EFFECT OF INSTITUTIONAL RISK MANAGEMENT FRAMEWORK ON OPERATIONAL EFFICIENCY OF COMMERCIAL STATE CORPORATIONS IN KENYA

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MASTER OF BUSINESS ADMINISTRATION CORPORATE MANAGEMENT

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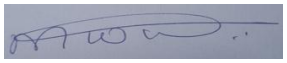
DECLARATION

I declare that this research dissertation is my original work that has not been published before nor has been submitted elsewhere for a degree award. I can too confirm that it contains no material written or published by other people with the exception of areas in which their work has been duly referenced and the authors acknowledged.

Signature 

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23/04506

Supervisor Declaration

I do hereby confirm that I have examined the master's dissertation of

Margaret Wairimu Ngugi

And have certified that all the revisions that the dissertation panel and examiners recommended have been adequately addressed.

Signature……. **Date…….**

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ABSTRACT

This research was vindicated by the crucial mandate that institutional risk management frameworks (IRMF) serve in boosting the operational efficiency of Kenyan commercial state corporations. The organizations are indispensable national development drivers, entrusted with providing critical services, creating revenue, and boosting economic stability. IRMF refers to structured mechanisms that include risk identification, risk assessment, risk response, and risk monitoring and review. Nevertheless, majority are challenged with inadequate risk culture, insufficient top management support, inadequate resources, lack of training, and an absence of proper monitoring and evaluation frameworks. These gaps undermine their operational efficiency and sustainability. This research general objective was to establish institutional risk management frameworks effect on the operational efficiency of commercial state corporations in Kenya. The specific objectives were to establish the influence of risk identification, evaluate the effect of risk assessment, establish the effect of risk response, and examine the effect of risk monitoring on operational efficiency. The research was grounded in the Enterprise Risk Management Theory, Resource-Based View Theory, Contingency Theory, and Stakeholder Theory. A descriptive survey research design was employed in this research, targeting all 54 Kenyan commercial state corporations. The head of risk management or their equivalent in each corporation was the target respondents, justified by their pivotal role in implementing and overseeing risk management frameworks. Data was obtained via structured questionnaires and analyzed via descriptive, correlation, and multiple linear regression. The regression results discovered that institutional risk management frameworks significantly influence operational efficiency ($R^2 = 0.941$, $F = 172.520$, $p < 0.000$). Specifically, risk identification ($\beta = 0.247$, $p = 0.005$), risk assessment ($\beta = 0.265$, $p = 0.012$), risk response ($\beta = 0.434$, $p = 0.001$), and risk monitoring and review ($\beta = 0.661$, $p = 0.000$) all had positive and statistically significant effects on operational efficiency. These findings indicate that strengthening these four components can substantially enhance the performance of commercial state corporations. The research concluded that institutionalizing comprehensive and well-structured risk management practices significantly improves operational efficiency. It recommended that commercial state corporations enhance proactive risk identification, invest in robust risk assessment tools, implement timely and inclusive risk response strategies, and prioritize continuous risk monitoring and review. Further the research recommended adoption of real-time tracking systems, regular audits, and structured feedback mechanisms to ensure adaptability and accountability. Future studies may expand the scope to include risk governance and culture, use mixed methods, or focus on comparative sectors for broader insights.

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God has guided me along this entire process, and for that I am incredibly thankful. I would like to frankly thank my valued supervisor, Dr. Caroline Ntara, a faculty member at SOB KCA University, for her mentorship and guidance. She provided me with insightful advice on how to work on my thesis and see it through to completion, as well as endless time and effort to ensure that my work was thorough. For their advice, I also thank Dr. Ndolo J. and Dr. Edward Owino, deans of KCA University's school of business.

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DEDICATION

This research dissertation is dedicated to my dear husband, Daniel Wokabi Mathenge, as well as our offsprings, namely Wanjiru Wokabi and Wambui Wokabi. They have continuously demonstrated an outstanding degree of support during my academic endeavors, providing priceless help and steadfast encouragement. Additionally, I dedicate this dissertation to my sister-in-law, Damaris Mathenge, a wonderful teacher and mentor who is a wise advocate for education and who has pushed me to pursue the post graduate studies.

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ABBREVIATIONS AND ACRONYMS

AI	Artificial Intelligence
ANOVA	Analysis of Variance
CLRM	Classical Linear Regression Model
COSO	Committee of Sponsoring Organizations
ERM	Enterprise Risk Management
FRC	Financial Reporting Council
IRM	Institute of Risk Management
ISO	International Organization for Standardization
KPA	Kenya Ports Authority
KRA	Kenya Revenue Authority
NACOSTI	National Commission for Science, Technology, and Innovation
RBV	Resource Based View
SCAC	State Corporation Advisory Committee
SOEs	State Owned Enterprises
SPSS	Statistical Package for Social Sciences
SWOT	Strengths Weaknesses Opportunities and Threats
UK	United Kingdom
US	United States
VIF	Variance Inflation Factor
VRIN	Valuable rare inimitable and non-substitutional

DEFINITION OF TERMS

Institutional Risk Management Framework - Denotes a structured and systematic method that firms utilize in identifying, assessing, responding to, and monitoring risks that could impact their objectives (Anderson & Peterson, 2023).

Operational Efficiency - Refers to firm capacity of service and product delivering in the most efficient style without quality compromise (Smith et al., 2023)

Risk Assessment - Involves evaluating identified risks to establish their possibility of occurrence and probable effect. The step aid prioritizes risks by quantifying or qualitatively analyzing their severity and probability, enabling informed decision-making (Fraser & Simkins, 2021).

Risk Identification - It is the procedure of analytically distinguishing probable risks that might affect the objectives attainment of an organization's (Hopkin, 2021).

Risk Monitoring - It is the continuing procedure of identified risks tracking, evaluating the efficacy of risk responses, and detecting new risk (COSO, 2021).

Risk Response - Denotes to the policies and actions undertaken in addressing identified and assessed risks (Lam, 2021).

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

An institutional risk management framework is vital for enhancing efficiency in the public sector, as it systematically addresses uncertainties that can disrupt operations and resource allocation. Via identification, assessment, and risks mitigation, public institutions can ensure the continuity of essential services, minimize inefficiencies, and improve decision made (Mahama et al., 2022; Smith et al., 2023). This proactive approach to managing potential threats enhances accountability and fosters a culture of transparency, aligning organizational objectives with effective risk management strategies (Jones & Taylor, 2022). Furthermore, Castellini et al. (2024) argue robust frameworks support resilience by enabling public sector entities to adapt to evolving challenges and maintain operational performance under changing circumstances.

An institutional risk management framework serve a vital mandate in enhancing operational efficiency of commercial state corporations by helping to mitigate uncertainties that may threaten essential operations and the allocation of resources. By systematically identifying, assessing, and mitigating risks, these corporations can maintain the continuity of their services, optimize resource utilization, and improve decision-making processes (Jones & Taylor, 2022). This proactive management approach also fosters a culture of transparency and accountability, as per Smith et al. (2023) ensuring that organizational goals are effectively aligned with risk mitigation strategies. Such alignment contributes significantly to minimizing inefficiencies, reducing costs, and enhancing operational performance (Mahama et al., 2022).

Furthermore, institutionalizing a robust risk management framework enhances the adaptability and resilience of commercial state corporations. Castellini et al. (2024)

emphasize that these frameworks enable organizations to navigate complex environments, respond effectively to emerging challenges, and sustain operational efficiency under changing circumstances. Similarly, Brown and Kurey (2024) highlight that risk management practices foster a proactive approach to uncertainty, allowing corporations to anticipate and mitigate potential disruptions before they escalate. Additionally, Kimani et al. (2024) argue that effective risk frameworks bolster compliance with regulatory standards, improve stakeholder confidence, and safeguard organizational assets. By integrating risk management into operational planning, state corporations can achieve sustainable efficiency and long-term resilience, positioning themselves to meet their strategic objectives effectively.

Globally, in the United States, institutional risk management frameworks are well-established and widely adopted, particularly in the financial and public sectors. The COSO framework offer a benchmark for implementing effective enterprise risk management, emphasizing internal controls and strategic alignment (Anderson & Peterson, 2023). According to Brown and Richards (2024), U.S. corporations integrate technology-driven solutions such as predictive analytics and AI to enhance their risk assessment capabilities. Similarly, Taylor et al. (2023) highlight that a robust regulatory environment, including the Sarbanes-Oxley Act, ensures compliance and strengthens organizational resilience in managing risks.

China's institutional risk management is characterized by strong governmental oversight and a centralized approach. Zhao and Lin (2024) note that the Chinese government mandates comprehensive risk management for state-owned enterprises (SOEs) to align them with national economic goals. Additionally, Chen and Zhang (2023) emphasize that China’s focus on integrating digital platforms into risk management

enhances the ability of organizations to monitor and mitigate potential threats effectively. Li et al. (2022) highlights that state-backed initiatives like the "Digital Silk Road" include risk frameworks that ensure seamless operations in China's international ventures.

United Kingdom has a mature risk management landscape, with frameworks such as the UK Corporate Governance Code guiding corporate risk practices (Taylor & Green, 2022). The Financial Reporting Council (FRC) oversees compliance, ensuring that organizations maintain effective risk management and internal control systems (Johnson et al., 2023). Post-Brexit, increased emphasis on aligning risk management practices is eminent with global standards to maintain competitiveness (Evans, 2024).

Regionally, in Egypt, risk management is gaining traction, particularly in sectors such as banking and infrastructure. According to El-Sayed and Hassan (2023), regulatory bodies like the Central Bank of Egypt require financial institutions to establish dedicated risk management departments, improving operational transparency. Khalid and Moustafa (2022) observe that risk identification and capacity building are essential components in mitigating operational risks in large-scale public projects. Furthermore, Soliman and Naguib (2024) argue that international partnerships play a significant role in bolstering Egypt’s risk management capabilities, allowing for the adoption of global best practices.

Nigeria's institutional risk management is still evolving, with a growing focus on ERM in public and private firms. Adeyemi and Okafor (2023) emphasize the role of regulatory bodies like the Central Bank of Nigeria in setting guidelines for risk practices in financial institutions. Bello and Eze (2024) note that public-private partnerships help mitigate risks in critical sectors such as infrastructure and energy. Moreover, Oladipo and Adebayo (2022) highlight that enhancing risk monitoring systems through digital tools is key to fostering resilience in Nigerian organizations.

In Kenya, institutional risk management frameworks are being institutionalized across various sectors, especially in public service. Mwangi and Otieno (2023) point out that the Public Finance Management Act requires public entities to implement robust risk management systems, improving operational efficiency and accountability. According to Njoroge and Wambua (2024), integrating risk management into corporate governance has enhanced transparency and compliance within state agencies.

However, the implementation of these frameworks faces notable challenges, including inadequate risk culture, which limits the proactive identification and mitigation of risks. Kamau and Kariuki (2022) emphasize the importance of capacity building in empowering institutions to address dynamic operational challenges, but the lack of adequate resources and insufficient training undermines the effectiveness of these initiatives. Furthermore, many public entities lack proper monitoring and evaluation frameworks, making it difficult to track the performance and impact of risk management practices.

For Kenya's commercial state corporations, risk management frameworks serve imperative mandate in ensuring operational efficiency and sustainability. Otieno and Mugo (2023) highlight the Mwongozo Code of Governance, which mandates comprehensive risk management as part of corporate governance practices. While some corporations like Kenya Power and the Kenya Ports Authority have adopted strategic risk response measures to enhance resilience against market and operational risks (Kariuki & Wafula, 2024), inadequate top management support often hinders the full adoption and integration of these practices.

Additionally, Onyango and Mwema (2022) stress the importance of integrating digital transformation initiatives into risk monitoring systems to optimize performance and

safeguard assets; however, many corporations struggle with resource limitations and insufficient training for personnel, which curtails the effectiveness of these technologies. Addressing these gaps particularly inadequate risk culture and the lack of proper monitoring frameworks remains critical to improving the overall impact of risk management frameworks in commercial state corporations.

1.1.1 Institutional Risk Management Framework

Institutional risk management framework is a structured and systematic tactic intended to recognize, evaluate, mitigate, monitor, and review risks within an organization, ensuring the achievement of its objectives (Anderson & Peterson, 2023). This framework integrates policies, procedures, tools, and strategies into the corporation's inclusive governance, strategy, and operational processes, enabling proactive risk management and compliance with regulatory requirements (Taylor et al., 2023). By fostering a robust risk culture, it enhanced decision-making, resource allocation, and resilience, aligning organizational activities with strategic goals while mitigating potential disruptions (Zhao & Lin, 2024). Such frameworks are essential across various sectors for promoting operational efficiency and safeguarding organizational stability.

Risk identification is the foundational step in an institutional risk management framework, involving the systematic discovery and documentation of potential events which might negatively affect a firm capacity to actualize its goals. This procedure entails a systematic empathetic of internal and external environments to reveal sources of risk, such as operational inefficiencies, compliance issues, market fluctuations, or technological changes (Fraser & Simkins, 2021). Engaging stakeholders across various levels of the organization enhances the identification process by incorporating diverse perspectives and expertise (Hopkin, 2021). Effective risk identification guaranteed that all significant risks

are recognized early, allowing corporations to prepare and prioritize their management strategies accordingly.

Following identification, risk assessment involves analyzing risk identified to establish occurrence likelihood and probable firm impact. This step prioritizes risks by quantifying or qualitatively evaluating their severity, which aids in focusing resources on the most critical areas (Aven, 2021). Techniques such as risk matrices, scenario analysis, and probabilistic models are commonly used to assess risks (ISO, 2021). Accurate risk assessment was crucial for informed decision-making, enabling organizations to understand the extent of potential losses and the effectiveness of existing controls (Hillson & Murray-Webster, 2021).

Risk response entails developing and implementing strategies to curb the assessed risks on their priority basis and the organization's risk appetite. Possible responses comprise risk avoidance, reduction, transfer, or acceptance (Lam, 2021). For instance, an organization might mitigate risks by enhancing internal controls, outsource activities to transfer risk, purchase insurance, or accept certain risks if they fall within acceptable thresholds (Kaplan & Mikes, 2021). The chosen response aligned with the firm's strategic objectives and resources, ensuring that risk management efforts are both effective and economically feasible (Wang et al., 2022).

Risk monitoring is the gradual procedure of tracing of risks identified, assessing the efficacy of risk responses, and detecting new risks as the organization's environment evolves (KPMG International, 2022). Continuous monitoring allows organizations to adjust their risk management strategies in response to changes such as emerging threats, regulatory updates, or shifts in market conditions (IRM, 2021). Regular reporting and communication are integral to this process, facilitating transparency and enabling timely

decision-making at all organizational levels (COSO, 2021). Effective risk monitoring sustains the risk management cycle, ensuring resilience and sustained operational efficiency in the face of uncertainty.

1.1.2 Operational Efficiency

Operational efficiency denotes a firm's capacity of service and product delivering in the most economical style deprived of quality compromise. It encompasses enhancing processes, resources, and time to maximize output while minimizing input (Smith et al., 2023). By streamlining operations and leveraging technology, organizations can improve productivity and reduce waste, which are critical for achieving sustainable performance (Jones & Taylor, 2022). Operational efficiency is not only about cutting costs but also about enhancing value creation through effective resource utilization and process improvement (Brown, 2024).

Significance of operational efficiency lies in its direct impact on profitability and organizational resilience. Efficient operations enable cost savings, which increase profit margins, and guarantee the prompt shipment of superior goods or services, increasing client satisfaction (Johnson & Reed, 2023). Moreover, operational efficiency improves an organization's adaptability to changing market demands and economic conditions, helping to maintain competitive advantage (Taylor et al., 2023). Organizations with strong operational efficiency can allocate resources more strategically, ensuring long-term sustainability and stakeholder confidence (Anderson, 2024).

Key indicators of operational efficiency include productivity, which evaluates output relative to input; lead time, which measures the duration taken to complete a process or deliver a product; and waste reduction, which focuses on minimizing excess resources and inefficiencies (Zhao & Lin, 2024). In the current study, operational efficiency was

assessed using these three indicators: productivity, lead time, and waste reduction. These metrics provide a inclusive framework to gauge the operational performance of the commercial state corporations (Kariuki & Wafula, 2024).

1.1.3 Commercial State Corporations in Kenya

Commercial state corporations are institutions that operate with the dual objective of generating profits and delivering critical public services (Government of Kenya, 2022). These corporations are instrumental in driving economic development, fostering infrastructure growth, and providing employment opportunities across key sectors such as energy, transportation, and manufacturing (Mwangi & Wanjiru, 2022). Despite their pivotal role, many commercial state corporations face persistent challenges in implementing effective IRMFs. These challenges include inadequate risk culture, limited support from top management, insufficient resources, absence of risk management practices training, and an absence of robust monitoring and evaluation mechanisms (Mwangi & Otieno, 2023). Such gaps expose these corporations to operational inefficiencies, financial mismanagement, and an inability to adapt to dynamic economic and regulatory environments (Otieno & Mugo, 2023).

Conducting the current study on institutional risk management frameworks in the Kenyan commercial state corporations is meaningful, since the entities are indispensable in nationwide growth. Strengthening IRMFs addressed operational inefficiencies by fostering a robust risk culture, securing top management commitment, and optimizing resource utilization (Kamau & Wanjiru, 2022). Understanding how gaps such as inadequate training, insufficient resources, and weak monitoring frameworks impact operational efficiency will provide actionable insights for improving decision-making and enhancing resilience against uncertainties (Njoroge & Wambua, 2024). Moreover, the study's findings

informed recommendations to bridge these gaps, enabling commercial state corporations to achieve sustainable growth and fulfill their mandate more effectively, ultimately contributing to Kenya's economic stability and development (Otieno & Kariuki, 2023).

1.2 Statement of the Problem

In Kenya, commercial state corporations play a critical role in national development, contributing approximately 30% to the GDP through key sectors such as energy, transportation, manufacturing, and infrastructure (National Treasury, 2023). However, many of these entities continue to underperform due to deficiencies in institutional risk management frameworks (IRMFs). These include poor risk culture, limited top management support, underfunding of risk initiatives, lack of employee training, and weak monitoring and evaluation mechanisms. Mwangi and Wanjiru (2022) reported that 60% of commercial state corporations lack comprehensive risk management policies, contributing to operational disruptions and estimated annual financial losses of KES 2.8 billion. Kamau and Otieno (2021) further noted that 45% of these organizations experience delayed responses to emerging risks due to leadership inertia and minimal investment in risk governance. If left unresolved, these weaknesses could result in public resource wastage, stakeholder dissatisfaction, and performance failures that may necessitate government-led restructuring, such as the proposed merger of 42 commercial state corporations into 20 (Kenya Gazette Notice, 2023).

Despite increasing awareness of the importance of institutional risk management in enhancing performance, there is limited empirical research on the application and effectiveness of IRMFs in Kenya's commercial state corporations. Prior studies have either focused on broad governance issues or on non-commercial public bodies, leaving a contextual and empirical gap. Furthermore, existing literature does not comprehensively

assess how the four core components of IRMF risk identification, risk assessment, risk response, and risk monitoring interact to influence operational efficiency, particularly in the resource-constrained, politically exposed environment of commercial state corporations. The current research pursued to address the empirical gap by examining the collective impact of these components on productivity, lead time, and waste reduction. By doing so, it aimed to generate actionable insights to strengthen risk frameworks and enhance the performance and sustainability of these state-owned enterprises.

1.3 Objectives of the Study

The general of this research was to determine the influence of institutional risk management framework on the operational efficiency of commercial state corporations in Kenya.

The specific objectives were to:

i. To establish the influence of risk identification on the operational efficiency of commercial state corporations in Kenya.
ii. To establish the influence of risk assessment on the operational efficiency of commercial state corporations in Kenya.
iii. To establish the influence of risk response on the operational efficiency of commercial state corporations in Kenya.
iv. To examine the influence of risk monitoring and review on the operational efficiency of commercial state corporations in Kenya

1.4 Research Questions

The study addressed the following research questions:

1. How does risk identification influence the operational efficiency of commercial state corporations in Kenya?
2. What is the effect of risk assessment practices on the operational efficiency of commercial state corporations in Kenya?
3. How does risk response impact the operational efficiency of commercial state corporations in Kenya?
4. What is the influence of risk monitoring and evaluation mechanisms on the operational efficiency of commercial state corporations in Kenya?

1.5 Significance of the Study

The following beneficiaries will find the study important:

1.5.1 Policy Makers

This research is valuable to policymakers as it offers actionable intuitions into the critical gaps in IRMFs in Kenyan commercial state corporations. By identifying deficiencies such as inadequate risk culture, limited top management support, and insufficient monitoring mechanisms, the study equips policymakers with evidence-based endorsements for formulating and enforcing robust risk management regulations. These intuitions can aid the policy formulation that enhance accountability, resource allocation, and strategic decision-making within state corporations, ensuring alignment with national development goals. Ultimately, the study helps policymakers design frameworks that improve the operational efficiency and sustainability of public sector organizations, contributing to economic stability and growth.

1.5.2 Commercial State Corporations

This research is a valuable resource for understanding the role of comprehensive IRMFs in achieving operational efficiency. The findings will highlight how effective IRFMs can alleviate operational inefficiencies, reduce financial risks, and improve service delivery. Furthermore, addressing challenges such as inadequate training and resource constraints will enable these corporations to build resilience and enhance performance. By adopting the study's recommendations, commercial state corporations can streamline their processes, strengthen governance, and align their operations with best practices, ultimately improving their ability to fulfill their public service mandates effectively.

1.5.3 Researchers and Academicians

Scholars find this research as it bridges an empirical flaw in the literature on risk management frameworks within Kenyan commercial state corporations setting. The research contributes to the body of knowledge by examining the combined influence of IRMFs on operational efficiency, which has been underexplored in previous research. It provides a basis for further academic inquiry and comparative studies in other sectors and regions. Additionally, the findings can inform curriculum development and teaching in the risk management discipline, public administration, and organizational performance, enriching academic discourse and practical applications in these disciplines.

1.6 Scope of the Study

The scope of this study was to examine the effect of institutional risk management frameworks on the operational efficiency of commercial state corporations in Kenya. The research focused on four attributes of the risk management framework: risk identification, risk assessment, risk response, and risk monitoring. The dependent variable, operational efficiency, was measured using productivity, lead time, and waste reduction as key

indicators. The research population included all 54 Kenyan commercial state corporations, employing a census method owing to the population manageable size. The target respondents were heads of risk management or their equivalents in the commercial state corporations, given their critical role in implementing and overseeing risk management frameworks. The research adopted regression, correlation, and descriptive analysis to analyze the data using a descriptive survey research methodology. The research was undertaken from March to July 2025.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter reviews the empirical literature on studies that investigate institutional risk management frameworks effect on the operational efficiency of commercial state corporations. Furthermore, this chapter explores four theoretical perspectives; ERM Theory, RBV Theory, Contingency Theory, and Stakeholder Theory that provide the foundational framework for this study.

2.2 Theoretical Review

The theoretical review provides a foundation for guiding and supporting the study in addressing its core questions. It offers a structured framework that enables a comprehensive and holistic approach to the research. This research was anchored on four key theories: ERM Theory, RBV Theory, Contingency Theory, and Stakeholder Theory. The theories offer treasured intuitions into the affiliation between institutional risk management frameworks and operational efficiency, ensuring a well-rounded exploration of the research objectives.

2.2.1 Enterprise Risk Management Theory

Enterprise Risk Management (ERM) Theory posits that organizations should adopt a structured and enterprise-wide approach to managing risks, integrating risk processes into strategic planning and operational activities. Unlike traditional risk management, which addresses risks in isolated departments, ERM promotes a holistic framework that identifies, assesses, responds to, and monitors risks across all functions (Kaplan & Mikes, 2022). Scholars such as Lam (2021) emphasize that ERM fosters a proactive risk culture, where risk is not only mitigated but also leveraged for strategic advantage. This is echoed by

Smith et al. (2022), who highlight ERM's role in enhancing organizational resilience and agility through continuous evaluation and alignment of risk practices with corporate goals. While some critics caution against over-standardization (Power, 2021), emerging discourse recognizes the value of integrating technology and data-driven tools into ERM for predictive risk insights.

Despite its strengths, ERM theory has faced criticism for its broad scope, which can make practical implementation challenging. Critics argue that the theory often lacks specific guidelines on how organizations can integrate ERM into their daily operations effectively (Brown & Richards, 2022). Moreover, Aven and Zio (2023) point out that ERM may place excessive emphasis on compliance and reporting, sometimes neglecting the dynamic nature of emerging risks. Other like Wang et al. (2023), have emphasized the resource-intensive nature of ERM frameworks, which may limit their applicability in organizations with constrained budgets. For Kenyan commercial state corporations, these critiques suggest the need for tailored ERM approaches that consider resource limitations while maintaining alignment with organizational objectives.

ERM theory is pertinent to this research as it offers a structured framework for examining risk identification, assessment, response, and monitoring mandate in improving operational efficiency. By focusing on how commercial state corporations in Kenya can develop and implement comprehensive risk management practices, the study aligns with ERM principles to enhance operational performance, resilience, and sustainability. This alignment emphasizes the reputation of addressing the gaps in existing frameworks, such as inadequate risk culture and insufficient top management support, to ensure effective risk management in dynamic environments. ERM Theory is particularly relevant in framing how the four institutional risk management components risk identification, assessment,

response, and monitoring can collectively influence operational efficiency in commercial state corporations, making it a fitting lens to understand risk governance in Kenya's public enterprises

2.2.2 Resource Based View Theory

The Resource-Based View (RBV) Theory, initially proposed by Penrose (1959) and expanded by Barney (1991), asserts that a firm's sustained competitive advantage arises from the effective deployment of strategic resources that are valuable, rare, inimitable, and non-substitutable (VRIN). These internal resources—such as capabilities, knowledge, systems, and organizational culture—are considered the foundation of long-term performance. Barney emphasized that the mere possession of resources is insufficient unless they are strategically aligned and protected from imitation. Grant (2021) introduced a dynamic capability perspective, arguing that firms must continuously adapt and reconfigure their resource base to maintain relevance and competitiveness in volatile environments. In contrast, critics like Priem and Butler (2001) argue that RBV lacks specificity in identifying which resources truly yield sustained advantage and question its empirical testability. Recent discourse, including insights by Peteraf and Bergen (2022), stresses the role of leadership and strategic alignment in leveraging resources to respond to environmental shifts, thus highlighting the interplay between resource utility and strategic execution. Applied to this study, RBV offers a strong theoretical basis for analyzing how commercial state corporations in Kenya can leverage internal capabilities such as skilled personnel, governance structures, and risk management tools to enhance operational efficiency and institutional resilience amidst evolving public sector challenges.

While RBV offers valuable insights, it has been criticized for its inward focus, which often overlooks the influence of external factors on organizational performance.

Helfat and Martin (2022) argue that RBV lacks mechanisms to explain how firms can adapt their resources to dynamic environments, a gap that can limit its applicability in rapidly changing industries. Priem and Butler (2022) further critique the theory for providing limited control on how firms might advance resources that attain the VRIN measures. Additionally, Wang et al. (2023) note that RBV may underestimate the importance of external partnerships and market forces in enhancing organizational capabilities. For Kenyan commercial state corporations, these critiques highlight the need to complement internal resource optimization with strategies that incorporate external collaborations and adapt to market dynamics.

RBV remains integral to this research by providing a theoretical anchor for understanding how internal organizational resources particularly skills, infrastructure, and processes enhance operational efficiency in commercial state corporations. Specifically, the study's constructs such as organizational capacity building (skills development, training, and knowledge sharing) and strategic resource planning (internal planning and resource allocation) directly reflect the VRIN attributes posited by RBV. By emphasizing the need to cultivate and optimize these internal capabilities, the research aligns with RBV's assertion that strategic resource deployment underpins sustained performance. Thus, RBV supports the study's objective to examine how the strategic use of internal assets can improve productivity, reduce inefficiencies, and foster resilience within resource-constrained state corporations in Kenya.

2.2.3 Contingency Theory

Contingency Theory, introduced by Burns and Stalker (1961), posits that there is no universally optimal way to manage organizations; rather, the effectiveness of management strategies depends on the fit between internal structures and external conditions. Their

distinction between mechanistic (rigid, formalized) and organic (flexible, adaptive) systems laid the groundwork for understanding how environmental stability or turbulence necessitates different organizational approaches. Lawrence and Lorsch (2022) extended this argument by emphasizing the need for balancing internal integration and external adaptation to sustain performance, while Donaldson (2022) stressed continuous alignment between structural design and changing contingencies to optimize organizational effectiveness. In the context of commercial state corporations in Kenya, this theory is especially relevant given the dynamic regulatory, political, and economic environment in which they operate. The theory supports the study's focus on risk management dimensions such as risk identification, assessment, response, and monitoring by illustrating how tailoring these components to specific organizational contexts enhances operational efficiency.

Notwithstanding its significance, Contingency theory has faced criticism for its complexity and lack of prescriptive guidelines. Critics argue that while the theory identifies the need for alignment between organizational factors and contingencies, it provides limited practical advice on how to achieve this alignment (Child & McGrath, 2022). Furthermore, Schoonhoven and Burton (2023) point out that the theory's emphasis on contextual factors may lead to over-customization, making it challenging to implement consistent practices across similar organizations. Additionally, Wang et al. (2022) argue that Contingency Theory does not sufficiently address how organizations should prioritize conflicting contingencies, which is critical in dynamic and resource-constrained environments. For Kenyan commercial state corporations, these critiques suggest the importance of identifying key contingencies such as resource availability, leadership

support, and regulatory requirements to ensure effective implementation of risk management frameworks.

Contingency Theory was pertinent to this research as it offers a context for comprehending how the efficiency of institutional risk management frameworks depends on the alignment between organizational practices and environmental factors. By examining how components like risk identification, assessment, response, and monitoring are influenced by specific contingencies in Kenyan commercial state corporations, the study seeks to identify strategies that best fit the unique challenges of these organizations. This approach underscores the importance of addressing gaps such as inadequate resources, weak monitoring frameworks, and insufficient top management support to enhance operational efficiency.

2.2.4 Stakeholder Theory

Stakeholder Theory, introduced by Freeman (1984), advocates for organizational decision-making that accounts for the interests of all stakeholders not just shareholders by integrating the perspectives of employees, customers, suppliers, regulators, and communities. This inclusive approach reshapes traditional business practices to emphasize ethical responsibility and long-term value creation. Clarkson (1995) refined the theory by classifying stakeholders into primary (essential for organizational survival) and secondary (influential but not critical to day-to-day operations). Harrison et al. (2022) further emphasized the value of collaboration with stakeholders in fostering innovation, resilience, and improved performance. Davila (2024) also highlights the theory's application in human resource management, particularly in promoting ethical conduct and stakeholder trust. In the context of commercial state corporations in Kenya, Stakeholder Theory supports the integration of risk management practices such as stakeholder-informed risk identification

and inclusive monitoring frameworks by ensuring that risk responses consider the expectations and concerns of all involved parties. This alignment is crucial for enhancing transparency, accountability, and operational efficiency in public institutions.

Critics of Stakeholder Theory argue that it often lacks specificity and practical guidance for balancing the diverse and sometimes conflicting interests of stakeholders. Jensen (2022) points out that attempting to satisfy all stakeholders can lead to decision paralysis or diluted strategic focus. Mitchell et al. (2023) critique the theory for its potential to prioritize stakeholder demands over organizational objectives, which can undermine efficiency. Additionally, Wang et al. (2023) argue that Stakeholder Theory's broad scope may not adequately address how organizations should prioritize stakeholders in resource-constrained environments. For Kenyan commercial state corporations, these critiques highlight the importance of clearly identifying and managing key stakeholders, such as regulators, employees, and customers, to optimize the effectiveness of risk management frameworks.

Stakeholder Theory was relevant to this study as it provides a framework for understanding how engaging and managing stakeholder relationships can improve the operational efficiency of commercial state corporations in Kenya. By examining how institutional risk management frameworks incorporate the concerns and expectations of key stakeholders such as employees, regulators, and the public this research aimed to generate insights into enhancing organizational resilience, transparency, and performance. This alignment underscores the importance of addressing institutional gaps, including limited top management support and weak monitoring systems, to ensure that stakeholder interests are effectively integrated into risk identification, assessment, response, and monitoring practices.

2.3 Empirical Review

This segment reviews prior research performed by scholars on how institutional risk management frameworks specifically risk identification, risk assessment, risk response, and risk monitoring influence operational efficiency, examining studies at the global, regional, and local levels while identifying existing research gaps.

2.3.1 Risk Identification and Operational Efficiency

Ochieng and Wanjiru (2024) explored risk identification impact on the operational efficiency of Nairobi based NGOs. The study focused on identifying financial, operational, and strategic risks, using structured questionnaires to collect data from 45 senior managers in NGOs. The findings revealed that effective identification of financial and operational risks significantly enhanced efficiency, while strategic risk identification manifested reasonable though positive effect. Though, the research failed to consider risk identification practices in state corporations, offering a contextual gap that the current research pursues addressing in Kenyan commercial state corporations focus.

Adeyemi and Okafor (2023) explored risk identification role in boosting operational performance in state-owned enterprises in Nigeria. The study focused on risk mapping, stakeholder consultation, and monitoring tools as integral aspects of risk identification. Structured questionnaires aimed at risk managers were used to gather data from 40 state-owned businesses using a descriptive survey approach. Outcomes designated that risk mapping possessed most substantial effect on operational performance, tracked by stakeholder consultation, while monitoring tools had a moderate effect. The research failed to include productivity as an operational efficiency metric, producing a conceptual gap this research addressed.

Brown and Taylor (2023) examined the influence of risk identification on operational efficiency in public healthcare institutions in the United Kingdom. The research emphasized risk awareness, risk documentation, and employee engagement as key components of risk identification. Data was gathered from 40 state-owned businesses using a descriptive survey design by means of structured questionnaires directed at risk managers. The study found that risk awareness and documentation were significant predictors of operational efficiency, while employee engagement showed a moderate influence. However, the reliance on qualitative methods limited the statistical validation of the findings, highlighting a methodological gap that the current study addresses through the use of quantitative analysis.

Mutiso et al. (2023) scrutinized the affiliation amidst risk identification and the operational efficiency of Kenyan county governments. The research emphasized risk audits, scenario planning, and vulnerability analysis as critical components. Using a cross-sectional survey design, structured interviews with risk officers were used to gather information regarding 25 counties. Conclusion discovered a strong positive affiliation amidst risk audits and operational efficiency, while vulnerability analysis had a weaker correlation. However, the study did not account for lead time as a measure of efficiency, highlighting a gap that the current study aims to fill.

Chen and Zhao (2022) pursued risk identification practices impact on operational efficacy in tech-based startups in China. The research focused on real-time risk detection, employee training, and technological tools for risk identification. Using an online survey, data was collected from 80 startups. Findings showed that real-time risk detection and technological tools significantly influenced operational performance, while workers training had a moderate effect. Nevertheless, the research's conclusions were restricted to

the private sector, offering a gap that the current research fills by looking at Kenyan commercial state corporations.

2.3.2 Risk Assessment and Operational Efficiency

Hassan and El-Sayed (2024) pursued risk assessment practices impact on operational efficacy in Egyptian state-owned enterprises (SOEs). The study focused on root cause analysis, environmental risk mapping, and financial risk evaluation. Data was gathered from 40 SOEs using a mixed-methods approach, including surveys and interviews with top risk officers. Findings revealed that root cause analysis significantly improved operational workflows and reduced inefficiencies, while environmental risk mapping had a moderate though positive effect. Nevertheless, the research did not examine particular operational efficiency measures like waste reduction and productivity, creating a conceptual vacuum that the current study aims to close.

Mwangi and Kamau (2024) explored the influence of risk assessment on operational efficiency in transport firms in Kenya. The research analyzed components such as risk likelihood estimation, risk impact evaluation, and prioritization of critical risks. A quantitative survey design was used, with data collected from 60 transport firms through structured questionnaires. Findings revealed that firms employing detailed risk impact evaluations experienced significant improvements in lead time and resource utilization. However, the study focused exclusively on transport firms and did not explore the application of risk assessment in state corporations, offering a contextual gap that the present research sought addressing.

Ahmed and Ibrahim (2023) explored the role of risk assessment in enhancing performance in Sudanese public sector organizations. The study analyzed components such as structured risk workshops, SWOT analysis, and stakeholder engagement. Data from

thirty different entities was collected using a cross-sectional survey design. Findings showed that structured risk workshops were highly effective in identifying operational bottlenecks, leading to improved efficiency. However, the study did not consider key efficiency metrics such as lead time and waste reduction, creating a conceptual gap addressed in the current study.

Aliyu and Hassan (2023) assessed the role of risk assessment practices on operational efficiency in energy sector organizations in Nigeria. Key aspects investigated included quantitative risk scoring, scenario planning, and control effectiveness reviews. The research adopted a descriptive research design and targeted senior risk officers in 25 energy firms. Results indicated that quantitative risk scoring and scenario planning significantly enhanced waste reduction and resource allocation efficiency, while control effectiveness reviews had a moderate influence. The study, however, did not incorporate indicators such as productivity, forming a conceptual gap the current research addressed.

Kariuki and Otieno (2023) surveyed the affiliation amidst risk assessment practices and operational efficiency in Kenyan agriculture-based cooperatives. The research focused on tools such as vulnerability analysis, financial risk assessment, and environmental risk mapping. Data was collected from 50 cooperatives through structured interviews with risk officers. Findings indicated that vulnerability analysis contributed the most to operational efficiency by reducing operational delays, while financial risk assessment had a moderate effect. The research failed to explore state corporations, highlighting a gap that this research sought addressing.

2.3.3 Risk Response and Operational Efficiency

Abubakar and Sani (2024) assessed the role of risk response practices on operational performance in Nigerian government agencies. The study investigated key strategies such

as risk transfer, proactive mitigation, and incident response systems. Structured interviews involving risk officers were used to collect data from 30 government entities utilizing a cross-sectional survey methodology. Results indicated that proactive mitigation strategies had the highest impact on operational performance, particularly in reducing waste. The research did not, however, take customer satisfaction into account as a performance metric, which created a gap that this research addressed.

Ochieng and Njoroge (2024) analyzed the influence of risk response strategies on operational efficacy in Kenyan logistics firms. The research focus on contingency planning, risk avoidance, and response execution as critical components. Senior managers were the target of structured questionnaires used to gather data from 50 logistics companies. Conclusions discovered that contingency planning significantly reduced lead times and improved resource utilization, while response execution had a moderate effect on operational workflows. Nevertheless, the research failed to explore state corporations, creating a contextual gap addressed by the current research.

Odhiambo and Wekesa (2024) explored the effect of risk response mechanisms on operational efficiency in Kenyan county governments. The research emphasized risk prioritization, emergency response planning, and risk-sharing agreements. Data was collected from 40 counties using structured interviews with risk managers. Results displayed a strong positive affiliation between emergency response planning and operational efficiency, while risk-sharing agreements demonstrated moderate influence. The study did not incorporate productivity as a key efficiency metric, highlighting a gap addressed in the current research.

Okafor and Nnadi (2023) investigated the impact of risk response strategies on operational efficacy in Nigerian agricultural cooperatives. The research focus on financial

risk transfer, stakeholder engagement, and disaster recovery protocols. A descriptive research design was adopted, with data collected from 35 cooperatives through surveys targeting cooperative heads. Results revealed that financial risk transfer was the most effective strategy in enhancing operational resilience, while disaster recovery protocols had a moderate effect. State corporations were not examined in the investigation, though, which created a contextual gap that this research attempts to fill.

Zhang and Li (2023) assessed the role of risk response in improving operational efficiency in Chinese public utility companies. The study emphasized real-time incident response, risk mitigation strategies, and collaborative response frameworks. Data was gathered from 45 public utility companies through structured questionnaires. Findings indicated that real-time incident response significantly enhanced resource allocation efficiency, while collaborative frameworks had a moderate influence on lead time reduction. However, the study did not examine waste reduction as an efficiency metric, creating a gap addressed by this study.

2.3.4 Risk Monitoring and Review and Operational Efficiency

Ahmad and Yusuf (2024) investigated the role of risk monitoring mechanisms in enhancing operational efficiency in Malaysian manufacturing firms. The study analyzed components such as automated monitoring systems, risk compliance reviews, and performance evaluation frameworks. Senior operations managers were the target of structured questionnaires used to gather data from 50 companies. Conclusions discovered that automated monitoring systems had the highest impact on operational efficiency by improving lead times and minimizing waste. However, the study did not explore non-financial efficiency indicators such as client fulfilment, presenting a conceptual gap addressed by this research.

Mensah and Owusu (2024) assessed risk monitoring practices influence on operational efficiency in Ghanaian public institutions. The research focused on management reporting systems, real-time risk tracking, and periodic risk reviews. Data was collected from 30 public institutions through structured interviews targeting heads of risk management. Results showed that real-time risk tracking significantly enhanced operational efficiency by minimizing delays, while periodic risk reviews had a moderate influence. Nevertheless, the research failed to contemplate customer satisfaction as an operational efficiency metric, creating a conceptual gap which the present research sought to address.

Mutua and Kariuki (2024) explored the affiliation amidst risk monitoring and operational efficiency in Kenyan commercial state corporations. The study emphasized internal audits, risk dashboards, and compliance reviews. Senior managers were the target of structured questionnaires used to gather data from 40 state corporations. Results exhibited that internal audits were the most effective in improving operational efficiency by identifying bottlenecks, while compliance reviews showed moderate influence. However, the study did not incorporate waste reduction as a performance metric, offering a gap the current research addressed.

Kim and Park (2023) scrutinized the effect of risk monitoring and review frameworks on operational efficiency in South Korean technology-based public enterprises. The study examined the use of compliance monitoring tools, real-time analytics, and risk response dashboards. Data was gathered from 50 enterprises via surveys levelling top executives. Results discovered that compliance monitoring tools significantly improved resource allocation and reduced operational inefficiencies. This research fills a

contextual gap caused by the study's restriction to technology companies and lack of exploration of state-owned corporations in larger contexts.

Smith and Brown (2023) scrutinized the impact of risk monitoring and review mechanisms on operational efficiency in public utilities in the United Kingdom. The study focused on real-time monitoring systems, compliance audits, and periodic reviews. Data was composed from 35 public utilities via interviews and surveys with risk managers. Verdicts indicated that compliance audits significantly improved operational workflows by reducing downtime and enhancing resource utilization. But the research only looked at the public utility industry; it failed to look at state corporations, which created a gap that this research aimed addressing.

2.4 Summary of Literature Review and Research Gaps

The reviewed literature revealed consistent evidence that institutional risk management practices such as risk identification, assessment, response, and monitoring positively influence operational efficiency across varied sectors and countries. However, many of these studies were either conducted outside Kenya or focused on private entities, limiting their applicability to Kenya’s commercial state corporations. For example, research from Nigeria, China, Egypt, and the UK offered sector-specific insights that, while informative, did not account for the governance frameworks, political dynamics, and fiscal constraints unique to Kenyan parastatals. Even Kenyan studies often overlooked commercial state corporations, focusing instead on county governments, logistics firms, or cooperatives. This highlights a clear contextual and sectoral gap. The current study addresses this by focusing specifically on Kenyan commercial state corporations, aligning risk management dimensions with operational realities shaped by ongoing restructuring, public accountability demands, and limited resources thereby enhancing both the local relevance

and practical utility of institutional risk management strategies. Table 1 exhibits a summary of literature review and research gaps.

TABLE 2.1:

Summary of Literature Review and Research Gaps

Author(s) & Year	Context	Methodology	Key Findings	Identified Gaps
Ochieng & Wanjiru (2024)	NGOs in Nairobi, Kenya	Descriptive survey; 45 senior managers; questionnaires	Financial and operational risk identification enhanced efficiency	Contextual gap: no focus on state corporations
Adeyemi & Okafor (2023)	State-owned enterprises in Nigeria	Descriptive survey; 40 SOEs; structured questionnaires	Risk mapping most effective; stakeholder consultation moderate	Conceptual gap: did not assess productivity
Brown & Taylor (2023)	Public healthcare institutions in UK	Descriptive survey; 40 SOEs; structured questionnaires	Risk awareness and documentation predicted efficiency	Methodological gap: qualitative bias
Mutiso et al. (2023)	County governments in Kenya	Cross-sectional; interviews; 25 counties	Risk audits had strong positive effect	Gap: did not consider lead time
Chen & Zhao (2022)	Tech startups in China	Online survey; 80 startups	Real-time risk detection effective	Contextual gap: private sector only
Hassan & El-Sayed (2024)	State-owned enterprises in Egypt	Mixed-methods; 40 SOEs; surveys and interviews	Root cause analysis improved workflows	Conceptual gap: did not include waste reduction
Mwangi & Kamau (2024)	Transport firms in Kenya	Quantitative survey; 60 firms	Risk impact evaluations improved lead time	Contextual gap: not applied in state corporations
Ahmed & Ibrahim (2023)	Sudanese public organizations	Cross-sectional; 30 entities	Structured workshops reduced bottlenecks	Gap: missed lead time and waste metrics
Aliyu & Hassan (2023)	Energy firms in Nigeria	Descriptive; 25 firms; senior risk officers	Quantitative risk scoring enhanced efficiency	Gap: ignored productivity

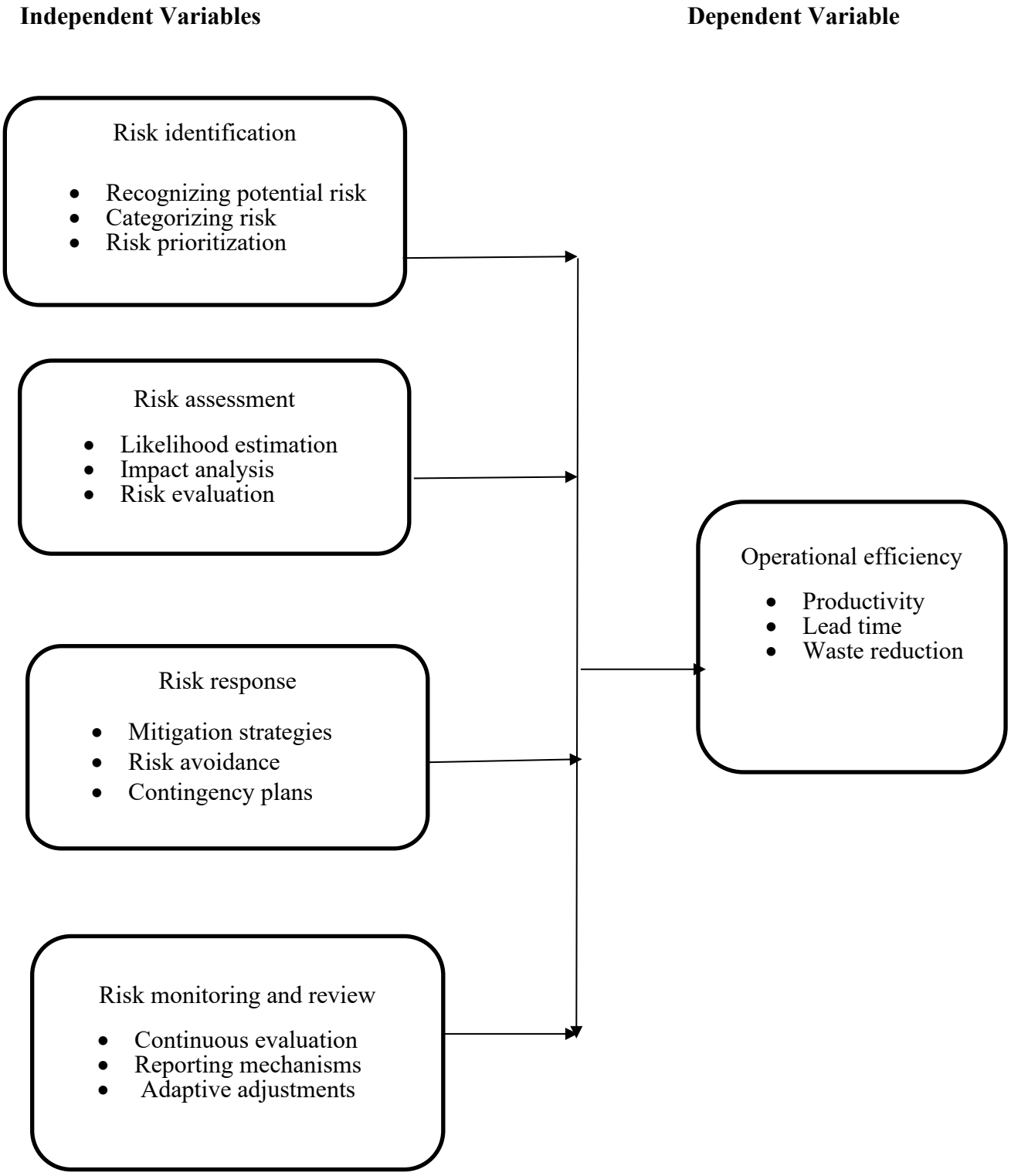
Author(s) & Year	Context	Methodology	Key Findings	Identified Gaps
Kariuki & Otieno (2023)	Agricultural cooperatives in Kenya	Structured interviews; 50 cooperatives	Vulnerability analysis reduced delays	Contextual gap: state corporations not covered
Abubakar & Sani (2024)	Nigerian government agencies	Cross-sectional; 30 agencies; interviews	Proactive mitigation reduced waste	Gap: customer satisfaction not measured
Ochieng & Njoroge (2024)	Kenyan logistics firms	Descriptive survey; 50 firms	Contingency planning reduced lead times	Contextual gap: state corporations omitted
Odhiambo & Wekesa (2024)	County governments in Kenya	Structured interviews; 40 counties	Emergency planning enhanced efficiency	Gap: no productivity measure used
Okafor & Nnadi (2023)	Nigerian agricultural cooperatives	Descriptive survey; 35 cooperatives	Financial risk transfer improved resilience	Contextual gap: no state corporations
Zhang & Li (2023)	Chinese public utility firms	Structured questionnaires; 45 firms	Real-time response improved resource use	Gap: waste reduction not assessed
Ahmad & Yusuf (2024)	Malaysian manufacturing firms	Structured questionnaires; 50 firms	Automated systems improved lead time, minimized waste	Gap: non-financial indicators not explored
Mensah & Owusu (2024)	Ghanaian public institutions	Structured interviews; 30 institutions	Real-time tracking minimized delays	Gap: customer satisfaction not assessed
Mutua & Kariuki (2024)	Kenyan state corporations	Structured questionnaires; 40 corporations	Internal audits improved efficiency	Gap: waste reduction not addressed
Kim & Park (2023)	South Korean tech enterprises	Surveys; 50 firms; top executives	Compliance monitoring improved resource allocation	Contextual gap: not extended to other SOEs
Smith & Brown (2023)	UK public utilities	Interviews and surveys; 35 firms	Compliance audits reduced downtime	Contextual gap: limited to utilities sector

2.5 Conceptual Framework

Conceptual framework illustrates the anticipated affiliation amidst the research variables. The independent variables risk identification, risk assessment, risk response, and risk monitoring represent key components of institutional risk management frameworks. These practices are expected to influence the dependent variable, operational efficiency, measured through productivity, lead time, and waste reduction. By examining these relationships, the research intends to offer intuitions into how effective risk management practices can enhance the operational performance of commercial state corporations in Kenya.

FIGURE 2.1:

Conceptual Framework



2.6 Operationalization of Variables

Operationalization refers to the process of converting abstract concepts into measurable data, enabling researchers to evaluate variables effectively. According to Saunders and Lewis (2022), operationalization involves defining how study variables are measured, observed, or quantified to ensure clarity and consistency in research. The measurements, detailed in Table 2.1, provide a clear framework for evaluating the research's variables.

TABLE 2.2:

Operationalization of Study Variable

Variables	Variable Type	Operational Indicators	Measurement Scale	Analysis Tools
Risk Identification	Independent	• Number of potential risks identified • Categories of risk • Frequency of risk identification exercises	5-point Likert Scale	Descriptive, regression and correlation analysis
Risk assessment	Independent	• Likelihood estimation of risks • Impact analysis reports • Use of prioritization matrices	5-point Likert Scale	Descriptive, regression and correlation analysis
Risk Response	Independent	• Implementation of mitigation strategies • Adoption of contingency plans • Frequency of risk avoidance actions	5-point Likert Scale	Descriptive, regression and correlation analysis
Risk Monitoring and review	Independent	• Use of real-time monitoring tools • Frequency of risk audits • Number of performance reviews conducted	5-point Likert Scale	Descriptive, regression and correlation analysis
Operational Efficiency	Dependent	• Productivity • Lead time • Waste reduction	5-point Likert Scale	Descriptive, regression and correlation analysis

Source: (Research 2025)

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter focuses on the research methodology that guides the research. It provides a detailed outline of the research design employed, the target population, and the sampling techniques utilized in selecting participants. Furthermore, the chapter describes the data collection instruments and procedures, highlighting the steps to ensure accurate and comprehensive data gathering. It also elaborates on the approaches of data analysis, results presentation, and the diagnostic tests to guarantee results reliability and validity. The ethical issues noted during the research process are discussed in the chapter's conclusion.

3.2 Research Design

Research design denotes comprehensive plan that summaries how a research will be done to attain its research aims (Creswell & Creswell, 2022). It ensures that the data obtained is pertinent, accurate, and satisfactory in addressing the exploration questions. This research adopted a descriptive research design, which was appropriate for investigating and analyzing the relationships among the variables being surveyed. Descriptive research enabled systematically designate and assess the characteristics, behaviors, and interconnections of the variables being examined (Neuman, 2022).

Descriptive research design adoption in this research was vindicated as it allowed for an in-depth examination of how risk identification, risk assessment, risk response, and risk monitoring influence the operational efficiency of commercial state corporations in Kenya. This approach provided a structured framework for collecting and analyzing data, ensuring the research objectives were met effectively.

3.3 Target Population

The population of a research denotes the complete group of persons, events, or elements that are the focus of the investigation (Kothari & Garg, 2022). A clearly defined population includes specific individuals, organizations, or items that are relevant to the research objectives (Sekaran & Bougie, 2022). For this study, the target population comprised all 54 Kenyan commercial state corporations (SCAC, 2024). These corporations were critical to the research as they provided the necessary context for examining the influence of institutional risk management frameworks on operational efficiency. Head of risk management or the comparable in every corporation was the target respondents, justified by their pivotal role in implementing and overseeing risk management frameworks

3.4 Sample Size and Sampling Procedure

Sample size denotes respondents or elements chosen from a population to be included in a research study, ensuring that the findings accurately represent the entire population (Kothari & Garg, 2022). Sampling procedure, on the contrary, is the method used to select these participants or elements, with the aim of achieving precision and reducing bias in the study outcomes (Sekaran & Bougie, 2022). This study adopted a census sampling procedure, including all 54 Kenyan commercial state corporations (SCAC, 2024). Head of risk management or the comparable in every corporation was the target respondents, justified by their pivotal role in implementing and overseeing risk management frameworks. A census approach was appropriate given the manageable population size, ensuring comprehensive data collection and representation of all relevant perspectives.

3.5 Research Instrument

A research instrument denotes the device or device utilized in collecting data in a systematic and structured manner for a research study (Creswell & Creswell, 2022). A structured

questionnaire was the primary research instrument, chosen for its cost-effectiveness, reliability, and suitability for gathering data from a large population within a limited timeframe. The questionnaire contained closed-ended questions, meant to ensure specific and straightforward responses, facilitating uniformity in data collecting and permitting easier analysis. This structured approach allowed for a comprehensive examination of the relationships between institutional risk management frameworks and operational efficiency.

The questionnaire was divided into three sections. Part A focused on general information and demographic data of the respondents, including details such as gender, age, educational background, and the number of years they have served in their respective commercial state corporations. Part B addressed the independent variables: risk identification, risk assessment, risk response, and risk monitoring. Part C concentrated on the dependent variable, operational efficiency, with indicators such as productivity, lead time, and waste reduction. This structured design ensured that all variables were adequately covered, providing a basis for comprehensive analysis.

The study employed a 5-point Likert scale in the questionnaire to capture respondent perceptions. Likert-type questions allowed for flexibility in responses and facilitate the measurement of attitudes and opinions. Respondents rated their agreement with various statements on a scale ranging from "strongly disagree" to "strongly agree," with the following ratings: 5 for "strongly agree," 4 for "agree," 3 for "neutral," 2 for "disagree," and 1 for "strongly disagree." This rating system ensured that in-depth insights were captured, contributing to the reliability and depth of the study findings.

3.6 Pilot Study

Ensuring the accuracy and research instrument relevance is essential for obtaining reliable and valid results. This research performed a pilot test involving 10% of the target population, which translated to six commercial state corporations in Kenya. The head of risk management or their equivalent in these corporations participated in the pilot study. The questionnaire was distributed to these respondents to gather feedback on its clarity, relevance, and structure, as well as suggestions for improvement. Based on their input, necessary adjustments were made to boost the instrument's consistency and reliability.

3.7 Validity and Reliability of Research Instrument

3.7.1 Validity of Research Instrument

Instrument validity denotes ability to correctly measure the concept it is designed to assess (Creswell & Creswell, 2022). Construct validity ensured guaranteed that variables' operational definitions matched their theoretical interpretations. Construct validity was established by adapting and refining an existing questionnaire from previous research to align with the study's objectives and variables. Through expert review, the supervisor and subject matter experts in institutional risk management assessed the questionnaire to ensure content validity. Their input made sure that the theoretical dimensions matched the anticipated constructions and that the instrument fully addressed all pertinent variables. Additionally, a thorough analysis of the investigation verified that the questionnaire continued to align with the research objectives and theoretical framework of the research.

3.7.2 Reliability of Research Instrument

The degree to which a research tool reliably yields consistent, consistent, and comparable results under the same circumstances is known as reliability (Creswell & Creswell, 2022).

Cronbach's Alpha analysis was employed in this research to evaluate the questionnaire's reliability, guaranteeing its accuracy and consistency in measuring the relevant variables. A well-known technique for assessing a research tool's internal consistency is Cronbach's Alpha, which offers a reliable metric even if some components are changed or replaced (Sekaran & Bougie, 2022). Reliability coefficients above 0.8 are rated as excellent, while those between 0.7 and 0.8 are deemed acceptable. In order to verify the questionnaire's appropriateness for gathering consistent and trustworthy data, its reliability was assessed in relation to these thresholds.

3.8 Data Collection Procedure

Data collection is the course of obtaining data to provide insights into a specific situation and address the study's research questions (Creswell & Creswell, 2022). Approval for data collection was sought from relevant authorities, including the SCAC and the management of each commercial state corporation in Kenya. The questionnaire, designed to capture the study's variables, was distributed electronically through Google Forms to the head of risk management or their equivalent in each corporation, as they were well-positioned to provide relevant insights. Follow-ups were conducted via email and phone calls to ensure a high response rate. Ethical considerations, such as obtaining informed consensus and upholding respondent secrecy, were sternly pragmatic through the data gathering process.

3.9 Data Processing and Analysis

Data analysis entails transforming raw data into an organized and interpretable format aligned with the study objectives (Creswell & Creswell, 2022). According to Kothari and Garg (2022), it involves systematic operations to summarize, classify, and interpret collected data to draw meaningful conclusions. The completed questionnaires were checked for completeness and consistency. Subsequently, the responses were sorted, coded,

and scored for ease of analysis.

Descriptive statistics such as means and standard deviations were used to summarize central tendencies and variations in responses. The research questions were changed to hypothesis in the analysis phase adopted a hypothesis-testing approach to enable statistical validation of the relationships among variables. Inferential statistics, including correlation and multiple regression analysis, were employed to assess the relationships between institutional risk management practices and operational efficiency. Regression analysis was justified as the study aimed to examine causal relationships between independent and dependent variables. The analysis was conducted using SPSS, and diagnostic tests were performed to validate regression assumptions: normality (Shapiro–Wilk test), linearity (scatterplots and residual plots), multicollinearity (Variance Inflation Factor), homoscedasticity (Breusch–Pagan test), and autocorrelation (Durbin–Watson statistic). The analyzed results were presented using tables and graphs for clarity and interpretability. The regression model below was used:

$$\mathbf{Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon}$$

Where: Y = Operational efficiency

α =y regression intercept.

β_1, β_2, β_3, β_4= Model coefficients

X_1 = Risk identification

X_2= Risk assessment

X_3= Risk response

X_4= Risk monitoring and review

ε =error term

TABLE 3.1:

Summary of Regression Analysis

Objective	Hypothesis	Analytical Model	Hypothesis Test
Objective 1: To determine the influence of risk identification on the operational efficiency of commercial state corporations in Kenya.	**Hypothesis 1:** Risk identification has no significant effect on the operational efficiency of commercial state corporations in Kenya.	$Y = \beta_0 + \beta_1 P_1 + \varepsilon$ Where: Y= Operational efficiency β_0= intercept β_1 = Coefficient for P_1 P_1= Risk identification ε = Error term	If the P-Value is $\leq$ 0.05, H_{01} is rejected and H_1 is accepted.
Objective 2: To establish the influence of risk assessment on the operational efficiency of commercial state corporations in Kenya.	**Hypothesis 2:** Risk assessment has no significant effect on the operational efficiency of commercial state corporations in Kenya.	$Y = \beta_0 + \beta_2 P_2 + \varepsilon$ Where: Y= Operational efficiency β_0= intercept β_2 = Coefficient for P_2 P_2= Risk assessment	If the P-Value is $\leq$ 0.05, H_{02} is rejected and H_2 is accepted.
Objective 3: To establish the influence of risk response on the operational efficiency of commercial state corporations in Kenya.	**Hypothesis 3:** Risk response has no significant effect on the operational efficiency of commercial state corporations in Kenya.	$Y = \beta_0 + \beta_3 P_3 + \varepsilon$ Where: Y= Operational efficiency β_0= intercept β_3 = Coefficient for P_3 P_3= Risk response ε = Error term	If the P-Value is $\leq$ 0.05, H_{03} is rejected and H_3 is accepted.
Objective 4: To examine the influence of risk monitoring and review on the operational efficiency of commercial state corporations in Kenya.	**Hypothesis 4:** Risk monitoring and review has no significant effect on the operational efficiency of commercial state corporations in Kenya.	$Y = \beta_0 + \beta_4 P_4 + \varepsilon$ Where: Y= Operational efficiency β_0= intercept β_4 = Coefficient for P_4 P_4 = Risk monitoring and review ε = Error term	If the P-Value is $\leq$ 0.05, H_{04} is rejected and H_4 is accepted.

Source: Research 2025

3.9.1 Analysis of Variance

ANOVA is extensively used statistical method for probing whether there are significant differences between three or more groups mean in relation to a dependent variable. Recent studies have demonstrated its effectiveness in exploring relationships between organizational practices and performance. For instance, Hassan and Suleiman (2022) used ANOVA to pursue strategic leadership practices impact on the operational performance of manufacturing firms in Nigeria, finding significant differences among groups based on leadership strategies. Similarly, Kim and Park (2023) applied ANOVA to assess digital transformation initiatives impact on the performance of public enterprises in South Korea, highlighting distinct performance outcomes based on varying levels of digital adoption.

This study employed ANOVA to determine whether significant differences exist in operational efficiency across commercial state corporations in Kenya, based on their implementation of institutional risk management frameworks. ANOVA was particularly suited for this analysis as it allowed comparisons among multiple groups, offering deeper insights into the associations amid independent variables such as risk identification, risk assessment, risk response, risk monitoring and the dependent variable, operational efficiency. Unlike the t-test, which is limited to comparing two groups, ANOVA provides a robust framework for analyzing connections among three or more groups, making it ideal for this research.

3.9.2 Correlation Analysis

Correlation analysis is a arithmetic method utilized in assessing strength and direction of the affiliation amidst two or more variables. In this study, correlation analysis was utilized to examine the linking between institutional risk management frameworks and operational efficiency in commercial state corporations in Kenya. Specifically, this technique helped

assess the linear association between the independent variables and the dependent variable. The analysis aimed to uncover significant correlations and provide insights into the nature and strength of these relationships.

The correlation coefficient, denoted as "r," quantifies the notch of linear connotation, ranging from -1 to +1. A value of +1 designates a perfect positive correlation, meaning an increase in one variable corresponds to an increase in the other, while -1 infers a perfect negative link, where an increase in one variable corresponds to a decrease in the other. A 0 value infers no association between the variables. By leveraging correlation analysis, the study sought to illuminate the extent and direction of the relationship between institutional risk management practices and operational efficiency, offering valuable insights for decision-making and strategic interventions.

3.10 Diagnostic Tests

Diagnostic tests are necessary before regression analysis to make sure that the traditional linear regression model's presumptions are maintained. Violating these assumptions can result in biased, inconsistent, and unreliable estimates, compromising the accuracy of the analysis. Diagnostic tests are conducted to validate the regression model's appropriateness, confirming that it aligns with the required statistical principles. These tests safeguard the integrity of the results, ensuring they are accurate and meaningful. By addressing potential violations, diagnostic tests enhance the reliability of the conclusions drawn from the analysis and avert deceptive interpretations.

3.10.1 Normality Test

The Shapiro-Wilk and Kolmogorov-Smirnov tests were used to check whether the residuals were normally distributed. A p-value greater than 0.05 in these tests indicated that the data met the normality assumption.

3.10.2 Multicollinearity Test

Multicollinearity was assessed using Variance Inflation Factors (VIF) (Cooper & Schindler, 2018). The reliability of statistical estimates can be impacted by ignoring multicollinearity, which can result in inflated standard errors and unknown regression coefficients. Consequently, this affects how accurately judgments about accepting or rejecting the null hypothesis are made. The estimate process is influenced by the degree of multicollinearity; a VIF greater than 10 indicates significant multicollinearity, necessitating remedial action to maintain the regression model's validity.

3.10.3 Heteroscedasticity

To guarantee that the Classical Linear Regression Model's (CLRM) underlying assumptions are maintained, heteroskedasticity needs to be recognized and dealt with. The CLRM makes the assumption that the variance of the error term is constant, which is known as homoscedasticity. Heteroskedasticity, on the other hand, occurs when the error term's variance varies between observations. Heteroskedasticity may cause unreliable hypothesis testing because it distorts the standard errors but does not affect the coefficient estimates. As suggested by Khan (2018), the Breusch-Pagan / Cook-Weisberg test was used in this study to assess heteroskedasticity. For this test, the null hypothesis was that the error variance was homoscedastic. Reliability and validity of the regression results were guaranteed by addressing heteroskedasticity.

3.11 Legal and Ethical Considerations

This study was conducted in strict adherence to recognized legal and ethical values governing academic research in Kenya. The researcher received a research permission authorization from the National Commission for Science, Technology, and Innovation (NACOSTI) and ethical approval from the University of Nairobi before beginning data

collection. Formal permission was also sought from the administration of the targeted commercial state corporations to gain access to their facilities and personnel. The study followed a scientifically sound research design that ensured methodological rigor, credibility, and integrity in the collection, analysis, and interpretation of data.

Participants were recruited voluntarily, and the principle of informed consent was observed. Respondents were issued with a consensus form clearly stating the research purpose, participation voluntary nature, the freedom to leave at any moment and guarantees that their participation would not result in any negative consequences. To protect their confidentiality and privacy, all data collected was anonymized and securely stored, accessible only to the researcher and used strictly for academic purposes. Care was taken to avoid any form of coercion or undue influence during participation. In recognition of community considerations, the findings of the study were shared with relevant stakeholders, including participating institutions, as a way of contributing to organizational learning and policy development.

CHAPTER FOUR
RESULTS AND DISCUSSION

4.1 Introduction

This chapter offers the results of the analysis conducted to examine the effect of institutional risk management frameworks on the operational efficiency of commercial state corporations in Kenya. The findings are structured around the research precise objectives. The chapter commences with the response rate, followed by the demographic characteristics of respondents. Thereafter, it presents descriptive statistics, diagnostic test results, correlation analysis, and regression analysis. The final section provides a discussion of the results relative to existing empirical literature.

4.2 Response Rate

This section presents the response rate obtained from the data collection process. A total of 54 questionnaires were issued to the heads of risk management or their equivalents in commercial state corporations, and 48 were successfully completed and returned.

TABLE 4.1:

Response Rate

Response Rate	Frequency	Percent
Returned	48	88.9
Unreturned	6	11.1
Total	**54**	**100**

As shown in Table 4.1, the study achieved a response rate of 88.9%, with 48 out of 54 targeted respondents returning duly filled questionnaires. Only 6 questionnaires were not returned, representing 11.1% of the total. Babbie (2021) claim a 70% and above response rate is deemed excellent in survey research, as it provides confidence that the

findings are representative of the population. The high response rate in this study enhances the credibility and reliability of the results. It also suggests that the respondents had sufficient interest in the subject matter and were likely well-informed, given their positions as heads of risk management or their equivalents in the respective corporations. This strong participation rate minimizes the risk of non-response bias and ensures that the results can be generalized to the broader population of commercial state corporations in Kenya.

4.3 Demographic Characteristics

This segment exhibits the demographic outline of the respondents who participated in the research. Understanding the demographic characteristics is essential in evaluating the credibility and relevance of the responses, as these attributes may influence perceptions and implementation of institutional risk management frameworks. The analysis covers key aspects such as gender, age, education level, and years of service within the respective commercial state corporations.

4.3.1 Gender of the Respondents

The gender breakdown of the research participants' respondents is shown in Table 4.2.

TABLE 4.2:

Gender Distribution

Gender	Frequency	Percentage
Male	31	64.6
Female	17	35.4
Total	**48**	**100**

As shown, male was 64.6% of the respondents, whereas female were 35.4%. This indicates that risk management roles in commercial state corporations in Kenya are predominantly held by men. The gender imbalance may reflect broader structural trends

within public sector leadership and technical roles, where male dominance persists. Nonetheless, the participation of both genders ensures diverse perspectives are captured, which enhances the richness and inclusivity of the data. Understanding gender dynamics in these roles can also inform future policies aimed at promoting diversity and inclusivity in corporate risk management functions.

4.3.2 Age of the Respondents

Table 4.3 presents the age composition of those surveyed.

TABLE 4.3:

Respondents' Age Composition

Age	Frequency	Percentage
31-40 years	7	14.6
41-50 years	21	43.8
Above 50 years	20	41.6
Total	**48**	**100**

The findings indicate that 43.8% of the respondents were aged 41–50 years, followed closely by 41.6% who were above 50 years. Only 14.6% fell within the 31–40 years age bracket. This distribution suggests that most of the individuals occupying risk management roles in commercial state corporations are experienced professionals likely to possess extensive institutional knowledge and technical expertise. The dominance of older age groups may also reflect a preference for assigning strategic risk oversight roles to individuals with longer service and higher professional maturity. This has positive implications for the reliability of the data, as the responses are informed by practical experience and exposure to organizational risk management practices over time.

4.3.3 Highest Level of Education

The greatest level of education acquired by research participants is shown in Table 4.4.

TABLE 4.4:

Highest Level of Education

Education	Frequency	Percentage
Degree	23	47.9
Masters	23	47.9
PhD	2	4.2
Total	**48**	**100%**

The results show that 47.9% of the respondents held a master's degree, while an equal proportion (47.9%) held a bachelor's degree. Only 4.2% of the respondents had attained a PhD. This distribution suggests that the majority of individuals in risk management roles within commercial state corporations possess advanced academic qualifications, with nearly all holding at least a university degree. The strong academic background implies a high level of competence and technical knowledge, which enhances the quality and credibility of their input regarding institutional risk management practices. It also indicates the sector's recognition of the importance of specialized training in managing risk and ensuring operational efficiency.

4.3.4 Years of Experience in Current Position

The length of time respondents have worked for commercial state corporations in their current roles is shown in Table 4.5.

TABLE 4.5:

Years of Experience in Current Position

Number of years	Frequency	Percentage
0-1 years	2	4.1
2-3 years	7	14.6
4-5 years	7	14.6
Above 5 years	32	66.7
Total	**48**	**100%**

The results indicate that a majority, 66.7%, of those surveyed served in their current roles for period exceeding 5 years, while 14.6% had between 4–5 years of experience, and another 14.6% had 2–3 years of experience. Only 4.1% had served for less than one year. This distribution suggests that most risk management heads or their equivalents have substantial experience in their roles, which likely enhances their understanding of institutional processes, challenges, and best practices. The predominance of experienced professionals contributes to the validity of the data, as their responses are informed by sustained engagement with risk management frameworks and operational efficiency measures over time. It also implies institutional continuity and stability in risk oversight roles within commercial state corporations.

4.4 Descriptive Statistics

Descriptive data for the research variables risk identification, risk assessment, risk response, risk monitoring and review, and operational efficiency are shown in this subsection. Descriptive statistics help to summarize the central tendencies and dispersion of the data, offering a clear overview of how respondents rated various aspects of institutional risk management frameworks and operational efficiency within commercial state corporations in Kenya. The key metrics reported are the mean and standard deviation,

which respectively indicate the average level of agreement and the variability in responses across the sample.

4.4.1 Risk Identification

Table 4.6 exhibits descriptive statistics on respondents' perceptions regarding risk identification practices and their influence on operational efficiency in commercial state corporations. The table reports the mean and standard deviation for six key statements relating to how organizations identify, assess, communicate, and monitor risks. These responses were measured using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

TABLE 4.6:

Descriptive Statistics for Risk Identification

Statements	N	Mean	Std. Dev
Identifying potential risks proactively enhances operational efficiency.	48	4.06	0.88
Assessing the likelihood and impact of risks improves decision-making.	48	4.02	0.78
Implementing mitigation strategies reduces disruptions in operations.	48	4.06	0.66
Regular risk monitoring ensures timely adjustments to operational plans.	48	4.08	0.84
Effective communication of risks enhances organizational performance.	48	3.94	0.63
Our organization utilizes real-time analytics to track operational risks.	48	2.92	1.13
Overall mean Score	**48**	**3.85**	**0.54**

The outcomes show that most respondents agreed with the positive influence of risk identification practices on operational efficiency. The statement "Regular risk monitoring

ensures timely adjustments to operational plans" had the highest mean score of 4.08 (SD = 0.84), indicating strong agreement on the role of continuous monitoring in enabling adaptive responses to emerging risks. Similarly, high mean scores were recorded for "Identifying potential risks proactively enhances operational efficiency" (M = 4.06, SD = 0.88) and "Implementing mitigation strategies reduces disruptions in operations" (M = 4.06, SD = 0.66), suggesting that early and structured identification and mitigation of risks are perceived to be effective in minimizing disruptions and improving efficiency.

Further, the statement "Assessing the likelihood and impact of risks improves decision-making" recorded a high mean of 4.02 (SD = 0.78), reflecting consensus among respondents that proper evaluation of identified risks informs strategic operational decisions. The statement "Effective communication of risks enhances organizational performance" also had a relatively strong mean of 3.94 (SD = 0.63), highlighting the importance of transparent and timely risk information sharing across departments. However, the item "Our organization utilizes real-time analytics to track operational risks" had a notably lower mean of 2.92 (SD = 1.13), indicating general disagreement or inconsistency in the adoption of advanced technologies such as real-time analytics for risk identification and tracking.

The 3.85 overall mean score for the risk identification construct with 0.54 standard deviation, signifying that on average, respondents agreed that risk identification practices are well embedded and contribute positively to operational efficiency. However, the relatively lower score for real-time analytics suggests a potential area for improvement, especially in leveraging technology for proactive risk management. The findings imply that while foundational elements of risk identification such as proactive detection, impact

assessment, and communication are well practiced, there is limited adoption of digital tools, which could enhance responsiveness and precision in risk monitoring.

4.4.2 Risk Assessment

Table 4.7 presents the descriptive statistics on respondents' views regarding risk assessment practices within commercial state corporations in Kenya. The analysis summarizes responses on how organizations assess the likelihood and impact of risks, the use of assessment tools, collaboration, and strategic alignment in risk evaluation processes. Responses were rated on a 5-point Likert scale, with higher mean scores indicating stronger agreement.

TABLE 4.7:

Descriptive Statistics for Risk Assessment

Statements	N	Mean	Std. Dev
Assessing the likelihood of risks helps prioritize mitigation strategies.	48	3.81	0.86
Evaluating the potential impact of risks improves resource allocation.	48	3.60	0.99
Conducting regular risk assessments enhances operational planning.	48	3.77	0.68
Risk assessment tools are effectively utilized in our organization.	48	3.25	0.80
Collaboration during risk assessment improves decision-making.	48	3.52	0.82
Risk assessment processes align with the organization's strategic goals.	48	4.15	0.65
Overall Mean Score	**48**	**3.68**	**0.59**

The highest-rated statement was "Risk assessment processes align with the organization's strategic goals," with a mean score of 4.15 (SD = 0.65), suggesting that

respondents strongly believe their risk assessment frameworks are purposefully designed to support broader organizational objectives. This alignment is essential in ensuring that risk assessment efforts are not conducted in isolation, but rather integrated into strategic planning and performance management. The statement "Assessing the likelihood of risks helps prioritize mitigation strategies" also received relatively high agreement (M = 3.81, SD = 0.86), affirming that evaluating the probability of risks plays a key role in decision prioritization and resource deployment.

Other aspects such as "Conducting regular risk assessments enhances operational planning" (M = 3.77, SD = 0.68) and "Evaluating the potential impact of risks improves resource allocation" (M = 3.60, SD = 0.99) also recorded moderate levels of agreement. These results indicate that most organizations recognize the importance of consistent and structured risk evaluations to guide daily operations and mitigate adverse outcomes. However, the statement "Collaboration during risk assessment improves decision-making" had a slightly lower mean of 3.52 (SD = 0.82), suggesting that while teamwork and cross-functional input are acknowledged, they may not be consistently institutionalized in the risk assessment process.

Notably, the lowest-rated statement was "Risk assessment tools are effectively utilized in our organization," with a mean score of 3.25 (SD = 0.80). This indicates limited or inconsistent use of formal tools and techniques for evaluating risks, which may hinder the objectivity and efficiency of risk prioritization efforts. The overall mean score for the risk assessment construct was 3.68 (SD = 0.59), reflecting moderate agreement that current practices contribute positively to operational efficiency. These findings suggest that while the conceptual understanding of risk assessment is well established and aligned with strategic goals, there are operational weaknesses in the consistent use of assessment tools

and collaboration mechanisms, pointing to areas where improvement and capacity-building would be beneficial.

4.4.3 Risk Response

Table 4.8 presents descriptive statistics on respondents' perceptions of risk response practices within commercial state corporations in Kenya. The items assess the effectiveness of mitigation strategies, contingency planning, stakeholder collaboration, risk transfer mechanisms, and outcome monitoring. Responses were rated on a 5-point Likert scale, with higher mean values indicating stronger agreement with each statement.

TABLE 4.8:

Descriptive Statistics for Risk Response

Statements	N	Mean	Std. Dev
Implementing mitigation strategies minimizes operational disruptions.	48	3.94	0.77
Our organization has effective contingency plans for managing risks.	48	3.56	0.73
Risk response actions are timely and aligned with organizational goals.	48	3.52	0.71
Collaborating with stakeholders enhances the effectiveness of risk response strategies.	48	3.60	0.95
Risk transfer mechanisms, such as insurance, are effectively utilized in our organization.	48	3.46	0.93
Monitoring the outcomes of risk response actions ensures continuous improvement.	48	3.79	0.79
Overall Mean Score	**48**	**3.65**	**0.51**

The statement "Implementing mitigation strategies minimizes operational disruptions" recorded the highest mean score of **3**.94 (SD = 0.77), indicating broad agreement among respondents that structured and proactive risk mitigation contributes significantly to maintaining uninterrupted operations. Similarly, the statement "Monitoring

the outcomes of risk response actions ensures continuous improvement" also scored relatively high (M = 3.79, SD = 0.79), suggesting that many organizations follow up on their risk interventions to evaluate effectiveness and adjust strategies as necessary. These findings emphasize the practical value of closing the loop in the risk response cycle through active implementation and review.

Moderate agreement was observed on several aspects, including the existence of effective contingency plans (M = 3.56, SD = 0.73), the role of stakeholder collaboration in enhancing risk responses (M = 3.60, SD = 0.95), and the timeliness and goal alignment of response actions (M = 3.52, SD = 0.71). These scores indicate that while many organizations acknowledge and apply foundational risk response practices, the consistency and robustness of these efforts may vary across institutions. For example, contingency plans may exist but may not be frequently updated or stress-tested, while collaboration may depend on departmental structures and leadership engagement.

The lowest-rated item was "Risk transfer mechanisms, such as insurance, are effectively utilized in our organization" (M = 3.46, SD = 0.93), implying that organizations may not be fully leveraging external instruments like insurance to offset risk. This may reflect budgetary constraints, limited awareness, or gaps in policy design. Overall, the mean score for the risk response construct was 3.65 (SD = 0.51), suggesting a generally positive but moderately implemented risk response culture. The results underscore the importance of reinforcing strategic risk mitigation practices, investing in formalized risk transfer mechanisms, and strengthening stakeholder coordination to enhance operational resilience.

4.4.4 Risk Monitoring and Review

Table 4.9 presents descriptive statistics on respondents' perceptions of risk monitoring and review practices within commercial state corporations. This section evaluates how

regularly organizations monitor risks, the tools and systems used, the role of compliance audits, and the extent to which feedback and reporting influence decision-making. Responses were measured on a 5-point Likert scale.

The highest-rated item was "Regular risk monitoring helps identify emerging threats to operations" with a mean of 4.17 (SD = 0.72), indicating strong agreement that consistent monitoring is effective in flagging potential operational disruptions. This finding emphasizes the importance of continuous vigilance in maintaining operational resilience and preempting risks before they escalate. Similarly, "Compliance audits are regularly conducted to assess risk management practices" scored a relatively high mean of 3.83 (SD = 0.80), suggesting that many corporations have instituted audit mechanisms to ensure adherence to risk management standards.

TABLE 4.9:

Descriptive Statistics for Risk Monitoring and Review

Statements	N	Mean	Std. Dev
Regular risk monitoring helps identify emerging threats to operations.	48	4.17	0.72
Our organization utilizes real-time tracking systems for risk management.	48	3.02	0.99
Periodic risk reviews enhance the effectiveness of mitigation strategies.	48	3.77	0.74
Compliance audits are regularly conducted to assess risk management practices.	48	3.83	0.80
Risk monitoring reports are effectively used in decision-making processes.	48	3.35	0.92
Feedback from risk reviews is used to improve operational efficiency.	48	3.35	0.78
Overall Mean Score	**48**	**3.58**	**0.60**

Moderate agreement was recorded for statements such as "Periodic risk reviews enhance the effectiveness of mitigation strategies" (M = 3.77, SD = 0.74) and "Feedback from risk reviews is used to improve operational efficiency" (M = 3.35, SD = 0.78). These results suggest that while organizations generally value regular reviews, the actual integration of feedback into operational strategies may be inconsistent or underutilized. Similarly, the use of "Risk monitoring reports in decision-making processes" also recorded a mean of 3.35 (SD = 0.92), reflecting some gaps in translating monitoring data into actionable strategic decisions.

The lowest-rated item was "Our organization utilizes real-time tracking systems for risk management" (M = 3.02, SD = 0.99), indicating limited or inconsistent application of advanced digital tools for real-time risk oversight. This points to a potential area for investment and capacity building. Overall, the mean score for the risk monitoring and review construct stood at 3.58 (SD = 0.60), suggesting that although the basic elements of risk monitoring are in place in most organizations, there is still room to enhance automation, real-time tracking, and the strategic use of risk data. Strengthening these areas could significantly improve responsiveness, compliance, and long-term operational efficiency.

4.4.5 Operational Efficiency

Table 4.10 presents descriptive statistics on respondents' views regarding the operational efficiency of commercial state corporations. The statements assessed key indicators such as productivity, lead time, process optimization, technological adoption, and waste reduction.

The highest-rated item was "The organization meets its productivity targets consistently," with a mean of 3.69 (SD = 0.55), suggesting that most respondents agreed their organizations generally meet set performance benchmarks. This was followed by

"Operational efficiency has improved due to streamlined processes and resource optimization" (M = 3.38, SD = 0.81), and "The organization adopts technology to shorten operational timelines" (M = 3.35, SD = 0.90), indicating a moderate level of consensus on the role of internal process improvements and technology in driving efficiency gains. These findings point to a gradual shift toward modernizing operations, although the moderate scores suggest room for further improvement in fully leveraging efficiency enablers.

TABLE 4.10:

Descriptive Statistics for Operational Efficiency

Statement	N	Mean	Std. Dev.
The organization meets its productivity targets consistently	48	3.69	0.55
Employees complete tasks within allocated timeframes	48	3.33	0.82
Operational efficiency has improved due to streamlined processes and resource optimization	48	3.38	0.81
Processes are optimized to reduce unnecessary delays.	48	3.23	1.05
Turnaround times for key operations have improved over the past year.	48	3.23	0.80
The organization adopts technology to shorten operational timelines.	48	3.35	0.90
The organization has effective strategies to minimize resource wastage.	48	3.29	0.71
Recycling initiatives and sustainable practices are in place.	48	2.58	0.76
Operational costs have decreased due to efficient resource utilization.	48	3.02	0.80
Average	**48**	**3.23**	**0.57**

Moderate responses were also observed for task completion within timeframes (M = 3.33, SD = 0.82), minimization of resource wastage (M = 3.29, SD = 0.71), and improvements in turnaround time for key operations (M = 3.23, SD = 0.80). Similarly, process optimization efforts recorded a mean of 3.23 (SD = 1.05). These responses reflect

a perception that while operational systems are somewhat structured, inefficiencies still exist. The wide standard deviations for some items also suggest variation in performance levels across different corporations. These variations could stem from differences in resource availability, technological capacity, and management effectiveness among the sampled organizations.

The lowest-rated items were "Operational costs have decreased due to efficient resource utilization" (M = 3.02, SD = 0.80) and "Recycling initiatives and sustainable practices are in place" (M = 2.58, SD = 0.76), indicating limited progress in achieving cost efficiency and sustainability targets. These findings reveal that while productivity and basic process improvements are relatively prioritized, there is a gap in environmental efficiency practices and systematic cost management. The overall mean score for the operational efficiency construct was 3.23 (SD = 0.57), reflecting a moderate level of agreement that operational efficiency has been achieved. These outcomes emphasize the necessity for a more unified tactic to performance improvement one that emphasizes cost control, technological integration, and sustainability alongside productivity.

4.5 Correlation Analysis

Correlation analysis was conducted to examine the strength and direction of the linear relationships between the independent variables (risk identification, risk assessment, risk response, and risk monitoring and review) and the dependent variable (operational efficiency). Pearson's correlation coefficient (r) was used, with significance tested at the 0.01 level (2-tailed). Table 4.11 summarizes the results.

The results indicate strong and statistically significant positive correlations between all four components of the institutional risk management framework and operational efficiency. The strongest correlation was observed between risk monitoring and review and

operational efficiency, Pearson correlation coefficient of 0.951 (p = 0.000). This infers a very strong linear relationship, indicating that improvements in risk monitoring practices are closely associated with enhancements in operational efficiency. This may reflect the importance of continuous evaluation, compliance checks, and adaptive adjustments in driving operational performance.

TABLE 4.11:

Correlation Results

		Operational Efficiency	Risk Identification	Risk Assessment	Risk Response	Risk Monitoring and Review
Operational Efficiency	Pearson Correlation	1				
	Sig. (2-tailed)					
Risk Identification	Pearson Correlation	.717**	1			
	Sig. (2-tailed)	.000				
Risk Assessment	Pearson Correlation	.933**	.537**	1		
	Sig. (2-tailed)	.000	.000			
Risk Response	Pearson Correlation	.566**	.618**	.417**	1	
	Sig. (2-tailed)	.000	.000	.000		
Risk Monitoring and Review	Pearson Correlation	.951**	.551**	.629**	.460**	1
	Sig. (2-tailed)	.000	.000	.000	.000	

**. Correlation is significant at the 0.01 level (2-tailed).
b. Listwise N=48

A similarly strong and significant correlation was found between risk assessment and operational efficiency, with a coefficient of 0.933 (p = 0.000). This implies that the more rigorous and strategic the risk assessment process is through tools such as likelihood estimation, impact analysis, and prioritization the more efficient the organization becomes in terms of productivity, process optimization, and waste reduction. Additionally, risk

identification exhibited a strong positive correlation of 0.717 (p = 0.000) with operational efficiency, underscoring the role of early detection and classification of risks in enhancing organizational responsiveness and decision-making.

The correlation between risk response and operational efficiency was moderately strong, at 0.566 (p = 0.000). While this is weaker than the other dimensions, it still indicates a significant and positive relationship. This result suggests that although risk response strategies (such as contingency planning and risk transfer) are important, their impact on operational efficiency may depend on how timely, coordinated, and consistently they are implemented.

4.6 Diagnostic Tests

Prior to conducting regression analysis, diagnostic tests were performed to ensure that the underlying assumptions of the CLRM were met. These tests are essential for validating the reliability, accuracy, and interpretability of the regression results. Specifically, the study tested for normality, multicollinearity, and heteroscedasticity. These diagnostic checks help detect potential violations such as non-normal residuals, high correlations among predictors, and unequal error variances, which could otherwise distort the regression estimates and compromise the validity of hypothesis testing.

4.6.1 Tests of Normality

The Shapiro-Wilk test was used to determine whether the data for each variable was normally distributed. This test assesses the null hypothesis that the data is regularly distributed and is suitable for small to moderate sample sizes. The variable does not substantially vary from normalcy if the p-value is greater than 0.05.

TABLE 4.12:

Test of Normality

	Shapiro-Wilk		
Study variables	Statistic	Df	Sig.
Risk Identification	0.829	48	0.173
Risk Assessment	0.874	48	0.180
Risk Response	0.880	48	0.192
Risk Monitoring and Review	0.898	48	0.203
Operational Efficiency	0.929	48	0.222

As presented in Table 4.12, all the study variables recorded p-values greater than 0.05, confirming that the assumption of normality holds for this dataset. Specifically, risk identification ($p = 0.173$), risk assessment ($p = 0.180$), risk response ($p = 0.192$), risk monitoring and review ($p = 0.203$), and operational efficiency ($p = 0.222$) all satisfied the normality condition. These results suggest that the residuals for each variable are approximately normally distributed, crucial requirement for carrying out trustworthy parametric studies like correlation and regression. Thus, the data is suitable for further inferential statistical testing.

4.6.2 Tests of Multicollinearity

Multicollinearity refers to a situation where two or more independent variables are highly correlated, potentially distorting the reliability of regression coefficients. To assess this, the Variance Inflation Factor (VIF) and Tolerance values were examined. According to Cooper and Schindler (2018), a VIF value above 10 or a Tolerance value below 0.1 indicates a serious multicollinearity problem, while VIF values below 5 are considered acceptable.

TABLE 4.13:

Test of Multicollinearity

Variable	VIF	Tolerance
Risk Identification	4.372	0.229
Risk Assessment	1.778	0.562
Risk Response	2.679	0.373
Risk Monitoring and Review	3.422	0.292
Mean VIF	3.063	

As shown in Table 4.13, all the VIF values for the independent variables were below the threshold of 5, ranging from 1.778 to 4.372, with a mean VIF of 3.063. Corresponding tolerance values were all well above 0.1, further confirming the absence of multicollinearity. Specifically, risk identification had the highest VIF at 4.372 (Tolerance = 0.229), while risk assessment had the lowest VIF at 1.778 (Tolerance = 0.562). These results suggest that while some moderate correlations exist among the predictors, they do not reach problematic levels that would compromise the validity or interpretation of the regression coefficients. Therefore, the independent variables are sufficiently distinct to be included in the same regression model.

4.6.3 Tests of Heteroscedasticity

Heteroscedasticity occurs when the variance of the error terms in a regression model is not constant, violating one of the core assumptions of CLRM. To test for this, the Breusch-Pagan/Cook-Weisberg test was applied. The null hypothesis of this test is that homoscedasticity (constant variance) exists, and a p-value greater than 0.05 indicates that the assumption of equal variance is not violated.

TABLE 4.14:

Test of Heteroscedasticity

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity		
chi2(1)	=	0.6211
Prob > chi2	=	0.4029

As shown in Table 4.14, the test yielded a chi-square value of 0.6211 with a p-value of 0.4029, which is greater than the 0.05 threshold. This suggests that the homoscedasticity null hypothesis cannot be disproved. As a result, the error variances remain consistent across observations, indicating that the data does not exhibit heteroscedasticity. This validates the suitability of the dataset for regression analysis and supports the reliability of hypothesis testing based on the regression model.

4.7 Regression Analysis

The results of the multiple linear regression analysis that was done to ascertain how the operational efficiency of Kenyan commercial state corporations was impacted by the elements of the institutional risk management framework are presented in this section. The regression model helps to assess both the individual and combined influence of the independent variables on the dependent variable. The findings are presented in three parts: model fitness, analysis of variance, and regression coefficients.

TABLE 4.15:

Model Fitness

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.970[a]	.941	.936	.227426

a. Predictors: (Constant), Risk Monitoring and Review, Risk Response, Risk Assessment, Risk Identification

Table 4.15 shows the overall fit of the regression model. The R value of 0.970 indicates a very strong positive correlation between the institutional risk management framework components and operational efficiency. The R Square value of 0.941 implies that 94.1% of the variance in operational efficiency is explained by the four independent variables: risk identification, risk assessment, risk response, and risk monitoring and review. The Adjusted R Square of 0.936 confirms that even after adjusting for the number of predictors in the model, the explanatory power remains high.

TABLE 4.16:

Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	35.693	4	8.923	172.520	.000[b]
	Residual	2.224	43	.052		
	Total	37.917	47			

a. Dependent Variable: Operational efficiency

b. Predictors: (Constant), Risk monitoring and review, Risk response, Risk assessment, Risk identification

Table 4.16 provides the ANOVA test results used to assess the overall significance of the regression model. The F-statistic is 172.520 with a p-value of 0.000, which is far below the conventional significance threshold of 0.05. This confirms that the overall regression model is statistically significant. In other words, the combination of the four independent variables significantly predicts operational efficiency in commercial state corporations. The results validate that at least one of the predictors meaningfully contributes to the model, justifying further interpretation of the individual coefficients.

TABLE 4.17:

Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.160	.315		3.682	.001
	Risk identification	.247	.084	.326	2.934	.005
	Risk assessment	.265	.101	.273	2.630	.012
	Risk response	.434	.118	.356	3.687	.001
	Risk monitoring and review	.661	.100	.687	6.587	.000

a. Dependent Variable: Operational Efficiency

Table 4.17 presents the individual contribution of each independent variable to the dependent variable, operational efficiency. The regression results revealed that all four components of the institutional risk management framework risk identification, risk assessment, risk response, and risk monitoring and review had a statistically significant and positive effect on operational efficiency. Among these, risk monitoring and review emerged as the most influential predictor, with a standardized coefficient ($\beta = 0.661$) and a highly significant p-value ($p < 0.001$). This finding suggests that regular risk tracking, compliance audits, and feedback mechanisms play a critical role in driving improvements in productivity, reducing delays, and minimizing waste in commercial state corporations. Organizations that consistently monitor risks and adapt their operations accordingly are better positioned to achieve efficiency gains and sustain operational resilience.

Risk response was the second strongest predictor, with $\beta = 0.434$ and $p = 0.001$, indicating that the presence of well-coordinated risk mitigation strategies and contingency plans significantly boosts operational outcomes. Similarly, risk assessment had a positive influence ($\beta = 0.265$, $p = 0.012$), implying that organizations that evaluate the likelihood and impact of risks are more capable of making informed operational decisions. Risk

identification, though the weakest of the four predictors, still showed a meaningful contribution (β = 0.247, p = 0.005), reinforcing the importance of proactively recognizing and categorizing risks at an early stage.

The resultant regression model:

$$\mathbf{Y = 1.160 + 0.247X_1 + 0.265X_2 + 0.434X_3 + 0.661X_4}$$

Where:

Y = Operational Efficiency,

X_1 – Risk Identification,

X_2 – Risk Assessment,

X_3 – Risk Response,

X_4 – Risk Monitoring and Review

4.8 Hypothesis Testing

With the use of multiple linear regressions, the hypotheses were evaluated. Results of multiple regression are shown in Table 4.17. The Ho is accepted if the p value is greater than 0.05 and rejected if it is less than 0.05, according the acceptance/rejection rule.

4.8.1 Risk Identification and Operational Efficiency

The first null hypothesis, H_{o1}: risk identification has no significant effect on the operational efficiency of commercial state corporations in Kenya. The outcomes presented in Table 4.17 indicate that the p-value was 0.005, below the 0.05 significance level. As a result, the null hypothesis is rejected, demonstrating that risk identification has a major impact on operational effectiveness in commercial state corporations. Specifically, risk identification was found to have a positive and significant effect on operational efficiency (β = 0.247, p

= 0.005). This advocates that structured and proactive risk identification practices are associated with improvements in productivity, lead time, and resource optimization.

These findings are consistent with earlier studies. For example, Ochieng and Wanjiru (2024) found that early identification of financial and operational risks improved efficiency outcomes in Nairobi-based NGOs. Adeyemi and Okafor (2023) also reported that risk identification components such as stakeholder consultation and risk mapping significantly influenced operational performance in Nigerian state-owned enterprises. Similar conclusions were drawn by Brown and Taylor (2023), who observed that clear documentation and heightened awareness of risk factors were critical in enhancing operational efficiency in UK public healthcare institutions. The consistency between this study's findings and previous literature affirms that proactive and structured risk identification practices are instrumental in avoiding disruptions, optimizing resource allocation, and improving service delivery.

From a theoretical standpoint, these results are strongly grounded in ERM Theory, which posits that risk identification is a foundational component in the risk management process. According to ERM principles, recognizing potential threats across the organization enables managers to take pre-emptive actions, thereby reducing uncertainty and improving operational performance. The positive influence of risk identification observed in this study validates this theoretical view, particularly in environments like Kenya's public sector, where unforeseen disruptions can have major cost implications.

Additionally, the findings align with the Contingency theory postulations, which advocates that institutional practices must adapt to specific internal and external conditions to be effective. In this case, the ability of state corporations to tailor their risk identification processes to their operational contexts by recognizing emerging threats, regulatory shifts,

or internal weaknesses improves their efficiency. The results also support the relevance of Stakeholder Theory, which underscores the value of incorporating stakeholder input in identifying operational risks. Engaging internal teams and external actors in risk identification not only improves openness and liability though too strengthens the organization's overall adaptability and responsiveness, contributing to operational excellence.

4.8.2 Risk Assessment and Operational Efficiency

The second null hypothesis, H_{02}, stated that: risk assessment has no significant effect on the operational efficiency of commercial state corporations in Kenya. The p-value was 0.012, which is below the 0.05 level of significance, according to the results shown in Table 4.17. As a result, the null hypothesis is rejected, demonstrating that risk assessment has a major impact on operational effectiveness in commercial state corporations. Specifically, the findings show that risk assessment has a positive and statistically significant effect on operational efficiency ($\beta = 0.265$, $p = 0.012$). This infers that evaluating the likelihood and impact of risks, and prioritizing them accordingly, plays a critical role in enhancing the efficiency and effectiveness of operations.

This finding aligns with several empirical studies reviewed in Chapter Two. For instance, Mwangi and Kamau (2024) found that organizations that applied risk assessment techniques such as impact evaluation and prioritization of critical risks experienced significant improvements in lead times and operational planning. Similarly, Aliyu and Hassan (2023) reported that quantitative risk scoring and scenario planning contributed to improved waste reduction and resource allocation in Nigeria’s energy sector organizations. The current study supports these earlier findings by demonstrating that Kenyan commercial state corporations benefit from risk assessment processes that are systematic and integrated

into their planning and resource management systems. It reinforces the value of regular risk evaluations in identifying bottlenecks and enabling evidence-based operational decisions.

From a theoretical perspective, the positive influence of risk assessment is well supported by the ERM Theory, which advocates for robust tactic to risk that includes comprehensive assessment of both internal and external threats. According to this theory, evaluating the likelihood and severity of risks equips organizations with the foresight to allocate resources efficiently and align mitigation efforts with strategic goals. The significant relationship between risk assessment and operational efficiency in this study affirms that these practices are not merely compliance activities but key enablers of institutional performance and resilience.

The findings also correspond with RBV Theory, which underscores the importance of leveraging internal capabilities such as analytical tools, managerial expertise, and structured assessment frameworks as strategic resources that can enhance organizational efficiency. In this context, risk assessment processes represent valuable and inimitable routines that strengthen a firm's ability to respond to environmental uncertainty. Additionally, the results are in line with Contingency Theory, which posits that no single management approach is universally effective; rather, organizations must adapt their strategies based on prevailing risks and conditions. Risk assessment enables such adaptability by continuously aligning operational strategies with evolving organizational threats, thereby enhancing efficiency.

4.8.3 Risk Response and Operational Efficiency

The third null hypothesis, H_{03}, stated that: risk response has no significant effect on the operational efficiency of commercial state corporations in Kenya. The results presented in Table 4.17 indicate 0.001 p-value, which is below the conventional significance threshold

of 0.05. As such, the null hypothesis was rejected, confirming that risk response has a statistically significant influence on operational efficiency. The regression results further reveal that risk response had a positive and substantial effect on operational efficiency ($\beta = 0.434$, $p = 0.001$). This infers that the implementation of effective mitigation strategies, contingency plans, and risk transfer mechanisms contributes meaningfully to improving the operational efficiency of state corporations.

This finding is consistent with prior research on the role of risk response in enhancing organizational performance. For instance, Karuri and Mugo (2023) found that financial institutions in Kenya that implemented robust risk response mechanisms such as insurance coverage, fallback systems, and staff training reported better turnaround times and reduced service interruptions. In another study, Chikafu and Ndlovu (2022) showed that public enterprises in Zimbabwe that emphasized early mitigation and collaborative response frameworks experienced fewer delays and higher productivity levels. These findings mirror the present study, which demonstrates that the success of commercial state corporations is closely tied to their ability to react decisively and appropriately to identified risks.

The observed effect of risk response is also well supported by ERM Theory, which holds that effective risk response is a core function of integrated risk management. ERM emphasizes selecting suitable strategies such as avoidance, reduction, transfer, or acceptance to align organizational risk exposure with performance goals. The strong influence of risk response on operational efficiency in this study supports the ERM proposition that performance improves when risks are not just identified or assessed, but when actionable responses are executed effectively and timely. This provides empirical

backing for the view that operational resilience depends on how institutions move from awareness to implementation.

Additionally, the results align with the Dynamic Capabilities Theory, which asserts that an organization's ability to respond to changing environments through timely adaptation of resources and processes is a key determinant of competitive advantage. In this case, risk response mechanisms such as contingency planning and stakeholder collaboration represent dynamic capabilities that allow public institutions to maintain continuity and operational focus during disruptions. The findings also resonate with Contingency Theory, which emphasizes the need for contextual responsiveness. Risk response strategies that are tailored to the type, severity, and timing of risks allow organizations to avoid operational paralysis and enhance service delivery. Thus, the study affirms that a responsive risk management culture is critical for operational efficiency.

4.8.4 Risk Monitoring and Review and Operational Efficiency

The fourth null hypothesis, H_{04}: risk monitoring and review has no significant effect on the operational efficiency of commercial state corporations in Kenya. Table 4.17 show 0.000 p-value, well below the 0.05 significance level. This leads to the rejection of the null hypothesis, indicating that risk monitoring and review significantly influence operational efficiency. The standardized beta coefficient was 0.661, showing a strong positive and statistically significant effect ($\beta = 0.661$, $p = 0.000$). This implies that consistent monitoring of risks, periodic reviews, and the use of feedback mechanisms substantially contribute to the enhancement of operational processes and efficiency in commercial state corporations.

These findings are supported by earlier empirical studies. For example, Wanyama and Otieno (2023) reported that public organizations in Kenya that carried out routine risk audits and used tracking tools experienced fewer process failures and reduced operational

delays. In South Africa, Mokoena and Ncube (2022) found that firms that embraced real-time risk monitoring and regular compliance assessments recorded higher levels of efficiency and improved resource utilization. Similarly, Ngure and Muturi (2024) noted that organizations that actively used risk review feedback to adjust operational strategies observed better performance metrics across departments. The current study corroborates these insights by showing that monitoring and review are not passive activities but crucial mechanisms for continuous improvement and adaptive decision-making.

The significant influence of risk monitoring and review aligns closely with ERM Theory, which emphasizes that risk processes should be cyclical and continuous. According to ERM, after identification, assessment, and response, organizations must regularly track risk developments and review outcomes to ensure effectiveness. The strong beta coefficient observed in this study supports the theoretical assertion that well-integrated monitoring frameworks provide early warning signals, promote accountability, and enhance responsiveness, all of which boost operational efficiency.

Moreover, the conclusions are concurred with Systems Theory, that postulates that organizational components must work together in feedback loops for sustained performance. In this regard, risk monitoring and review act as feedback mechanisms that enable state corporations to adjust processes based on real-time risk insights and historical trends. The study also finds support in Contingency Theory, which highlights the importance of flexible management structures. Through regular review and tracking, organizations can adjust operational strategies in line with emerging conditions. Hence, risk monitoring and review not only safeguard efficiency but also support adaptive resilience within Kenya's commercial state corporations.

CHAPTER FIVE
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter offers a synthesis of the key conclusions from the study, conclusions drawn from the results, and policy and managerial recommendations based on the empirical evidence. The chapter is organized into four key sections: a summary of major findings in line with the study objectives, conclusions derived from the tested hypotheses, recommendations to guide practice among commercial state corporations, and suggested areas for further research. The aim is to translate the study's empirical insights into actionable knowledge for enhancing operational efficiency through effective risk management.

5.2 Summary

This segment summarizes the significant conclusions of the research based on the four specific objectives that guided the research. The summary reflects how each aspect of risk management contributed to the operational efficiency of commercial state corporations in Kenya. The summary is derived from descriptive statistics, correlation analysis, and regression results, providing an integrated comprehending the affiliation amid institutional risk management practices and operational efficiency.

5.2.1 Risk Identification and Operational Efficiency

The study sought to determine the effect of risk identification on the operational efficiency of commercial state corporations in Kenya. Descriptive statistics revealed that respondents generally agreed that proactive identification of risks enhances operational efficiency, with a high overall mean score of 3.85. Statements such as "Identifying potential risks proactively enhances operational efficiency" and "Regular risk monitoring ensures timely

adjustments to operational plans" recorded strong agreement, suggesting that risk identification is deeply embedded in operational processes. However, the use of advanced tools like real-time analytics appeared less prevalent, indicating a possible area for improvement in digital risk tracking.

Inferential analysis provided robust support for the association amid risk identification and operational efficiency. Correlation analysis displayed a significant positive relationship ($r = 0.717$, $p < 0.01$), while regression results revealed that risk identification had a positive significant impact on operational efficiency ($\beta = 0.247$, $p = 0.005$). These results led to the rejection of the first null hypothesis, confirming that effective risk identification mechanisms contribute meaningfully to improved productivity, task execution, and resource utilization in state corporations. The findings highlight the importance of structured risk detection frameworks as a foundational element for efficient public sector operations.

5.2.2 Risk Assessment and Operational Efficiency

The second research objective was to assess the effect of risk assessment on the operational efficiency of commercial state corporations in Kenya. Descriptive statistics indicated a moderately high overall mean score of 3.68, suggesting that respondents acknowledged the reputation of assessing risk likelihood and impact. Respondents particularly agreed that aligning risk assessment with organizational goals and conducting regular assessments enhanced operational planning. However, there was relatively lower agreement on the effective utilization of risk assessment tools, highlighting a potential gap in the systematic application of analytical instruments for risk evaluation.

The inferential analysis affirmed a statistically significant positive relationship between risk assessment and operational efficiency. Correlation output exhibited a strong

positive association ($r = 0.933$, $p < 0.01$), and regression analysis confirmed that risk assessment had a significant effect on operational efficiency ($\beta = 0.265$, $p = 0.012$). Consequently, the study rejected the second null hypothesis. These findings suggest that commercial state corporations that actively assess risks and integrate these insights into resource allocation and strategic planning are more likely to experience efficiency gains. The results underscore the role of structured assessment processes in enhancing responsiveness, prioritization, and informed operational decisions.

5.2.3 Risk Response and Operational Efficiency

The third research objective aimed to examine the effect of risk response on the operational efficiency of commercial state corporations in Kenya. Descriptive statistics revealed a moderately high 3.65 overall mean score, signifying that utmost respondents approved their organizations had mechanisms in place to address risks effectively. The statement "Implementing mitigation strategies minimizes operational disruptions" recorded the highest agreement, while risk transfer mechanisms such as insurance received slightly lower ratings. This suggests that while core response strategies are in place, external risk transfer mechanisms may be underutilized in some corporations.

Inferential statistics confirmed that risk response had a positive and statistically significant influence on operational efficiency. Correlation results indicated a moderate yet significant relationship ($r = 0.566$, $p < 0.01$), while regression analysis showed a significant effect ($\beta = 0.434$, $p = 0.001$). Owing to these results the third null hypothesis was rejected. The results imply that organizations that promptly implement risk mitigation strategies, engage stakeholders in response planning, and continuously monitor the outcomes of these actions are more likely to experience enhanced efficiency. This underscores the need for

comprehensive and timely risk response mechanisms as a driver of operational resilience and performance.

5.2.4 Risk Monitoring and Review and Operational Efficiency

The fourth objective was to establish the effect of risk monitoring and review on the operational efficiency of commercial state corporations in Kenya. Descriptive statistics revealed a moderate overall mean score of 3.58, indicating that risk monitoring and review practices were generally embraced, though with some variation in implementation. Respondents strongly agreed that regular risk monitoring helps identify emerging threats (mean = 4.17) but showed lower agreement on the utilization of real-time tracking systems and feedback mechanisms, suggesting that while periodic reviews are conducted, opportunities remain to enhance the use of technology and feedback for continuous improvement.

Inferential results demonstrated that risk monitoring and review had the strongest statistical relationship with operational efficiency among all four risk management practices. The correlation coefficient was very high ($r = 0.951$, $p < 0.01$), and regression results showed a significant and strong positive effect ($\beta = 0.661$, $p = 0.000$). Consequently, the fourth null hypothesis being rejected. These findings suggest that organizations that consistently track risk indicators, conduct periodic audits, and utilize review outcomes for strategic adjustments are better positioned to optimize their operations. This highlights the critical role of feedback loops and monitoring frameworks in driving continuous improvement and operational excellence.

5.3 Conclusions

The following part presents the conclusions drawn from this research's results for every research objectives.

5.3.1 Risk Identification and Operational Efficiency

The research concluded that risk identification plays a critical role in enhancing operational efficiency within commercial state corporations in Kenya. The strong agreement by respondents on key risk identification practices such as proactive detection, risk likelihood assessment, and regular monitoring reflects a widespread recognition that early risk awareness is essential to minimizing disruptions. The significantly positive influence of risk identification on operational efficiency, as revealed by regression analysis, confirms that identifying potential threats in advance facilitates smoother workflows, informed planning, and better resource utilization.

The implication of these findings is that commercial state corporations that institutionalize structured risk identification frameworks are more likely to enhance their operational effectiveness. Early recognition of risks enables timely mitigation, reduces uncertainty, and enhances decision-making. Therefore, efforts to promote operational efficiency should prioritize building organizational capacities in systematic risk detection through training, policy formulation, and adoption of data-driven tools. Strengthening these processes not only reduces vulnerabilities but also supports performance stability across departments and functions. Policymakers should enforce risk management standards across public enterprises, while corporate boards should invest in training, integrate risk detection into strategy, and adopt digital tools for proactive risk monitoring. These steps will enhance institutional resilience and public value delivery.

5.3.2 Risk Assessment and Operational Efficiency

The research concludes risk assessment significantly contributes to operational efficiency in commercial state corporations in Kenya. The findings revealed that organizations that assess the likelihood and potential impact of risks are better positioned to allocate resources

effectively and align operations with strategic objectives. Despite some gaps in the application of risk assessment tools, the overall positive perceptions from respondents and the statistically significant regression results affirm that well-executed risk assessment practices enhance preparedness, promote informed decision-making, and support operational continuity.

The implication is that commercial state corporations must go beyond identifying risks and invest in rigorous and consistent evaluation of those risks. This includes leveraging structured methodologies and technological tools to quantify risk exposure and guide mitigation priorities. By embedding risk assessment into planning cycles and performance reviews, these institutions can better anticipate challenges, allocate resources optimally, and avoid costly disruptions. Ultimately, strong risk assessment practices serve as a foundation for operational resilience and strategic agility. Policymakers should develop regulatory frameworks mandating risk quantification, while corporate boards should ensure that risk evaluation informs strategy and budget decisions to build long-term resilience.

5.3.3 Risk Response and Operational Efficiency

The research concludes that risk response has a significant and positive effect on the operational efficiency of commercial state corporations in Kenya. The results demonstrated that organizations that implement mitigation strategies, establish contingency plans, and engage stakeholders in managing risks are better equipped to minimize operational disruptions. The statistically significant affiliation amid risk response and efficiency highlights the value of timely and structured interventions when risks materialize. While the use of risk transfer mechanisms like insurance was rated lower, the overall response strategies were shown to contribute meaningfully to performance outcomes.

The implication is that commercial state corporations must develop comprehensive risk response frameworks that are not only reactive but also proactive in nature. This includes equipping teams with clear escalation protocols, regularly updating contingency plans, and fostering collaboration among departments and stakeholders. Effective risk response enables institutions to recover swiftly from disruptions, maintain service delivery, and safeguard operational goals. Investing in robust risk response capabilities thus enhances institutional agility and long-term operational stability. Policymakers should promote standards for organizational preparedness, while corporate boards should prioritize investments in response training and system resilience to support long-term stability.

5.3.4 Risk Monitoring and Review and Operational Efficiency

The study concludes that risk monitoring and review exerts the strongest positive influence on operational efficiency among all the risk management practices examined. The regression results confirmed a highly significant relationship, indicating that regular tracking of risks, timely reviews, and effective use of monitoring reports are critical to optimizing organizational performance. While practices such as real-time tracking and feedback utilization showed moderate uptake, the overall positive responses reflect a growing institutional commitment to continuous improvement through risk monitoring.

The implication of this finding is that commercial state corporations must prioritize building comprehensive monitoring systems that provide real-time insights and foster accountability. This includes conducting periodic compliance audits, generating actionable risk reports, and ensuring that feedback from reviews informs future strategy. By embedding risk monitoring and review into daily operations and strategic planning, these institutions can respond more effectively to emerging risks, reduce inefficiencies, and

sustain high levels of operational performance. Policymakers should mandate risk monitoring standards, while boards should invest in systems and staff training to ensure continuous performance improvement and early detection of emerging threats.

5.4 Recommendations of the Study

Based on the findings that risk identification significantly influences operational efficiency, it is recommended that commercial state corporations strengthen their risk detection systems. This can be achieved by adopting structured risk identification frameworks, training staff on risk awareness, and leveraging technology to capture early warning signals. Institutions should promote a culture of proactive risk thinking at all organizational levels to ensure that potential disruptions are anticipated and addressed before they escalate into operational setbacks.

Given the significant effect of risk assessment on operational efficiency, commercial state corporations are encouraged to institutionalize rigorous risk evaluation processes. This includes using standardized tools and models to assess risk likelihood and impact, integrating risk analysis into strategic planning, and ensuring that risk prioritization guides resource allocation. Organizations should also conduct periodic risk assessments across departments to enhance readiness and foster a coordinated response to emerging threats.

With respect to risk response, the study recommends that corporations develop comprehensive and well-documented response strategies that include clear contingency plans, risk mitigation protocols, and stakeholder engagement mechanisms. Organizations should also review and test their risk response frameworks regularly to ensure alignment with evolving operational needs. Moreover, there is a need to enhance the use of risk

transfer mechanisms, such as insurance and outsourcing, to spread operational risks and improve resilience.

Finally, recognizing that risk monitoring and review had the strongest effect on operational efficiency, it is recommended that commercial state corporations invest in real-time tracking systems, automate monitoring processes, and create feedback loops that inform strategic adjustments. Regular compliance audits and structured review meetings should be institutionalized to keep risk mitigation strategies relevant and effective. By embedding monitoring and review into the performance management system, organizations can foster accountability, improve agility, and maintain a consistent trajectory of operational excellence.

5.5 Research Areas for Further Studies

Although this research offered treasured intuitions into risk management practices effect on operational efficiency among commercial state corporations in Kenya, it was limited to four core dimensions of risk management: identification, assessment, response, and monitoring and review. Specifically, scholars are encouraged to examine the role of organizational risk culture in shaping staff attitudes and behaviors toward risk uptake and mitigation. Another potential area is assessing the impact of board-level risk governance structures such as the presence of risk oversight committees on strategic risk decisions and long-term resilience. Additionally, future studies could investigate the effectiveness of integrated ERM frameworks on both operational and financial performance outcomes. This broader approach could provide a more holistic understanding of how organizations can manage uncertainty across different functions.

Additionally, this study focused solely on commercial state corporations, which are a subset of public sector institutions. Future research could replicate this study in other

public entities such as regulatory bodies, county governments, or constitutional commissions to allow for comparative analysis across sectors. Similarly, comparative studies involving private sector organizations would provide meaningful insights into best practices and sector-specific differences in risk management and efficiency outcomes.

Finally, the research exclusively utilized quantitative data obtained via structured questionnaires. Future researchers could consider adopting a mixed-methods approach that integrates interviews or case studies to gain deeper qualitative insights into how risk management decisions are made and implemented. Longitudinal studies could also be beneficial in examining how changes in risk management practices over time influence operational efficiency, especially in dynamic environments or during crises.

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APPENDICES

Appendix I: Introduction Letter

January 2025

Margaret Wairimu Ngugi

Masters Student

KCA University

RE: REQUEST FOR RESEARCH DATA COLLECTION

I am pursuing a degree in MBA Corporate management at KCA University and I am expected to submit a research paper on **"Effect of institutional risk management framework on operational efficiency of commercial state corporations in Kenya"** as part of my course work.

To accomplish this, your corporation has been chosen to collect the data needed for this research. Your name will not be included in the research, and this info will be used solely for academic purposes. The research conclusions will be made availed on demand

Kind regards.

Margaret W. Ngugi

23/04506

Masters Student – Researcher

KCA University

Appendix II: Questionnaire

This questionnaire is designed to collect information on the impact of institutional risk management frameworks on the operational efficiency of commercial state corporations in Kenya. We kindly ask you to read through the questions carefully and provide honest and accurate responses. Please note that the information collected will be used exclusively for academic purposes and will be handled with the highest level of confidentiality.

Instructions

Pick only a response (box) for every question.

PART A: BACKGROUND INFORMATION

1. Kindly specify your gender

   a) Male ( )

   b) Female ( )

2. Please indicate your age

   (a) Below 30 years ( )

   (b) Between 31-40 years ( )

   (c) Between 41-50 years ( )

   (d) Above 50 years ( )

3. How long have you been in your current position?

   a) Less than 1 year ( )

   b) Between 2-3 years ( )

   c) Between 4-5 years ( )

   (d) More than 5 years ( )

4. Please indicate the highest level of education

   (a) Diploma ( )

   (b) Undergraduate Degree ( )

(c) Master's Degree ( )

(d) PhD ( )

(e)

PART B: INSTITUTIONAL RISK MANAGEMENT FRAMEWORK

This section is divided into four key components: risk identification**,** risk assessment, risk response and risk monitoring and review.

Risk Identification

To what extent does the following aspects of risk identification enhance your operational efficiency? Tick as appropriate using the following Likert scale of 1-5 where:1=No Extent; 2=Little Extent; 3=Moderate Extent; 4=Great Extent; 5=Very Great Extent

Statement	**1**	**2**	**3**	**4**	**5**
Identifying potential risks proactively enhances operational efficiency.					
Assessing the likelihood and impact of risks improves decision-making.					
Implementing mitigation strategies reduces disruptions in operations.					
Regular risk monitoring ensures timely adjustments to operational plans.					
Effective communication of risks enhances organizational performance.					
Our organization utilizes real-time analytics to track operational risks.					

Risk assessment

To what extent does the following aspects of risk response enhance your operational efficiency? Tick as appropriate using the following Likert scale of 1-5 where:1=No Extent; 2=Little Extent; 3=Moderate Extent; 4=Great Extent; 5=Very Great Extent

Statement	1	2	3	4	5
Assessing the likelihood of risks helps prioritize mitigation strategies.					
Evaluating the potential impact of risks improves resource allocation.					
Conducting regular risk assessments enhances operational planning.					
Risk assessment tools are effectively utilized in our organization.					
Collaboration during risk assessment improves decision-making.					
Risk assessment processes align with the organization's strategic goals.					

Risk response

To what extent does the following aspects of risk response enhance your operational efficiency? Tick as appropriate using the following Likert scale of 1-5 where:1=No Extent; 2=Little Extent; 3=Moderate Extent; 4=Great Extent; 5=Very Great Extent

Statement	1	2	3	4	5
Implementing mitigation strategies minimizes operational disruptions.					

Our organization has effective contingency plans for managing risks.					
Risk response actions are timely and aligned with organizational goals.					
Collaborating with stakeholders enhances the effectiveness of risk response strategies.					
Risk transfer mechanisms, such as insurance, are effectively utilized in our organization.					
Monitoring the outcomes of risk response actions ensures continuous improvement.					

Risk monitoring and review

To what extent does the following aspects of risk monitoring and review enhance your operational efficiency? Tick as appropriate using the following Likert scale of 1-5 where:1=No Extent; 2=Little Extent; 3=Moderate Extent; 4=Great Extent; 5=Very Great Extent

Statement	**1**	**2**	**3**	**4**	**5**
Regular risk monitoring helps identify emerging threats to operations.					
Our organization utilizes real-time tracking systems for risk management.					
Periodic risk reviews enhance the effectiveness of mitigation strategies.					
Compliance audits are regularly conducted to assess risk management practices.					

Risk monitoring reports are effectively used in decision-making processes.					
Feedback from risk reviews is used to improve operational efficiency.					

PART C: Operational efficiency

To what extent do you agree with the following statements? Tick as appropriate using the following Likert scale of 1-5 where:1=No Extent; 2=Little Extent; 3=Moderate Extent; 4=Great Extent; 5=Very Great Extent

Productivity	**1**	**2**	**3**	**4**	**5**
The organization meets its productivity targets consistently.					
Employees complete tasks within allocated timeframes.					
Operational efficiency has improved due to streamlined processes and resource optimization.					
Lead time					
Processes are optimized to reduce unnecessary delays.					
Turnaround times for key operations have improved over the past year.					
The organization adopts technology to shorten operational timelines.					
Waste reduction					
The organization has effective strategies to minimize resource wastage.					

Recycling initiatives and sustainable practices are in place.					
Operational costs have decreased due to efficient resource utilization.					

THANK YOU

Appendix III: Ethical Clearance Request Form

RESEARCH, INNOVATION, AND OUTREACH DIVISION

KCA UNIVERSITY SCIENTIFIC AND ETHICS REVIEW COMMITTEE

REQUEST FOR ETHICAL REVIEW FORM

The request must include the following information for the research to be considered for approval:

Name, institution, and contact details (email and phone number) of the principal/lead investigator/researcher:	Margaret Wairimu Ngugi KCAU 2304506@students.kcau.ac.ke
If it is a thesis, include also the name(s), institution(s), and contact details (emails and phone numbers) of the supervisor(s):	Supervisor: Dr. Caroline Ntara c.ntara@kcau.ac.ke 0728640345
Date of request:	17/02/2025
Title of the Research:	Effect of institutional risk management framework on operational efficiency of commercial state corporations in Kenya
Planned or confirmed source of funding:	Personal funding
Members of the research group and their roles in the implementation of the study, as well as possible cooperation with other universities,	Margaret Ngugi being the principal researcher mandated with steering the study design, data collection, analysis and dissertation findings reporting lead person.

research institutes, or similar organizations:	As requirement for the award of MBA in KCAU, the study will not involve corporation with other universities or research institutes. Commercial state corporations risk management team will however be involved in offering insights through structured questionnaire on how their organizations regard institutional risk management frameworks on operational efficiency. KCAUSERC-Ethical review and approval
What is the level of risk presented by your research?	Please indicate whether the research risk assessment (Check risk document) stated on the application is: ✓ **Low risk** ☐ **Low risk** (*Research has no foreseeable risk of harm, discomfort, or inconvenience to respondents*) ☐ **Medium risk** (*Research has potential risk of unexpected negative consequences, harm or discomfort, but where appropriate steps can be taken to mitigate the risk*) ☐ **High risk (***Research with real and foreseeable risk of harm and discomfort to participants and or the research team, and which may lead to serious adverse consequences if these risks are not managed in a responsible manner. It involves highly sensitive topics and/or the participation of very vulnerable and marginalized individuals/groups*)

Would you like to bring any aspects of the applications to the Ethics Review Committee's attention?	**Please indicate them here** Voluntary participation: All respondents will voluntarily participate, with the right to withdraw at any time without consequences Confidentiality: The respondents will be anonymous and no personally identifiable information will be published or disclosed. Minimum risk: There are no anticipated physical or psychological risk associated with this research. Data security: Data will be stored securely and only used solely for academic purposes
What research data will be collected?	Primary data through questionnaires
What personal data and confidential information will be processed?	Personal data Participants gender, age, years of service in their position, personal or job emails Confidential information Head of risk or their equivalent response regarding institutional risk management framework in their corporations
Specify any special category or sensitive data that will be collected (tick all that apply)	☐ Ethnicity ☐ Mental Health (status, medical records conditions, to include disability) ☐ Physical Health (status, medical records conditions, to include disability) ☐ Sexual Orientation/Sexual life ☐ Genetic Data (to include DNA data)

	☐ Biometric data (such as facial scan, iris scan, or fingerprint data used to identify a participant) ☐ Political opinions ☐ Trade Union membership ☐ Religious or philosophical beliefs ☐ Criminal Convictions and offences (to include alleged offences and convictions) ✓ ☐ None ☐ Other – Please specify below
How will data be stored and transferred during the research?	Password protected files to prevent unauthorized data access
Specify who will be able to access the identifying information and how you will ensure they process the information securely	Margaret Ngugi, the principal researcher. I will use code for the identifying information during analysis to ensure confidentiality. Data will be stored in password protected files during analysis to ensure confidentiality and will be disposed 1 year after dissertation completion in compliance with the ethical research guidelines
How will research data be preserved and shared on completion of the project? (NB: *Enter N/A in this section unless results will be published*)	N/A
Describe the measures that will be taken to ensure data are suitable for sharing, e.g., securing consent, anonymizing data prior to deposit/sharing, and sharing confidential or high-risk information using a controlled access repository.	All participants will be required to provide informed consent before participating in the study. Any identifying information such as job titles, gender or age will be coded before data analysis. Data will be aggregated, ensuring individual responses cannot be traced to specific participants

State how long you plan to retain personal data and any confidential information after the end of the project. Indicate also how the data will be disposed	One year after completion of the study Identifying and confidential information for the participants will be permanently deleted after the one-year period

As the Principal Investigator of this study, I declare that I take full responsibility for the proposed study and will conduct it according to the documented proposal and in line with KCAUSERC ethical guidelines.

By signing this document, I agree that:

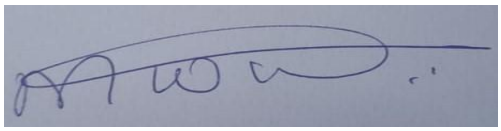
a) All documents submitted with this application are true representations of the study and have not been falsified.

b) This study will not commence in any way, and no participant will be recruited until final official approval is received from KCAUSERC

c) The study will be conducted according to the protocol submitted. All participants will be recruited and consented to according to the protocol.

d) Any protocol deviations or protocol violations to the submitted study must be reported to KCAU in writing by email to KCAUSERC immediately. Within five (5) business days of the deviation or violation, the Deviation/Violation Must be reported to the ISERC office.

e) Any study-related unexpected or serious adverse event must be reported to the ISERC Office by email within twenty-four (24) hours after the PI becomes aware of the event.



17/02/2025

Principal Investigator's Signature **Date**

INFORMED CONSENT FOR RESEARCH PARTICIPATION

Introduction

You are invited to participate in a research study. This document provides information about the study so that you can make an informed decision about your participation. Please take the time to read the information below. If you have any questions, feel free to ask the researcher. **(PI to Fill in the sections italicized)**

Purpose of the Study

The purpose of this study is to evaluate effect institutional risk management framework on operational efficiency of commercial state corporations in Kenya. The research findings will assist commercial state corporations, which are seriously facing operational inefficiencies, poor financial performance and risk being merged and privatized research. The findings will highlight how effective risk identification, assessment, response, and monitoring practices can mitigate operational inefficiencies, reduce financial risks, and improve service delivery. This research is being conducted to bridge an empirical gap in the literature on risk management frameworks within the context of Kenyan commercial state corporations. Ultimately, the study helps policymakers design frameworks that improve the operational efficiency and sustainability of public sector organizations, contributing to economic stability and growth.

Study Procedures

If you agree to participate, you will be asked to offer response by providing primary data via structured questionnaire response targeting commercial state corporations head of risk. The study is expected to be completed within a three-month period.

Potential Risks and Discomforts

There may be some risks associated with participation in this study.

As at now, there are no foreseeable risk or discomfort to this study participants. Every effort will be made to minimize potential risk that may arise, and you can withdraw from the study at any time without penalty.

Potential Benefits

While participating may not directly benefit you, the results of this study may contribute to design frameworks that improve the operational efficiency and sustainability of public sector organizations, contributing to economic stability and growth.

Confidentiality

Your participation will be kept confidential. Any data collected will be stored securely and only accessible to the research team. Your identity will not be revealed in any publication or presentation resulting from this research.

Voluntary Participation

Participation in this study is completely voluntary. You have the right to withdraw from the study at any time without any negative consequences or loss of benefits to which you are otherwise entitled.

Questions

If you have any questions about this study, your participation, or your rights as a participant, please contact the principal investigator at [*2304506@students.kcau.ac.ke*].

Consent

By signing below, you indicate that you have read the information provided above, understand the purpose and procedures of the study, and voluntarily agree to participate. You can withdraw from the study at any time without penalty.

Participant Statement:

I, the undersigned, consent to participate in this study.

Name of Participant: _____

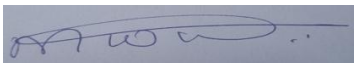
Signature of Participant: _____

Date: _____

Researcher (Principal Investigator –P1) Statement:

I, the undersigned, confirm that I have explained the nature of this study to the participants, answered all questions, and ensured that they understand the information provided.

Name of Researcher: Margaret Wairimu Ngugi

Signature of Researcher: 

Date: **17/02/2025**

Appendix IV: Commercial State Corporations

1. Agro-Chemical and Food Company
2. Chemilil Sugar Company Limited
3. Consolidated Bank of Kenya
4. Development Bank of Kenya Limited
5. East African Portland Cement Limited
6. Fisheries development and Promotion Services
7. Geothermal Development Company (GDC)
8. Golf Hotel Kakamega East African
9. Jomo Kenyatta Foundation
10. Jomo Kenyatta University Enterprise Limited
11. Kabarnet Hotel Limited East African
12. Kenya Airports Authority (KAA)
13. Kenya Animal Genetics Resource
14. Kenya Broadcasting Corporation (KBC)
15. Kenya Development Bank
16. Kenya Electricity generating Company (KENGEN)
17. Kenya Industrial Estates
18. Kenya Investment Authority (KenInvest)
19. Kenya Literature Bureau
20. Kenya Meat Commission
21. Kenya National Assurance Co. (2001) Ltd
22. Kenya National Shipping line
23. Kenya National Trading (KNTC)
24. Kenya Pipeline Company (KPC)
25. Kenya Ports Authority
26. Kenya Post office Savings Bank
27. Kenya Power and lighting Company (KPLC)
28. Kenya Railways Corporations (KRC)
29. Kenya Reinsurance Corporation Limited
30. Kenya Safari Lodges and Hotel Ltd East African
31. Kenya Seed Company
32. Kenya Veterinary Vaccine Convention Centre

33. Kenya Wildlife Conservation Service
34. Kenyatta International Convention centre
35. Mt. Elgon Lodge East African
36. Muhoroni Sugar Company Limited
37. National Cereals and Produce Board
38. National Housing Corporation
39. National Oil Company of Kenya
40. National Water Conservation and pipeline Corporation
41. New Kenya Corporative Creameries
42. Numerical Machining Complex
43. Nyayo Tea Zones Development Corporation
44. Nzoia Sugar Company Limited
45. Postal Corporation of Kenya
46. Rivatex (East Africa) Limited
47. School Equipment Production Unit
48. Simlaw Seeds
49. Sony Sugar Company Ltd
50. South Nyanza Sugar Company Limited
51. Sunset Hotel Kisumu East African
52. Tourism Finance Corporation
53. University of Nairobi Enterprise Limited
54. University of Nairobi Press (UONP)

Source: KNBS (2024)

Appendix V: University Letter of Approval

Thika Road, Ruaraka
P.O. Box 56808-00200 Nairobi Kenya
Pilot Line: +254 20 8070408/9

Tel: +254 20 3537842
Fax: +254 20 8561077
Mobile: +254 734 888022, 710 888022
Email: kca@kca.ac.ke
Website: www.kca.ac.ke

BOARD OF POSTGRADUATE STUDIES

KCAU/BPS/2025 *Date: Wednesday, April 30, 2025*

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

RE: MARGARET WAIRIMU NGUGI - REG NO. 23/04506

It is my distinct pleasure to introduce to you Margaret Wairimu Ngugi who is a student in our institution pursuing a Master of Business Administration Corporate Management degree in the School of Business. Ngugi is conducting a research on a topic titled ***"Effect of institutional risk management framework on operational efficiency of commercial state corporations in Kenya"*** which is part of the requirements of the program she is pursuing. The research as well as the data procured thereof shall be used for academic purposes only.

Any assistance accorded to her is highly appreciated.

In case of further inquiry, do not hesitate to contact the undersigned.

Yours faithfully,

DR. JACKSON NDOLO
DIRECTOR, BOARD OF POST GRADUATE STUDIES

Appendix VI: NACOSTI Permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **476264**

Date of Issue: **08/June/2025**

RESEARCH LICENSE

This is to Certify that Miss.. Margaret Wairimu Ngugi of KCA University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in on the topic: EFFECT OF INSTITUTIONAL RISK MANAGEMENT FRAMEWORK ON OPERATIONAL EFFICIENCY OF COMMERCIAL STATE CORPORATIONS IN KENYA for the period ending : 08/June/2026.

License No: **NACOSTI/P/25/4174278**

476264

Applicant Identification Number

Deputy Director
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

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See overleaf for conditions