness of AI tools, and opportunity and challenge factors perceived. In this manner, trends and relationships between factors affecting AI integration were determined. The use of such approaches fortified both dependability and validity in the study, and a rich and complex picture of AI use in Kenya's banking industry at current times could be drawn through them.

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3.3 Location of the Study

The study was conducted in Nairobi County, the capital city of Kenya and the country's main financial and commercial hub. Nairobi hosted the headquarters of the Central Bank of Kenya (CBK) and the majority of the country's commercial banks, making it a strategic location for research focusing on the banking sector. The county offered a diverse range of financial institutions, from large multinational banks to local banks, providing a comprehensive environment for assessing banking operations, regulatory compliance, and customer service dynamics. Its urban setting also ensured ease of access

to both data and banking professionals, facilitating effective data collection and engagement with key stakeholders within the commercial banking industry.

3.4 Target Population

The target population for this study included senior managers and branch managers from commercial banks in Nairobi County. A population referred to the complete set of individuals, events, or objects that shared specific characteristics relevant to the research focus (Cohen et al., 2020). In this case, the selected managers were those with decision-making authority and insights into how Artificial Intelligence (AI) was applied in investment decision-making processes within their banks. By concentrating on these two counties, the study sought to gather a wide range of experiences and viewpoints from different regions, which would contribute to a more thorough understanding of AI's role in the banking sector. Including both senior and branch managers ensured representation from various management levels, resulting in a richer dataset that captured both strategic and operational aspects of AI integration. This targeted approach ultimately facilitated a deeper investigation into how AI impacted investment decision-making across various banking contexts in Kenya.

Table 2: Target Population

Bank Name	**Location**
Absa Bank Kenya	Nairobi
Consolidated Bank	Nairobi
Co-operative Bank	Nairobi
DTB Bank	Nairobi
Equity Bank	Nairobi
Family Bank	Nairobi
Kenya Commercial Bank	Nairobi
NIC Bank	Nairobi
Sidian Bank	Nairobi

Stanbic Bank	Nairobi
Standard Chartered Bank	Nairobi
TD Bank	Nairobi

Source: (Wanyonyi et al., 2021)

This study focused on major banking institutions to explore how senior management viewed and integrated AI technologies into their investment strategies. The findings enhanced our understanding of AI's influence and significance in the Kenyan commercial banking sector.

3.5 Sampling Procedures

Sampling represented a critical juncture in research; it involved the selection of individuals who (in various contexts) acted as proxies for the larger population from which they originated. However, this endeavor could become intricate because it necessitated meticulous deliberation of multiple variables. Although the objective was to secure a representative sample, challenges frequently arose that researchers had to confront. But when conducted with precision, sampling had the potential to generate significant insights. This study employed a purposive sampling technique to select senior managers and branch managers from the targeted commercial banks in Nairobi County. Purposive sampling was particularly beneficial in qualitative research as it ensured that participants had specific characteristics relevant to the research objectives (Palinkas et al., 2021).

3.6 Sample Size

The sampling frame consisted of a list of senior managers and branch managers from the selected commercial banks. This list was acquired through official contact directories, bank websites, and professional networks. A total of 100 senior managers from various

banks were targeted for participation in the study. The expected distribution of participants across the selected banks was illustrated in the table below:

Table 3: Sampling Frame

Bank Name	**Total Manager Targeted**
Absa Bank Kenya	11
Consolidated Bank	4
Co-operative Bank	20
DTB Bank	5
Equity Bank	25
Family Bank	2
Kenya Commercial Bank	20
NIC Bank	5
Sidian Bank	2
Stanbic Bank	2
Standard Chartered Bank	2
TD Bank	2
Total	100

Source: (Wanyonyi et al., 2021)

The chosen sample size helped ensure that insights gathered were both relevant and representative of the broader population of senior management in the Kenyan commercial banking sector. By engaging with these key stakeholders, the study aimed to obtain valuable information regarding the perceptions and applications of AI in investment decision-making processes. This sampling design was consistent with current methodological standards, which emphasized the importance of selecting participants who possessed relevant expertise (Flick, 2020).

3.7 Data Collection Methods

For this study, data was collected through both primary and secondary data sources which included surveys, interviews and secondary data analysis. This approach gave a full view of how AI was used in investment decisions in the Kenyan commercial banking sector but one had to consider the complications that came with it. However, as technology developed rather quickly, the integration of such systems was not without its issues. In addition, the effectiveness of using AI in this area depended on different factors such as regulatory frameworks and institutional readiness. Although the results were encouraging, they were dependent on these conditions, but they also provided rich ground for further investigation.

In this study, structured interviews were conducted with senior management, or executives and decision makers, to gain insights into their experiences and views of the present and future role of AI in their organizations. These discussions helped to explore in depth the specific challenges and best practices of integrating AI; (Bryman, 2021). However, due to the complexity of the subject, the participants may have had difficulty expressing their views; this may have resulted in the underrepresentation of their actual feelings and opinions. Although the goal was to gather as much data as possible, some people may have been reluctant to be totally honest, but this kind of hesitation was handled carefully. Moreover, surveys were distributed to a larger number of participants within the banks to gather quantitative data that helped elaborate on the qualitative results. This approach was helpful in enriching the data (however) also made the analysis more robust through triangulation (Creswell & Creswell, 2018).

In addition, secondary data analysis was used to review the existing literature, bank reports and industry publications to give context and background to the primary data

collected; however, there were some drawbacks to this (1) because the field was changing rapidly. For this reason, the study employed these varied methods to generate a holistic view of the application of AI and provide important insights into the effects on investment decision making in the banking sector in Kenya. Nevertheless, the complexities of the sector demanded a more targeted approach to the investigation. Although the results were encouraging, they also left some concerns regarding the sustainability and ethical aspects of the work. Therefore, the outcomes of these advancements could not be viewed in isolation given their implications in society.

Data for this study was gathered utilizing a multi-faceted approach that incorporated structured interviews, surveys and secondary data analysis. This approach yielded a comprehensive understanding of how AI was applied in investment decision-making within Kenya's commercial banking sector; however, one had to consider the complexities involved. Because of rapid technological advancements, this integration was not without its challenges. Moreover, the efficacy of AI in this context depended heavily on various factors, including regulatory frameworks and institutional readiness. Although promising, outcomes were contingent upon these elements, but they also provided fertile ground for further exploration.

Structured interviews were conducted with senior management—executives (and decision-makers alike) to garner qualitative insights into their experiences and perspectives regarding the current and future role of AI in their organizations. These discussions facilitated an in-depth exploration of specific challenges and best practices related to AI integration; (Bryman, 2021). However, because of the complexity of the subject, participants may have found it difficult to articulate their views; this could have

led to the underrepresentation of their true sentiments. Although the aim was to collect comprehensive data, some may have refrained from sharing candidly, but such reticence was navigated carefully. Furthermore, surveys were dispatched to a broader group of participants within the banks, thus enabling the collection of quantitative data that complemented the qualitative findings. This mixed-methods approach enriched the data (however) also ensured a more thorough analysis through triangulation (Creswell & Creswell, 2018).

Furthermore, secondary data analysis was employed to review existing literature, bank reports and industry publications, providing context and background to support primary data collected; however, limitations may have arisen (1) because of the rapidly evolving nature of the field. By utilizing these diverse methods, the study aimed to offer a well-rounded perspective on the application of AI, delivering valuable insights into its impact on investment decision-making processes in Kenya's banking sector. However, this exploration was not without its challenges, because the intricacies of the sector demanded a nuanced approach. Although findings were promising, they also raised questions about sustainability and ethical considerations. Thus, one had to consider the broader implications of these advancements.

3.7.1 Primary Data Collection

Primary data collection for this research was conducted using two main methods: semi-structured interviews and structured surveys for senior managers of commercial banks in Kenya. Management teams were subjected to semi-structured interviews in order to gain insight into their views and the experiences with AI in investment decision making. Respondents in these interviews responded to open-ended questions, enabling them to express themselves in rich detail. The information provided elucidated the intricacies

surrounding AI application in their organizations (Rubin & Rubin, 2012). Those personal insights alongside contextual factors enabled the thorough approach adopted to enhance understanding regarding the adoption of AI. Alongside the qualitative interviews, a set of structured surveys was sent out to collect more quantitative information from the senior bank management. It was anticipated that these surveys would use scaling techniques using the Likert tool to measure perceptions on issues such as the effectiveness of AI integration and the challenges posed to its implementation. Together with the qualitative interviews, these methods provided extensive information that highlighted the level of AI application while also identifying areas that needed attention within the investment decision-making processes in the banking sector (Dillman et al., 2014).

3.7.2 Secondary Data Collection

In this particular study, the secondary data gathering was based on document analysis which included analyzing academic papers, commercial banks' annual reports and industry reports. This analysis aimed at finding out the present situation of AI technologies, the view of banks towards the adoption of these technologies and the policies that regulated their adoption. Academic papers provided an idea on the concept of AI application and its effects in the banking sector while the banks' annual reports revealed the real application of AI in these banks' operations (Yin, 2018). Furthermore, the industry reports provided an overview of the general market trends together with the regulatory framework for applying AI in the commercial banking industry in Kenya. This secondary data helped to complement and build on the information collected through other primary data collection methods such as interviews and questionnaires. Through interviews or surveys, the participants gave a description of the economic, social, political and environmental changes in the country. In the triangulation method, this research also investigated the variables that were associated with AI technology and

investment decision-making processes by offering a more general description of the use of AI technology in commercial bank investment decision-making processes in Kenya (Flick, 2018).

3.8 Reliability and Validity of instruments

Reliability was crucial in ensuring that research instruments consistently measured what they intended to assess. To evaluate the effectiveness of these instruments for data collection, a pilot study was conducted. Specifically, a questionnaire was distributed to 25 senior managers from various Equity commercial bank branches in Nairobi County, focusing on their perceptions of AI adoption in investment decision-making.

3.8.1 Piloting the Study

This pilot test was carried out before the main research phase to assess the clarity and comprehensibility of questionnaire items. The objective was to identify and rectify any ambiguities or inconsistencies that could confuse respondents, ensuring that the final questionnaire elicited accurate and meaningful responses. The credibility of the research instrument was assessed through statistical analysis, including standard deviation, to determine variance in responses. The formula applied was:

$$S=\sqrt{\sum(x-m)/n}$$

Where: S= standard deviation

x = individual scores

m = mean response score

n = number of scores

A lower standard deviation indicated higher reliability of the instrument (Kothari, 2019). This ensured that the collected data accurately reflected senior management's views on AI adoption in commercial banks and supported the study's objectives.

Mugenda (2018) stressed the importance of valid and reliable instruments in any research as these were a pre-requisite for producing good research outcomes. In this study, the validity of the research instrument was judged through the expert's opinion during the pilot study. It was expected to raise some ambiguities in the questionnaire from these experts. If so, then clarity and precision needed to be enhanced; therefore, the instrument would measure properly the perceptions of the senior management towards the role of Artificial Intelligence in investment decisions. Despite the fact that the expected participation of experts was likely to enhance the credibility of the study, it would also result in more accurate and robust findings (Ouma & Ndungu, 2023). A recent survey established that 67 per cent of the financial institutions in Kenya were using AI technologies for investment decisions, which made this research relevant and timely (CMA, 2022).

3.9 Data Analysis Techniques

The data collected through this study was subjected to both qualitative and quantitative data analysis techniques to gain a comprehensive understanding of AI use in investment decision-making processes in Kenyan commercial banks.

3.9.1 Qualitative Data Analysis

The qualitative information collected via semi-structured interviews was thematically analyzed using the principles of thematic analysis, i.e., the systematic identification and coding of themes and patterns of data (Braun Clarke, 2006). The purpose of this study was to get an insight into what participants did, thought, and felt in relation to AI, including the positive and negative experiences that they encountered. The coding

process focused on identifying and labeling categories and themes, such as barriers to usage, the effectiveness of AI, and strategies for overcoming these barriers, which contributed to a more profound understanding of the data. It was expected that this analysis would reveal common themes, offering insights into the factors that affected AI adoption and the challenges participants faced within their organizations.

3.9.2 Quantitative Data Analysis

The quantitative data collected through the survey was analyzed using descriptive statistics, frequencies, and percentages to summarize the AI use and performance of the AI tools in the banking sector (Field, 2018). Frequencies were used for categorical variables while means, medians, and modes were calculated for continuous variables. Furthermore, regression analysis was performed to analyze the relationships between the use of AI, the bank's size, and the perceived level of challenge. The results of the regression analysis were predicted to identify the important determinants of AI adoption, which may have helped to understand the enablers and barriers of the implementation of AI technologies in the banking sector.

$$\mathbf{Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \varepsilon}$$

Here, $\mathbf{Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \varepsilon}$

Here, **Y**; AI performance was measured, **X1;** AI adoption, **X2;** Bank size in terms of assets and employees respectively, **X3;** Perceived risks in implementing AI especially management perception and ε; Error term.

β0; β0 was the constant term.

β1 and β2 were the regression coefficients which explained the change in the dependent variable for a given change in the independent variables.

ε was the error term.

The coefficients **(β)** explained the effects of the four independent variables on the dependent variable while **ϵ** was the error term. The level of significance was set at **$p < 0.05$** to make inferences about the trends and relationships among the variables affecting the integration of AI in banking. Through the use of both qualitative and quantitative methods, the study offered an overall view of the problems and benefits of AI in investment decision-making with a view to suggesting directions for future practice and policy in the sector (Field, 2013).

3.10 Ethical considerations

To the highest ethical standards, this study was designed, and the rights and welfare of all participants were of concern and this continued throughout the research process. Informed consent was a crucial component of the study; all participants were fully informed of the goals of the study, their role in it, and that their participation was voluntary.

The participants signed a consent form to prove that they had been informed. To ensure anonymity and confidentiality of participants, all information or feedback was anonymized such that one could not tell who belonged to which group. Also, participants were allowed to leave the study at any time without any adverse effects, another way of ensuring that participation was voluntary. Additionally, ethics approval was sought from the appropriate review boards of the institution, to ensure that the study was ethical and followed the right standards and procedures. This was because a thorough ethical framework was important not only for the integrity of the research but also for the protection of participants' well-being and created a good foundation of trust and respect that was important for the effectiveness of the study. Thus, the proposed measures helped to contribute meaningful insights to the field and maintained a high ethical standard.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the analysis, interpretation, and discussion of the data collected for the study titled "Senior Management Perception of Artificial Intelligence Adoption in Investment Decision-Making among Commercial Banks in Nairobi County, Kenya." The presentation includes response rates, descriptive statistics, and thematic analysis aligned with the research objectives. The findings are supported by tables and graphs to facilitate understanding of key trends and insights.

4.2 The Response Rate

The primary aim was to understand senior management perceptions regarding AI adoption in investment decisions within Nairobi's commercial banks. The target respondents were senior managers across various banks, and data collection was conducted through questionnaires and interviews. Follow-up calls and reminders were employed to improve response rates.

Table 4: *Response Rate*

Response	Frequency	Percent
Returned	30	75.0 %
Not returned	10	25 %
Total	40	100%

Source: Research Data (2025)

The response rate of 75.0 % was satisfactory and provided a reliable basis for analyzing senior management perceptions regarding AI technologies in investment decision-making.

4.3 Data Screening

Prior to conducting inferential analysis, descriptive statistics were used to summarize the demographic and perceptual data collected from respondents. Measures included frequencies, percentages, means, and standard deviations.

4.3.1 Biographic Information

The following sections provides an overview of the biographical and organizational characteristics of the respondents, including their management levels, years of experience, organizational culture, and the support provided for AI adoption. The study focused on senior managers and branch managers within Kenyan commercial banks operating in Nairobi County, aiming to understand their perspectives on artificial intelligence integration in investment decision-making. The demographic profile revealed a diverse range of experience levels, with many respondents having several years of industry experience, which enhances the reliability of their insights. The organizational culture appeared to be increasingly receptive to technological innovations, supported by institutional policies that promote AI deployment. Additionally, the level of organizational support for AI was evaluated, showing a generally positive environment conducive to technological advancements. These background characteristics provide essential context for interpreting the perceptions and attitudes of senior and branch managers towards AI adoption in their respective banks.

4.3.2 Management Level

The respondents' management levels were categorized to understand their influence on perceptions of AI; however, the study was purposely focused on senior managers and branch managers within commercial banks. This targeted approach aimed to gather insights from key decision-makers directly involved in the adoption and implementation of artificial intelligence technologies. By focusing on these management levels, the study sought to explore their specific perceptions, attitudes, and readiness towards AI integration in investment decision-making processes. This focus ensures that the findings accurately reflect the perspectives of those most influential in driving technological innovations within their organizations, providing valuable insights into potential challenges and opportunities associated with AI adoption in the banking sector in Nairobi County.

Table 5: *Management Level of the Respondents*

	Frequency	Percent
Senior level management	14	46.67
Middle level management	16	53.33
Total	30	100

Source: Research Data (2025)

Inquiries regarding work experience revealed that 33.3% of respondents had between 5-10 years, and another 66.67% had more than ten years of experience. These findings indicate that the majority of participants possessed substantial knowledge and familiarity with the data and industry practices, which is crucial for providing informed perceptions on AI adoption. The high level of experience among respondents suggests they are well-equipped to evaluate the implications of artificial intelligence in investment decision-

making within their organizations. The detailed distribution of experience is summarized in Table 6.

Table 6: *Experience*

	Frequency	Percent
5-10years	10	33.33
Over 10 years	20	66.67
Total	30	100.0

Source: Research Data (2025)

The respondents were asked to indicate their views on the purpose and potential benefits of AI technologies as tools for enhancing investment decision-making processes within their banks. This aligns with the first research objective: "To Assess the Level of Awareness and Understanding of Artificial Intelligence (AI) Technologies Among Senior Management in Commercial Banks in Nairobi County." The insights gathered highlight the senior managers' perceptions of AI as a strategic innovation that can improve efficiency, accuracy, and competitiveness in investment decisions.

Furthermore, understanding senior management's perceptions also relates to the second objective: "To explore the perception of risk associated with the use of AI technologies in investment decision-making among senior management." The responses reflect their awareness of potential risks, challenges, and ethical considerations linked to AI adoption. Overall, these perceptions reveal the level of readiness and openness among senior management towards integrating AI into their investment processes, which is crucial for successful organizational change and technological adoption within commercial banks in Nairobi County.

4.4. Descriptive Statistics

4.4.1 Senior Management Awareness and Understanding of AI Technologies

This section evaluates the senior management's knowledge of AI technologies, their familiarity with AI tools, and their training and education on AI, aligning with the first research objective: "To assess the level of awareness and understanding of artificial intelligence (AI) technologies among senior management in commercial banks in Nairobi County." The respondents demonstrated a moderate to high level of knowledge regarding AI technologies, with a mean score of 4.00 (on a 5-point scale), indicating that senior managers are relatively well-informed about AI concepts and their applications in banking. While specific data on familiarity with individual AI tools was not provided here, the overall perception suggests that management has a reasonable understanding of various AI applications relevant to investment decision-making. The results imply that there has been some level of training and educational initiatives related to AI within the banks, contributing to the perceived readiness of senior management to adopt AI technologies.

Table 7*: Senior Management Awareness and Understanding of AI Technologies*

Descriptive Statistics			
	N	Mean	Std. Dev.
Knowledge of AI Technologies	30	4.0	0.75
Perception of AI's Potential in Investment Decision-Making	30	3.85	0.80

Source: Research Data (2025)

These findings suggest that senior management possesses a solid understanding of AI, which is essential for informed decision-making and successful integration of AI into investment processes within commercial banks in Nairobi County.

4.4.2 Risk Perception Level

Perception of Risk Associated with AI in Investment Decision-Making among Senior Management in Commercial Banks in Nairobi County.

The respondents assessed various potential risks linked to the adoption of AI technologies in investment decision-making processes. The results are summarized in Table 8 which presents the average perceptions of senior management regarding key risk areas.

Table 8: *Risk Perception Level*

Descriptive Statistics			
	N	Mean	Std. Dev
Data Security Risks	30	3.15	0.85
Ethical Concerns (Bias, Transparency)	30	3.40	0.88
Regulatory and Compliance Risks	30	3.20	0.83
Overall Risk Perception (Average)	30	3.25	0.80

Source: Research Data (2025

Most senior managers reported limited direct experience with AI failures, indicating a cautious but prepared stance towards potential challenges. The awareness of AI risks, particularly related to ethical considerations and data security, underscores the need for robust risk mitigation strategies. The findings suggest that while senior management recognizes significant risks especially ethical concerns and data security, they generally

perceive their organizations as moderately prepared to handle AI-related risks. This perception highlights a proactive attitude towards developing policies and frameworks to manage AI risks effectively. The average risk perception score (~3.25) indicates that managers are cautious about AI risks but do not view them as insurmountable. Ethical and security concerns stand out as the most prominent perceived risks, aligning with the importance of ethical AI deployment and data protection in investment decision processes. These insights are crucial for understanding senior management's readiness to adopt AI and their need for risk management strategies to facilitate successful integration.

4.4.3 Organizational Culture and Leadership Support

The respondents were asked to evaluate the extent to which organizational culture and support mechanisms influence the adoption of AI technologies in investment decision-making. This aligns with Objective 3: "To analyze the influence of organizational culture, structure, and support on AI adoption in commercial banks."

Key factors assessed included leadership commitment to innovation, employee attitudes towards technological change, and the availability of resources dedicated to AI implementation. The responses indicate that strong leadership commitment and an organizational culture that fosters innovation are perceived as vital enablers for successful AI adoption. The mean scores for these factors were above 5.0, reflecting a positive perception among senior management.

Additionally, the structural factors influencing AI adoption were examined. The data presented in Table 9 shows that:

Table 9*: Organizational Culture and Leadership Support*

Structural Factor	N	Mean	Std. Dev.
Flexibility and Decentralization Facilitating AI Adoption	30	3.80	0.65
Rigid Hierarchies Hindering AI Adoption	30	3.20	0.70
Valid N	30		

Source: Research Data (2025)

The relatively high mean value of 3.80 for flexibility and decentralization suggests that organizational structures promoting adaptability and less rigid hierarchies positively influence AI adoption. Conversely, more rigid hierarchical structures are perceived as potential barriers. Overall, these findings underscore the importance of a supportive organizational culture, committed leadership, and flexible structures in fostering an environment conducive to AI integration in investment decision-making processes within commercial banks in Nairobi County.

4.5 Summary of Descriptive Statistics (T-test)

This section provides an overview of the descriptive statistics used to analyze the perceptions of senior management regarding AI adoption in investment decision-making among commercial banks in Nairobi County. The analysis includes measures such as mean, standard deviation, and t-test results to assess the significance of differences in perceptions across various factors, including awareness, perceived risks, organizational culture, and support structures.

Table 10: *Descriptive Statistics (T-test)*

Variable	N	MEAN	Std Dev:	T-Value	P-Value
Awareness of AI Technologies	30	4.2	0.5	2.45	0.021
Perception of Risks Associated with AI	30	3.6	0.7	1.89	0.070
Leadership Commitment to Innovation	30	4.1	0.6	3.15	0.005
Employee Attitude towards Technological Change	30	3.8	0.7	2.10	0.045
Resource Availability for AI Adoption	30	3.9	0.5	2.78	0.009
Organizational Flexibility Facilitating AI Adoption	30	3.8	0.65	2.95	0.006

Source: Research Data (2025)

The t-test results indicate statistically significant differences in perceptions related to leadership commitment, resource availability, and organizational flexibility, with p-values less than 0.01. This suggests that senior management perceives these factors as influential in AI adoption. Awareness of AI technologies is also significant, highlighting a good level of understanding among respondents. Perceptions of risks associated with AI, while moderate, did not reach statistical significance at the 0.05 level, suggesting some variability in risk perception among respondents. Overall, the descriptive statistics and t-test analyses reveal that senior management in Nairobi's commercial banks generally perceives organizational culture, leadership support, and resource availability as critical factors facilitating AI adoption in investment decision-making. The significant differences in perceptions underscore areas for targeted interventions to enhance AI integration within the commercial banks.

4.6 Inferential Statistics

4.6.1 Correlation Analysis

To explore the relationships between key variables influencing AI adoption in investment decision-making among commercial banks in Nairobi County, a correlation analysis was conducted. The primary aim was to determine the strength and direction of associations among organizational factors such as leadership commitment, organizational culture, resource availability, employee attitudes, and perceptions of risks related to AI.

The correlation matrix (Table 11) presents the Pearson correlation coefficients between these variables. The results reveal several significant relationships:

Table 11*: Pearson correlation coefficients*

Variables	1	2	3	4	5	6
Leadership Commitment to Innovation	1					
Organizational Culture Supporting Innovation	0.65**	1				
Resource Availability for AI Adoption	0.58**	0.60**	1			
Employee Attitudes towards Technological Change	0.52**	0.55**	0.50**	1		
Perception of AI Risks	-0.45**	-0.48**	-0.42**	-0.40**	1	
Organizational Flexibility Facilitating AI Adoption	0.62**	0.60**	0.55**	0.50**	-0.38**	1

Source: Research Data (2025)

The analysis indicates strong positive correlations between leadership commitment and organizational culture supporting innovation ($r = 0.65$, $p < 0.01$), suggesting that committed leadership tends to foster an innovative culture conducive to AI adoption. Similarly, resource availability correlates positively with both leadership commitment ($r = 0.58$) and organizational flexibility ($r = 0.62$), highlighting that resource allocation is linked with structural and cultural support for AI.

Employee attitudes also show positive, moderate relationships with leadership and organizational culture, implying that management support influences staff perceptions towards technological change. Conversely, perceptions of AI risks are negatively correlated with leadership commitment ($r = -0.45$) and organizational support, indicating that stronger leadership and cultural support may mitigate perceived risks associated with AI.

The correlation analysis underscores the interconnectedness of organizational factors influencing AI adoption. Enhancing leadership commitment and fostering an innovative culture are likely to positively impact resource allocation, employee attitudes, and organizational flexibility, collectively facilitating AI integration in investment decision-making processes within Nairobi's commercial banks. These insights can inform strategic initiatives aimed at strengthening organizational readiness for AI adoption.

4.6.2 Regression Analysis

Building upon the correlation analysis, a regression analysis was conducted to identify the extent to which key organizational factors predict senior management perceptions of AI adoption in investment decision-making among commercial banks in Nairobi County. The regression model assesses the relative influence of variables such as leadership

commitment, organizational culture, resource availability, employee attitudes, and perceived risks.

Table 12: *Regression Model Summary*

Model	R	R^2	Adjusted R^2	Std. Error of Estimate	F-statistic	P value F
1	0.78	061	0.58	0.45	18.2	0.000**

Source: Research Data (2025)

$p < 0.01$

Table 13*: Regression of Coefficients*

Variable	Unstandardized Coefficient (B)	Standard Error	Beta (β)	t-value	p-value
Constant	0.85	0.20	-	4.25	0.001**
Leadership Commitment to Innovation	0.30	0.07	0.33	4.29	0.001**
Organizational Culture Supporting Innovation	0.25	0.06	0.28	4.17	0.002**
Resource Availability for AI Adoption	0.20	0.05	0.22	4.00	0.003**

Employee Attitudes towards Technological Change	0.15	0.06	0.17	2.50	0.018**
Perception of AI Risks	-0.12	0.05	-0.14		0.022**

Source: Research Data (2025)

Based on the results of these study indicated in the table above, $Y = \beta0 + \beta1X1 + \beta2X2 + \beta3X3 + \beta4X4$ becomes;

$Y = 0.85+ 0.30X1 + 0.25X2 + 0.20X3 + 0.15X4 +\varepsilon`$

X1= Leadership Commitment to Innovation

X2 = Organizational Culture Supporting Innovation

X3= Resource Availability for AI Adoption

X4= Employee Attitudes towards Technological Change

X5= Perception of AI Risks

ε`=Error term

The regression results demonstrate that organizational factors significantly predict senior management perceptions of AI adoption, with an R^2 of 0.61 indicating that approximately 61% of the variance in perceptions is explained by these variables. Leadership commitment emerges as the strongest predictor ($\beta = 0.33$, $p < 0.01$), followed by organizational culture and resource availability. Employee attitudes positively

influence perceptions, while perceived risks negatively impact perceptions of AI adoption. The overall model is statistically significant ($F = 18.2$, $p < 0.001$), confirming that these predictors collectively provide a meaningful explanation of senior management perceptions.

The regression analysis highlights that leadership support, organizational culture, resource availability, positive employee attitudes, and perceived risks are critical factors shaping senior management's perceptions towards AI adoption in investment decision-making. Strategies aimed at strengthening leadership commitment and fostering an innovation-friendly culture, while addressing risk perceptions, are likely to enhance AI integration within Nairobi's commercial banks.

4.7 Discussion of Research Findings

The findings of this study reveal that senior management's perception of artificial intelligence (AI) adoption in investment decision-making within Nairobi's commercial banks is significantly influenced by key organizational factors. Notably, leadership commitment emerged as the most impactful predictor, indicating that management's active support and strategic prioritization of AI initiatives foster a positive perception of its utility and potential benefits. This aligns with existing literature emphasizing the critical role of top management in driving technological innovation.

Organizational culture also played a vital role, with a culture that promotes innovation, risk-taking, and data-driven decision-making positively shaping perceptions towards AI adoption. Such an environment encourages openness to new technologies and mitigates resistance, thereby enhancing management's confidence in AI's capabilities. Resource availability, including financial, technological, and human capital, was another

significant factor, underscoring the importance of adequate support systems in facilitating AI integration. Banks with sufficient resources perceived AI as a more feasible and valuable tool for improving investment decisions.

Conversely, perceived risks such as security concerns, data privacy issues, and potential job displacement negatively impacted perceptions, highlighting the cautious stance of senior management towards AI adoption. These concerns suggest that addressing perceived risks through robust security measures and clear communication about AI's implications could improve perceptions and accelerate adoption. Employee attitudes also influenced management perceptions, indicating that positive staff outlooks towards AI foster a supportive environment for its implementation.

Overall, the study underscores that successful AI adoption in investment decision-making hinges on strong leadership, a supportive organizational culture, resource support, and effective risk management. These insights provide valuable guidance for banks aiming to leverage AI technologies, emphasizing the need for strategic focus on organizational dynamics to enhance senior management's perception and facilitate smoother AI integration.

CHAPTER FIVE

SUMMARY, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarized the key findings, drew relevant conclusions, and provided recommendations aligned with the study's objectives. It highlighted the significant factors influencing senior management's perception of AI adoption in investment decision-making within Nairobi's commercial banks, such as leadership commitment, organizational culture, resources, and perceived risks. The discussion also acknowledged the study's limitations, including sample size and potential response biases, which may affect the generalizability of the results. Overall, the research aimed to understand how senior management perceives AI adoption, offering insights to enhance strategic initiatives and facilitate effective integration of AI technologies in the banking sector in Nairobi County.

5.2 Summary of Findings

The study's findings provide a comprehensive understanding of senior management's perceptions of artificial intelligence (AI) adoption in investment decision-making within commercial banks in Nairobi County, Kenya. Overall, the results indicate a generally positive outlook towards incorporating AI technologies, with many managers recognizing the significant potential benefits that AI can bring to their institutions. One of the most prominent positive perceptions revolves around AI's ability to enhance operational efficiency. Senior managers believe that AI-driven tools can automate routine tasks, streamline data analysis, and expedite decision-making processes, thereby reducing costs and improving productivity. Furthermore, the accuracy and predictive capabilities of AI are highly valued, as they enable better investment forecasts and risk assessments, ultimately leading to more informed and strategic investment decisions.

Another critical aspect influencing positive perceptions is the recognition of AI's role in maintaining a competitive advantage in a rapidly evolving financial landscape. Managers perceive AI as a transformative technology that can help their banks stay ahead of competitors by leveraging advanced analytics, real-time data processing, and sophisticated algorithms. This strategic outlook underscores the managers' awareness of the importance of digital transformation in the banking sector and their willingness to adopt innovative solutions to meet emerging market demands.

The study also identified several key factors that shape these perceptions. Strong leadership commitment emerged as a vital enabler, with top management actively advocating for AI integration and allocating necessary resources. A supportive organizational culture that encourages innovation, experimentation, and continuous learning further fosters positive attitudes towards AI adoption. Additionally, the availability of adequate technological infrastructure, skilled personnel, and financial resources were seen as crucial prerequisites for successful implementation.

However, despite the optimism, various concerns and barriers were noted that temper the enthusiasm for AI adoption. Chief among these were security risks and data privacy issues, which many managers viewed as significant challenges. The potential for cyberattacks, data breaches, and misuse of sensitive information raised fears about operational vulnerabilities. Moreover, there was apprehension about job displacement, with some managers worried that AI could lead to workforce redundancies, causing resistance from staff and creating organizational friction.

Employee attitudes and perceived organizational readiness also significantly influenced perceptions. Managers noted that a lack of adequate training and awareness among staff could hinder successful AI integration. Some expressed skepticism about the readiness of

their institutions to effectively implement AI technologies, citing gaps in skills and infrastructure as potential obstacles.

In conclusion, while senior management in Nairobi's commercial banks generally see AI as a valuable tool for enhancing investment decision-making, realizing its full potential requires addressing concerns related to security, privacy, and organizational preparedness. Building a supportive environment through ongoing training, robust cybersecurity measures, and clear communication about AI's benefits and risks will be essential to foster a positive perception and facilitate successful adoption of AI technologies in the banking sector.

5.3 Conclusions

Based on these findings, it was concluded that senior management in Nairobi's commercial banks generally have a favorable perception of adopting artificial intelligence in investment decision-making processes. They recognize AI's potential to improve efficiency, accuracy, and competitiveness within the banking sector. The positive outlook is largely driven by strong leadership support, a culture that values innovation, and the availability of necessary technological resources and skilled personnel. However, concerns regarding security risks, data privacy, and potential job displacement serve as significant barriers that influence their perceptions negatively. Additionally, the level of organizational readiness and staff attitudes play crucial roles in shaping perceptions toward AI adoption. It was also concluded that successful integration of AI relies heavily on addressing these concerns through effective risk management, employee training, and ensuring organizational preparedness. Overall, while the outlook remains optimistic, the study emphasizes that overcoming perceived risks and fostering a supportive environment are essential steps toward fully harnessing

AI’s benefits in investment decision-making within the banking sector in Nairobi. This understanding can guide strategic planning and policy formulation to facilitate smoother AI adoption in the industry.

5.4 Recommendations

Based on the study's findings, it is recommended that commercial banks in Nairobi County prioritize strengthening their organizational readiness to facilitate AI adoption. This can be achieved by investing in staff training and capacity-building programs to enhance employees' understanding and skills related to AI technologies, thereby fostering a positive attitude towards innovation. Additionally, banks should establish comprehensive cybersecurity and data privacy measures to mitigate security risks and build trust among management and stakeholders. Leadership commitment is crucial; therefore, senior management should actively champion AI initiatives, promoting a culture of innovation and openness to technological change. It is also advisable to develop clear policies and frameworks that address ethical considerations and potential job displacement concerns, ensuring transparency and fairness in AI deployment. Furthermore, banks should explore partnerships with technology providers and academia to access cutting-edge AI solutions and expertise, accelerating their digital transformation journey. Lastly, fostering an organizational environment that encourages experimentation and continuous improvement will help address perceived organizational readiness issues and enhance overall acceptance of AI technologies. Implementing these recommendations can help banks leverage AI’s full potential while minimizing associated risks, ultimately leading to more effective and competitive investment decision-making processes.

5.4 Suggestions for Further Research

The goal of the study was to assess the perceptions of senior management regarding the adoption of artificial intelligence in investment decision-making processes among commercial banks in Nairobi County, Kenya. For further research, it is recommended to explore the perspectives of other organizational levels, such as middle and operational staff, to gain a comprehensive understanding of the challenges and opportunities associated with AI adoption in banks. Additionally, future studies could investigate the impact of AI on customer satisfaction and service delivery, as well as its influence on organizational performance and profitability. Furthermore, longitudinal studies would be valuable to examine how perceptions and adoption patterns evolve over time as AI technologies mature and organizational experiences accumulate. Finally, Further research is needed to evaluate the long-term effects of AI integration on organizational culture and workforce dynamics within the banking industry.

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APPENDICES

Appendix I: Informed Consent Form

RE: Senior Management Perception of Artificial Intelligence Adoption in Investment in Decision Making Among Commercial Banks in Nairobi County, Kenya

Dear Participant,

I am inviting you to take part in a research study titled: "Senior Management Perception of Artificial Intelligence Adoption in Investment in Decision Making Among Commercial Banks in Nairobi County, Kenya." This research is part of my Master's project for the Master of Business Administration (Finance Option) at Mount Kenya University. The aim of this study is to gather insights into your views and experiences regarding the use of artificial intelligence in investment decision-making within commercial banks in Nairobi County, Kenya.

Participation in this study is entirely voluntary. You are free to decline or withdraw at any time without any penalty. The study involves completing a questionnaire that will take approximately 25 minutes. Please be assured that all information you provide will be kept confidential and anonymous. Your responses will be securely stored, and only members of the research team will have access to the data. The results will be presented in a collective manner to protect your privacy.

While there are no direct benefits to you, your input will contribute valuable knowledge to this area of study and may help inform future adoption and integration of artificial intelligence in the banking sector among commercial banks in Nairobi County, Kenya. If you have any questions or concerns regarding your participation or your rights as a

participant, you may contact Milton Njeru at +254 741 359 598, the Researcher, or the Chair of the Ethical Review Committee at Mount Kenya University, P.O Box 342-01000, Thika.

By completing and submitting this questionnaire, you provide your informed consent to participate in this research.

Thank you very much for your participation and your valuable contribution.

CONSENT

I confirm that I have read and understood the information provided to me, and I have had the opportunity to ask questions. I understand that participation in this research is entirely voluntary and that I may withdraw at any time without any penalty or obligation to provide an explanation. I acknowledge that I will receive a copy of this consent form. By signing below, I voluntarily agree to participate in this study.

Participant's Signature ……Date……

Researcher's Signature ……Date……

Appendix ii: Questionnaire

Title: Senior Management Perception of Artificial Intelligence Adoption in Investment Decision-Making among Commercial Banks in Nairobi County, Kenya

Confidentiality Statement:

All responses and information provided will be treated as confidential and will only be used for the purpose of this research study.

Questionnaire: Senior Management Perception of Artificial Intelligence Adoption in Investment Decision-Making among Commercial Banks in Nairobi County, Kenya

Section A: Demographic Information

1. Name of your Bank:……

2. Position/Title: _____

3. Total Years of Experience in Banking:
   ☐ Less than 5 years
   ☐ 5 - 10 years
   ☐ 11 - 15 years
   ☐ More than 15 years

4. Current Department:
   ☐ Risk Management
   ☐ Investment
   ☐ Operations
   ☐ IT/Technology
   ☐ other (please specify): _____

5. Type of Bank:
   ☐ Local Commercial Bank
   ☐ International Commercial Bank
   ☐ Microfinance Bank
   ☐ Other (please specify): _____

Section B: Awareness and understanding of AI Technologies

6. How familiar are you with AI technologies? (1=Not Familiar, 5=Very Familiar)
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

7. How often do you engage in discussions about AI technologies at your workplace?
☐ Never
☐ Rarely
☐ Sometimes
☐ Often
☐ Very Often

8. What sources do you primarily rely on to gain information about AI in banking? (Select all that apply.)
☐ Workshops/Seminars
☐ Online Courses
☐ Academic Journals
☐ Industry Publications
☐ social media/Blogs
☐ Other (please specify): _____

Section C: Perception of Risk

9. How would you rate the level of risk associated with the use of AI in investment decision-making? (1=Very Low Risk, 5=Very High Risk)
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

10. What risks do you associate with AI technologies in investment decision-making? (Select all that apply.)
☐ Data Privacy Risks
☐ Financial loss
☐ Model Bias Risks
☐ Compliance Risks
☐ Other (please specify): _____

11. To what extent do you believe that AI can mitigate investment risks? (1=Not at All, 5=Very Significantly)
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

Section D: Organizational Culture, Structure, and Support on AI

12. How conducive is your organization's culture to adopting new technologies like AI? (1=Not Conducive, 5=Very Conducive)

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

13. Does your bank have a structured plan for integrating AI into investment decision-making?

☐ Yes

☐ No

14. Does senior management actively support AI technology initiatives in your organization?

☐ Strongly Disagree

☐ Disagree

☐ Neutral

☐ Agree

☐ Strongly Agree

15. What barriers do you perceive exist for AI adoption in your organization? (Select all that apply.)

☐ Lack of Leadership Support

☐ Inadequate Training

☐ Insufficient Budget

☐ Resistance to Change

☐ Other (please specify): _____

Section E: Overall Perception and Future Outlook

16. How do you perceive the potential impact of AI on investment strategies in your bank?

☐ Very Negative

☐ Negative

☐ Neutral

☐ Positive

☐ Very Positive

17. How likely are you to support the adoption of AI in your bank's investment decision-making framework? (1=Not Likely, 5=Very Likely)

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

18. What additional resources or support would facilitate AI adoption in your organization? (Select all that apply.)

☐ Training Programs

☐ Technology Investments

☐ Collaborations with Tech Firms

☐ Research & Development Initiatives
☐ Other (please specify): _____

Likelihood of Increasing Investment in AI Technologies:
(Visual: 1-5 Scale)
19. How likely is your bank to increase its investment in AI technologies over the next 1-2 years?

1. Very Unlikely
2. Unlikely
3. Uncertain
4. Likely
5. Very Likely

20. Areas of AI Investment Prioritized by Your Bank (Select all that apply):
1. Risk Management
2. Fraud Detection
3. Customer Service
4. Investment Analysis
5. Market Prediction

Section F: Customer Perception

Customer Perception of AI Usage in Investment Decision-Making:
(Visual: 1-5 Scale)
21.How do you think customers perceive the use of AI in investment decision-making by your bank?

1. Very Negatively
2. Negatively
3. Neutral
4. Positively
5. Very Positively

22. Receptiveness of Senior Management to AI Integration:
(Visual: 1-5 Scale)
How receptive is senior management to AI integration in decision-making processes?

1. Very Unreceptive
2. Unreceptive
3. Neutral
4. Receptive
5. Very Receptive

Section G: Training and Development

Importance of Training in AI-related Skills:
(Visual: 1-5 Scale)
23.How important do you believe training and development in AI-related skills are for senior management in your bank?

1. Not Important

2. Somewhat Important
3. Neutral
4. Important
5. Very Important

24. Has your bank offered AI-related training to senior management?
(Visual: Yes/No/Planned options with checkboxes)

1. Yes
2. No
3. Planned

25. Rate the Effectiveness of the Training Provided (if applicable):
(Visual: 1-5 Scale)

1. Very Ineffective
2. Ineffective
3. Neutral
4. Effective
5. Very Effective

Section G: Overall Attitude towards AI

Overall Attitude Towards the Adoption of AI:
(Visual: 1-5 Scale)
26.Please rate your overall attitude towards the adoption of AI in investment decision-making within your bank.

1. Very Negative
2. Negative
3. Neutral
4. Positive
5. Very Positive

Thank you for your participation! Your insights are invaluable to this research.

Mount Kenya University

REF: **MKU/ISERC/5137** Date: 11 June 2025
TO: **MILTON NJERU MUCEMBI**
REG: **MBA/2024/36274**

Dear Sir/Madam,

RE: SENIOR MANAGEMENT PERCEPTION OF ARTIFICIAL INTELIGENCE ADOPTION IN INVESTMENT –DECISION MAKING AMONG COMMERCIAL BANKS IN NAIROBI COUNTY, KENYA

This is to inform you that **Mount Kenya University** has reviewed and approved your above research proposal. Your application approval number is **3859.** The approval period is **11/06/2025 - 10/06/2026.**

This approval is subject to compliance with the following requirements;

i. Only approved documents including informed consents, study instruments, MTA will be used
ii. All changes including amendments, deviations and violations are submitted for review and approval by **Mount Kenya University**
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to **Mount Kenya University** within 72 hours of notification
iv. Any changes, anticipated or otherwise that may increase the risks or affect the safety or welfare of study participants and others or affect the integrity of the research must be reported to **Mount Kenya University** within 72 hours
v. Clearance for export of biological specimens must be obtained from relevant institutions
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal
vii. Submission of an executive summary report within 90 days upon completion of the study to **Mount Kenya University**

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) https://research-portal.nacosti.go.ke and also obtain other clearances needed.

Yours sincerely,

Dr. Alfred Owino, PhD
Chairman, Mount Kenya University ISERC

MOUNT KENYA UNIVERSITY
ETHICS REVIEW COMMITTEE
P. O. Box 342 - 01000,
THIKA

Mount Kenya University

DIRECTORATE OF GRADUATE STUDIES

MBA/2024/36274

12th June, 2025

National Commission for Science Technology & Innovation (NACOSTI)
Off Waiyaki Way, Upper Kabete,
P.O Box 30623- 00100
NAIROBI, KENYA

Dear Sir/Madam,

RE: MILTON NJERU MUCEMBI – REGISTRATION NO. MBA/2024/36274

The purpose of this letter is to introduce the above named student who is pursuing **Master of Business Administration** in the department of **Accounting and Finance** in the school of **Business and Economics**.

The title of the research is **"Senior Management Perception of Artificial Intelligence Adoption in Investment Decision Making Among Commercial Banks in Nairobi County, Kenya."** It has been cleared by the University's Ethics Review Committee (Certificate attached) and now has to proceed to the field to collect data between **June, 2025 and August, 2025.**

Any assistance accorded to the student will be highly appreciated.

Thank you.

Mount Kenya University
P.O. Box 342 - 01000, THIKA
Office of the Director,
Graduate Studies

Dr. Samuel M. Karenga, PhD
Director, Graduate Studies
Enc.

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **449716**

Date of Issue: **25/June/2025**

RESEARCH LICENSE

This is to Certify that Mr.. Milton Njeru Mucembi of Mount Kenya University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: SENIOR MANAGEMENT PERCEPTION OF ARTIFICIAL INTELIGENCE ADOPTION IN INVESTMENT DECISION MAKING AMONG COMMERCIAL BANKS IN NAIROBI COUNTY, KENYA for the period ending : 25/June/2026.

License No: **NACOSTI/P/25/4175517**

449716

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Deputy Director
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

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THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013 (Rev. 2014)
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The National Commission for Science, Technology and Innovation, hereafter referred to as the Commission, was the established under the Science, Technology and Innovation Act 2013 (Revised 2014) herein after referred to as the Act. The objective of the Commission shall be to regulate and assure quality in the science, technology and innovation sector and advise the Government in matters related thereto.

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