2025

Influence of Enterprise Risk Management integration on financial performance of non-life insurance companies in Kenya with the moderating effect of regulatory framework.

Njiru, Anne Kina
Strathmore Business School
Strathmore University

INFLUENCE OF ENTERPRISE RISK MANAGEMENT INTEGRATION ON FINANCIAL PERFORMANCE OF NON-LIFE INSURANCE COMPANIES IN KENYA WITH THE MODERATING EFFECT OF REGULATORY FRAMEWORK

ANNE KINA NJIRU

MBA/150090

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION OF STRATHMORE UNIVERSITY BUSINESS SCHOOL

May 2025

DECLARATION

declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the thesis/dissertation (use as appropriate) contains no material previously published or written by another person except where due reference is made in the thesis/dissertation itself.

Name of Candidate: Anne Kina (MBA/150090)

Signature… … Date:20th May 2025

Approval

The thesis/dissertation was reviewed and approved for examination by the following:

Name of Supervisor: Dr. John Olukuru

Signature…… Date: 20th May 2025

School/Institute/Faculty:

ABSTRACT

Enterprise Risk Management (ERM) is a comprehensive approach, encompassing processes, structures, culture, and infrastructure, that organizations implement to identify and manage potential risks within their risk appetite. It is integrated into strategic planning and operational activities to provide reasonable assurance of achieving organizational objectives. While the theoretical benefits of ERM are well-established, its practical implementation, particularly within the dynamic and often volatile non-life insurance sector, presents significant challenges. This study addresses the empirical problem of understanding the specific influence of integrated ERM systems on the financial performance of non-life insurance companies in Kenya. It aimed to evaluate the distinct impacts of ERM process, culture, structure, and infrastructure integration on financial performance of non-life insurance companies in Kenya. To achieve this, the study was guided by guided by agency theory and contingency theory which provided a comprehensive theoretical framework. A descriptive research design was employed, targeting managers of five key departments (chief risk officers, chief finance manager, head of claims, head of underwriting, and head of sales/business development) across all 37 non-life insurance companies in Kenya who were selected using a purposive sampling method with a targeted population of 185 staff and a respondent sample size of 155 staff. Primary data was collected using structured questionnaires, while secondary data, including financial reports, was gathered using data collection sheets. Both descriptive and inferential statistical methods were adopted for data analysis. Findings suggest a state of underwhelming adoption of ERM components, especially ERM processes, structures, and infrastructure in Kenya's non-life insurance sector. Inferential statistics reveal that integrating ERM culture and structure yields significant positive effects on both ROA and ROE whereas ERM process and infrastructure, while significantly predictive of ROA, does not extend to ROE. Additionally, the current regulatory framework does not significantly moderate the relationship between ERM practices and financial performance. Therefore, this study recommends that policymakers should enhance the regulatory environment to better complement the integration of ERM practices and that individual non-life insurance companies should prioritize investing in ERM culture and structure integration to optimize their financial performance, particularly in terms of improved ROA and ROE.

TABLE OF CONTENTS

DECLARATION……..ii

ABSTRACT.....iii

LIST OF TABLES.....ix

LIST OF FIGURES.....x

ABBREVIATIONS AND ACRONYMS.....xi

OPERATIONAL DEFINITION OF KEY TERMS.....xii

CHAPTER ONE.....1

INTRODUCTION.....1

1.1 Background of the Study.....1

1.1.1 Enterprise Risk Management Integration.....7

1.1.2 Financial Performance.....8

1.1.3 Non-Life Insurance Companies in Kenya.....9

1.2 Statement of the Problem.....10

1.3 Objectives of the Study.....11

1.3.1 General Objective of the Study.....11

1.3.2 Specific Objectives of the Study.....11

1.4 Research Questions.....12

1.5 Scope of the Study.....12

1.6 Significance of the Study.....13

CHAPTER TWO.....15

LITERATURE REVIEW.....15

2.1 Introduction.....15

2.2 Theoretical Review.....15

2.2.1 Agency Theory 15
2.2.2 Contingency Theory 17
2.3 Empirical Review 18
2.3.1 ERM Culture Integration and Financial Performance 19
2.3.2 ERM Process Integration and Financial Performance 20
2.3.3 ERM Structure Integration and Financial Performance 21
2.3.4 ERM Infrastructure Integration and Financial Performance 23
2.3.5 Moderating Effect of Regulatory Framework for ERM Implementation 25
2.4 Research Gaps 26
2.5 Conceptual Framework 33
2.6 Operationalization of Variables 35
CHAPTER THREE 37
RESEARCH METHODOLOGY 37
3.1 Introduction 37
3.2 Research Philosophy 37
3.3 Research Design 38
3.4 Target Population 39
3.5 Sample Size and Sampling Technique 39
3.6 Data Collection 39
3.6.1 Data Collection Instrument 40
3.6.2 Data Collection Procedure 40
3.7 Data Analysis and Processing 41
3.7.1 Descriptive Statistics 41
3.7.2 Inferential Statistics 41

3.7.3 Diagnostic Tests 42
3.8 Research Quality 43
3.8.1 Reliability of Research Tool 43
3.8.2 Validity of Research Instrument 43
3.9 Ethical Issues in Research 44
CHAPTER FOUR 45
PRESENTATION OF FINDINGS 45
4.1 Introduction 45
4.2 Response Rate 45
4.3 Background Information 46
4.4 Descriptive Statistics 48
4.4.1 ERM Culture Integration 48
4.4.2 ERM Process Integration 49
4.4.3 ERM Structure Integration 51
4.4.4 ERM Infrastructure Integration 52
4.4.5 Regulatory Framework 53
4.4.6 Financial Performance 54
4.5 Establishing Relationships 54
4.5.1 Correlation Analysis 55
4.5.2 Diagnostic Tests 56
4.5.2.1 Test for Heteroscedasticity 56
4.5.2.2 Normality Test 57
4.5.2.3 Test for Autocorrelation 58
4.5.2.4 Test for Multicollinearity 58

4.5.3 Regression Analysis 59
4.5.3.1 ERM Integration and ROA 59
4.5.3.2 ERM Integration and ROE 63
4.5.3.3 Moderating Effect of Regulatory Framework 65
CHAPTER FIVE 70
SUMMARY, DISCUSSION, CONCLUSION, AND RECOMMENDATIONS 70
5.1 Introduction 70
5.2 Summary of the Findings 70
5.3 Discussion of Findings 71
5.3.1 ERM Process Integration and Financial Performance 71
5.3.2 ERM Culture Integration and Financial Performance 73
5.3.3 ERM Structure Integration and Financial Performance 75
5.3.4 ERM Infrastructure Integration and Financial Performance 76
5.3.5 Moderating Effect of Regulatory Framework 78
5.4 Conclusion of the Study 78
5.5 Implications of the Study 79
5.5.1 Policy Implications 79
5.5.2 Practical Implications 79
5.5.3 Theoretical implications 80
5.6 Areas for Further Research 80
REFERENCES 82
APPENDICES 97
Appendix 1: Questionnaire 97
Appendix 2: Ethical Approval 102

Appendix 3: Research Permit 103

Appendix 4: Financial Data of Non-Life Insurance Companies 104

Appendix 5: Non-Life Insurance Companies 106

LIST OF TABLES

Table 2. 1: Summary of Empirical Literature and Research Gaps 27
Table 2. 2: Operationalization of Variables 35
Table 4. 1: Response Rate 46
Table 4. 2: Background Information 47
Table 4. 3: ERM Culture Integration 48
Table 4. 4: ERM Process Integration 50
Table 4. 5: ERM Structure Integration 51
Table 4. 6: ERM Infrastructure Integration 52
Table 4. 7: ERM Regulatory Framework 53
Table 4. 8: Financial Performance 54
Table 4. 9: Correlation Analysis 55
Table 4. 10: Durbin-Watson Statistic 58
Table 4. 11: Variance Inflation Factor test 59
Table 4. 12: Model Summary 60
Table 4. 13: ANOVA 61
Table 4. 14: Coefficients 62
Table 4. 15: Model Summary 63
Table 4. 16: ANOVA 63
Table 4. 17: Coefficients 64
Table 4. 18: Model Summary 65
Table 4. 19: ANOVA 65
Table 4. 20: Coefficients 67
Table 4. 21: Model Summary 68
Table 4. 22: ANOVA 68
Table 4. 23: Coefficients 69

LIST OF FIGURES

Figure 2.1: Conceptual Framework 34
Figure 4. 1: Residuals Versus Fits plots..... 57
Figure 4. 2: Histogram 57

ABBREVIATIONS AND ACRONYMS

AKI	Association of Kenya Insurers
CBK	Central Bank of Kenya
CRO	Chief Risk Officer
COSO	Committee of Sponsoring Organizations of the Treadway Commission
ERM	Enterprise Risk Management
GDP	Gross Domestic Product
GWP	Gross Written Premiums
IAIS	International Association of Insurance Supervisors
IFRS	International Organization Reporting Standards
IRA	Insurance Regulatory Authority
IST	Information Systems Theory
KES	Kenya Shilling
KRI	Key Risk Indicators
OCT	Organizational Culture Theory
PLC	Public Limited Company
PLS-SEM	Partial Least Squares Structural Equation Modeling
PMS	performance management system
ROA	Return on Assets
ROE	Return on Equity
ROI	Return on Investment
RM	Risk Management
SERM	Sustainable Enterprise Risk Management
SSA	Sub-Sahara Africa
TRM	Traditional Risk Management

OPERATIONAL DEFINITION OF KEY TERMS

Enterprise Risk Management Process: This refers to the seamless incorporation of Risk management procedures, such as identifying, evaluating, mitigating, tracking, and reporting risks, across various functions and levels within an organization (Masama et al., 2022).

Enterprise Risk Management Culture: according to Prewett and Terry (2018), ERM culture integration involves developing an organization's culture of risk awareness, where employees, stakeholders, and leadership demonstrate attitudes, behaviors, and values that prioritize risk management, transparency, accountability, and ethical decision-making.

Enterprise Risk Management Infrastructure: ERM infrastructure integration refers to the integration of tools, systems, processes, and resources that support effective risk management practices (Salaudeen, 2024). This includes risk management software, data analytics tools, reporting mechanisms, training programs, and governance frameworks.

Enterprise Risk Management Structure: ERM structure integration involves aligning the financial structure, roles, responsibilities, and governance mechanisms with ERM objectives (Prewett & Terry, 2018). This includes defining ERM roles, reporting lines, accountability frameworks, and decision-making processes.

Regulatory Compliance Framework: regulatory framework is the existing rules and guidelines that organizations use to implement policy decisions taken by management or the board of directors (Chakwizira, 2022). Regulatory framework is a variable that indicates whether implementation of ERM is a requirement by law.

Financial Performance: Financial performance is the assessment of an organization's financial health, efficiency, and effectiveness in managing its financial resources to achieve its objectives (Selvam et al., 2016). It involves analyzing various financial metrics and indicators to assess how well a company generates revenue, manages expenses, allocates resources, and generates profits or returns for its stakeholders.

Non-life Insurance Companies: Refers to insurance coverage offered by property and casualty (P&C) insurance providers for risks other than life insurance (Ohlsson & Johansson, 2010). They offer a range of insurance products that protect individuals, businesses, and organizations against financial losses arising from events such as accidents, natural disasters, property damage, liability claims, and other non-life-related risks.

CHAPTER ONE
INTRODUCTION

1.1 Background of Study

The performance of the insurance sector varies significantly across different regions, reflecting economic structures, regulatory frameworks, and market maturity. In the United States, Europe, Asia, India, and China, the insurance industry plays a crucial role within the financial services sector, contributing to economic stability and growth (Apergis & Poufinas, 2020; Kramarić et al., 2019; Machkour & Abriane, 2020). These regions boast well-developed insurance markets, offering a broad spectrum of products tailored to both individual and corporate clients. In the United States, for instance, insurance companies are major contributors to the gross domestic product (GDP), strengthening financial stability through diverse offerings, including property, health, casualty, and life insurance (Apergis & Poufinas, 2020). Likewise, in Europe, insurance firms are fundamental to the economic landscape, providing essential risk management solutions that support businesses and individuals. Meanwhile, in Asia, particularly India and China, Singhal et al. (2020) cite that the sector is undergoing rapid expansion, driven by increasing awareness of its importance, rising disposable incomes, and favorable regulatory policies that encourage market growth and innovation.

On the regional level, the insurance sector, particularly in sub-Saharan Africa (SSA), faces a unique combination of challenges and potential for growth (Asongu & Odhiambo, 2020; Shewamene et al., 2021). While the sector has shown growth potential, especially in countries with emerging economies and expanding middle-class populations, there are significant gaps in insurance penetration and access to insurance products among the general population (Shao et al., 2022; Shewamene et al., 2021). This is because factors such as low insurance awareness, limited distribution channels, regulatory constraints, and socioeconomic disparities contribute to the relatively low penetration rates compared to global counterparts. Fortunately, as demonstrated by Barasa et al. (2021), efforts are underway in most SSA countries to enhance the regulatory framework, promote financial inclusion, and create cutting-edge insurance solutions suited to the requirements of African consumers, aiming to improve the financial performance and contribution of the insurance sector to regional economic development.

In Kenya, Non-life insurance constitutes a key segment of Kenya's insurance sector. A report the Insurance Regulatory Authority (2024) reveals that the sector as a whole generated KES 364.85 billion in gross premium income, representing an increase of 17.6% from the previous fiscal year. More than half, or 53.4% of the total gross premium income was attributable to general insurance. However, "insurance penetration in Kenya remains relatively low at 2.39 % compared to world average of 7.0%, indicating a significant opportunity for expansion" (IRA, 2024). The insurance industry in Kenya faces numerous risks related to operations (underwriting, claims, and finance), competition, legislation/regulatory, financial reporting, and human capital.

Amidst low penetration, competition in the industry also remains high (PricewaterhouseCoopers [PwC], 2022). Low penetration can be partly attributed to the perceived credibility crisis of the insurance sector in the public's eyes, especially with regard to claims settlement. The insurance sector has also been subject to taxation and legislative changes in recent years that have impacted operations. Some legislative changes relevant to this sector include minimal required capital investments for insurance, increased solvency margin for long-term insurance, and adoption of cash and carry regulations that will compel insurers to accept risk after receiving premiums (PwC, 2022). Penalties have also been introduced for delayed claims settlements.

Additionally, the financial reporting in the insurance industry is set to experience a major overhaul following the move to International Financial Reporting Standards (IFRS), which will compel insurance companies to disclose more risk information. Another risk relates to skills shortages due to the competitive labor market. The insurance sector also struggles with corruption and fraud, with 25% of claims costs attributed to fraudulent claims (KPMG, 2025). Cyberattacks are also becoming common, with 29% of corporate users being victims of malware attacks in 2021 (KPMG, 2025). Considering the prevalence of such risks in the insurance sector, the need for adopting ERM is evident.

Therefore, the optimal performance of insurance firms cannot be overlooked or underrated, for it plays an integral role in the development of global and national economies by enabling consumer activity as well as the everyday operations of businesses (Eriksen et al., 2020; Hussein & Alam, 2019). First, the non-life insurance sector offers security and safety to individuals and businesses. The insurance sector not only provides financial support but also mitigates uncertainties for

businesses and individuals (Serpa & Krishnan, 2017). As such, insurance is considered an effective risk mitigation approach against events that can lead to financial distress for businesses and individuals. Additionally, Eriksen et al. (2020) cite that the insurance sector generates financial resources through premiums obtained from policyholders, which can be invested in long-term infrastructure assets, like dams, power plants, ports, and roads, which are pivotal to nation-building. These investments also create employment opportunities that lead to capital formation.

Moreover, Cai's (2016) and Mall's (2018) empirical studies suggest that the insurance sector promotes economic development and growth through mobilizing domestic savings. Through insurance, accumulated capital can be converted into productive investments. Insurance also enables economic growth by mitigating losses, enabling financial stability, and promoting commerce and trade activities, which drive economic development and growth (Apergis & Poufinas, 2020; Hussein & Alam, 2019). Essentially, insurance plays a critical role in modern economies, providing support for individuals, businesses, and society as a whole (Apergis & Poufinas, 2020; Eriksen et al., 2020; Mall, 2018; Serpa & Krishnan, 2017). By mitigating risks, insurance provides a safety net against unforeseen events, helps businesses and individuals recover financially from unexpected losses, safeguards valuable assets, promotes responsible behavior, and promotes economic stability and growth.

However, the insurance industry, while designed to manage risk, is itself exposed to a wide array of potential threats. The common risks faced by insurance firms include underwriting, operational, fraud, financial, technological, regulatory compliance, environmental, and reputational risks (Talesh, 2018; Tselentis et al., 2017). Understanding and managing these risks is crucial for the stability and sustainability of the insurance industry. This is because the aforementioned risks have significant, cascading effects on both individual insurance firms and the broader insurance sector. Possible effects include significant financial losses that can lead to insolvency, erosion of capital reserves, reduced profitability, reputational damage, increased regulatory scrutiny, erosion of public trust, loss of market share, and a knock-on effect on the wider economy (Nicholson, 2019; Öner Kaya, 2015; Tselentis et al., 2017). In essence, the risks faced by insurance firms are interconnected and can have a ripple effect throughout the entire sector, impacting consumers, businesses, and the economy as a whole.

In light of the risks faced by insurance firms and the industry as a whole, as well as the associated consequences, effective risk management is not an option; it is essential (Okoli & Isaac, 2021; Owolabi et al., 2017; Trivedi, 2022). It is the cornerstone of a healthy and stable insurance industry, helping protect policyholders, maintain financial stability, and ensure the long-term viability of insurance firms. For the reasons above, the importance of enterprise risk management (ERM) for effective risk management in insurance has been highlighted by many scholars and practitioners, including Altuntas et al. (2011), Kajwang (2022), Kumar et al. (2024), Mahat et al. (2023), and Shaheen et al. (2020). ERM is an integrated and joined-up approach to managing risks across an organization and its extended networks (Mahat et al., 2023; Shaheen et al., 2020). It serves as a framework for identifying, assessing, and analyzing key business risks and minimizing negative business impacts if those risks occur.

ERM is viewed as a drastic standard move from the old technique of handling risk individually to all-inclusive risk management in investments comprising securities of one type or the other (Asamoah & Arkoh, 2019). Therefore, ERM and traditional risk management techniques differ in the way organizations process and structure risk at the top level as a control mechanism. ERM is a comprehensive and integrated approach that requires top-level oversight of the risk involved in the portfolio as per the firm's strategic objectives instead of having many units with different managers assessing particular risks in isolation (Kumar et al., 2024; Ping & Muthuveloo, 2015). On the other hand, Lundqvist (2015) says that traditional risk management targets specific risks in different units without a holistic approach and, therefore, is unable to keep up with the complex and rapid change in the business environment.

After the financial crisis of 2008, ERM gained momentum globally since risks were on the rise, and new types of risks were evolving as well (Yegon et al., 2014; Zéghal & El Aoun, 2016). As explained by Pagach and Warr (2011), ERM is primarily adopted to minimize uncertain financial distress that a firm may experience, to stop it from continuing with its investment strategy due to unexpected activity or events. With smoother, constant earnings and performance in cash flow, firms are able to pursue more investments and probably become more profitable. The immense value and benefits of investing in ERM are well-documented (Grace et al., 2015; Muslih, 2019; Naik & Prasad, 2021; Nocco & Stulz, 2022). According to the sources highlighted, the key benefits of ERM include improved decision-making, increased operational efficiency, enhanced financial

stability, stronger corporate reputation, proactive risk mitigation, enhanced risk awareness, enhanced strategic alignment, better resource allocation, enhanced regulatory compliance, greater resilience to disruptions, and better competitive advantage.

In the context of non-life insurance, studies have shown that implementing ERM can lead to improved financial performance, as it minimizes unexpected losses and enhances a firm's ability to adapt to market changes (Abeyrathna & Lakshan, 2021; Mahat et al., 2023; Tola, 2020). According to Kwaning et al. (2015), non-life insurers face a multitude of risks, including underwriting risk, catastrophe risk, operational risk, and financial risk. ERM provides a structured approach to identifying, assessing, and mitigating these risks. It enables these companies to manage both financial and non-financial risks comprehensively, ensuring stability and resilience in a highly volatile industry. Abeyrathna and Lakshan (2021) and Tola (2020) add that effective ERM also goes a long way in enabling non-life insurers to optimize their capital, improve underwriting, promote a culture of risk awareness, boost stakeholder confidence, and become compliant, all of which contribute to their overall performance.

However, despite its significance, the full potential of ERM is yet to be realized in some parts of the world. While ERM has become a standard practice for key sectors like finance and insurance in advanced economies like the United States, as documented by Fraser et al. (2021), in emerging economies like China and broader Asia, its adoption is increasing but faces unique challenges related to cultural perceptions of risk and varying regulatory frameworks (Fitriana & Wardhani, 2020). However, in Africa, ERM adoption varies across countries and industries, reflecting the diverse economic and regulatory landscapes alongside several common and country-specific challenges, including limited awareness of ERM, resource constraints, and the need for tailored approaches that align with local contexts (Horvey et al., 2024; Odubuasi et al., 2022). However, efforts to promote ERM regionally are underway, with initiatives aimed at enhancing risk culture, capacity building, and regulatory harmonization.

In Kenya, the insurance industry has made significant strides in adopting ERM principles to mitigate risks and enhance business resilience (Chege et al., 2023; Kajwang, 2022; Kiptoo et al., 2021; Njagi & Njuguna, 2017). This deliberate effort has seen Kenya hailed as a leader among SSA countries in the integration of ERM practices, particularly in industries like insurance and

banking. Insurance firms in Kenya are focusing on strengthening risk culture, implementing robust ERM processes aligned with international standards, and investing in technology-driven risk management solutions (Kajwang, 2022; Njagi & Njuguna, 2017). This strategic approach to ERM is crucial in navigating dynamic market conditions, regulatory changes, and emerging risks, thereby ensuring long-term sustainability and competitiveness within the insurance sector.

However, in unraveling the untapped potential of ERM in Kenya's insurance industry and that of the SSA region as a whole, Jabbour and Abdel-Kader (2016), Kiptoo et al. (2021), and Njagi and Njuguna (2017) hold the view that the shortage of empirical data on ERM and its benefits presents a significant challenge to its effective implementation within insurance firms in that it affects the ability of firms to make informed decisions, benchmark their ERM practices, and assess the effectiveness of ERM frameworks. Without robust data, it becomes difficult to identify industry-specific risks, evaluate the maturity of ERM programs, and develop tailored strategies for risk mitigation. This research was an attempt to address this gap by providing empirical evidence and contextualized insights into the impact of effective implementation of ERM frameworks among insurance firms in Kenya.

The moderating effect of the regulatory framework on the influence of ERM on firm performance is also increasingly drawing the attention of many researchers and practitioners. The moderating effect of regulations remains highly debatable, as demonstrated in the current body of empirical evidence. For instance, according to Zahoor et al. (2024), Makau and Okeyo (2021), and Nyandika et al. (2022), regulatory framework plays a moderating role in the relationship between ERM and firm performance by shaping how risk management strategies are implemented, monitored, and enforced. They argue that regulations set guidelines, compliance standards, and risk governance requirements, influencing the extent to which ERM practices contribute to financial outcomes.

On the other hand, Horvey and Odei-Mensah (2024) and Tola (2020) suggest that regulatory frameworks do not significantly moderate the relationship between risk management and firm performance. The researchers argue that internal organizational factors play a more decisive role in determining risk management effectiveness. These studies indicate that firms with strong governance structures, strategic risk policies, and proactive leadership often achieve positive financial outcomes regardless of external regulatory pressures.

1.1.1 Enterprise Risk Management Integration

Enterprise Risk Management (ERM) is a holistic framework that enables companies to identify, assess, and mitigate risks across all aspects of their operations (Fraser et al., 2021; Nocco & Stulz, 2022). Its relevance to insurance is paramount, given the levels of uncertainty and exposure to risks: natural disasters, market fluctuations, operational issues, and regulatory changes. It provides a structured framework for navigating the complex and volatile risk landscape inherent in the operations of insurers. Due to its holistic approach to risk management, ERM enables insurers to enhance their resilience and optimize their performance (Chege et al., 2023; Jabbour & Abdel-Kader, 2016; Tola, 2020). In a sector characterized by unpredictable and fluctuating conditions, ERM facilitate informed decision-making, strengthens capital adequacy, and cultivates a risk-aware culture, ultimately safeguarding the company's stability and ensuring its sustainability.

The Committee of Sponsoring Organizations of the Treadway Commission (COSO), alongside PwC, developed a comprehensive guideline for evaluating the effectiveness of ERM, consisting of four interconnected spheres: culture, process, structure, and infrastructure. (Masama et al., 2022; Prewett & Terry, 2018; Salaudeen, 2024). Culture serves as the foundation for a firm's internal environment, playing a critical role in determining its risk management strategy. It stresses employee quality, values, and decision-making processes. Culture directly influences risk-taking decisions, guiding employees in identifying, assessing, and responding to risks. One key aspect of risk culture is a collective understanding of an organization's mission, ensuring alignment between individual actions and broader strategic objectives. Employees must recognize that risk and regulations apply universally, fostering a culture where ethical decision-making and regulatory adherence are prioritized.

The process in ERM refers to the structured workflows and procedures designed to identify, assess, mitigate, and monitor risks effectively (Prewett & Terry, 2018). There are seven steps in the ERM process: goal definition, events recognition, risk assessment, response to risks, actions control, communication and information, and monitoring (Masama et al., 2022; Ping & Muthuveloo, 2015). Put simply, the ERM process includes risk assessment methodologies, reporting protocols, and incident response plans. According to Prewett and Terry (2018), a well-defined process ensures consistency and repeatability in ERM activities since it provides a structured approach to

risk management and reduces the reliance on ad-hoc responses. Also, clear processes promote accountability and facilitate continuous improvement, ensuring efficient risk management.

Structure in ERM is the organizational design and governance mechanisms that support ERM; it consists of the roles of risk management personnel, the establishment of risk committees, and the reporting lines for risk-related information (Ping & Muthuveloo, 2015; Salaudeen, 2024). A robust ERM requires that organizations design a suitable structure to deal with risk management where everybody within has a responsibility. According to Prewett and Terry (2018), an efficient firm entails the following: a committee tasked with overseeing ERM, like the audit committee; the top executive managers to take charge of the committee; and a department designated for ERM to make decisions about policy and its implementation. The fourth component, Infrastructure, is the cornerstone of successful ERM. Laisasikorn and Rompho (2014) say an effective infrastructure comprises competent individuals, an effective assessment system, appropriate employee training, channels of communication both internally and externally, and a high-quality risk management process review.

However, despite its significance, the full potential of ERM is yet to be realized in some parts of the world. While ERM has become a standard practice for key sectors like finance and insurance in advanced economies like the United States, according to Fraser et al. (2021), in emerging economies, its adoption is increasing but faces unique challenges related to cultural perceptions of risk and varying regulatory frameworks (Fitriana & Wardhani, 2020). In Africa, ERM adoption varies across, reflecting the diverse economic and regulatory landscapes alongside several common and country-specific issues, including limited awareness, resource constraints, and the need for tailored approaches that align with local contexts (Horvey et al., 2024; Odubuasi et al., 2022). However, efforts to promote ERM regionally are underway, with initiatives aimed at enhancing risk culture, capacity building, and regulatory harmonization.

1.1.2 Financial Performance

An essential indicator of an organization’s success is its financial performance (Selvam et al., 2016; Taouab & Issor, 2019). The degree to of a business utilizes its resources to create funds is known as its financial performance. Based on a company's profitability, equity, costs, revenue,

liabilities, and assets, it indicates its financial health. A number of metrics, including working capital, profitability, solvency measurements (such as quick and current ratios), return on equity (ROE), return on investments (ROI), and return on assets (ROA), are used to assess financial performance (Naz et al., 2016; Taouab & Issor, 2019). This study focused on the concept of financial performance, which has a significant part in the long-term of the insurance industry's sustainability firms.

For any firm, its financial performance affects various groups, including trade creditors, bond holders, investors, and management. Trade creditors are interested in a firm's liquidity (Taouab & Issor, 2019). Bond holders are concerned with the cash-flow ability of a firm in terms of its capital structure, uses and sources of funds, trends in profitability, and projected profitability. Investors are concerned with the current and projected future earnings as well as the firm's financial health and profitability (Berhe & Kaur, 2017; Bishaw et al., 2019). The management is concerned with internal control and continually improving a firm's financial performance. Therefore, the insurance industry's financial performance is an important aspect that contributes to its long-term sustainability.

1.1.3 Non-Life Insurance Companies in Kenya

Non-life insurance, also general insurance, provides financial protection against risks and losses unrelated to an individual's life (Ohlsson & Johansson, 2010). Unlike life insurance, which covers life events like death or disability, non-life insurance focuses on safeguarding assets, liabilities, and unexpected events. Essentially, it protects against financial losses related to various risks, such as property damage (due to fire, theft, and natural disasters), liability, automotive, health, and travel (Wuthrich & Buser, 2018). Overall, the non-life insurance sector is crucial; as a result, issues that affect its performance negatively need attention. Insurance firms in the world today exist in a volatile environment with several distinct hazards: liquidity political risk, market risk, foreign exchange risk, and other risks, interest rate hazards, among other perils (Tuffour et al., 2021; Zinyoro & Aziakpono, 2024). Risk has been termed as the potential for an occurrence or activities that influence an organization unpleasantly, hence hindering the organization's goals and objectives from being met.

1.2 Statement of the Problem

Kenya's insurance sector has experienced a steady decline in profitability since 2015, with the IRA reporting that general insurance underwriting losses increased from KES 510.20 million in Q1 2022 to KES 2.01 billion in Q1 2023. Similarly, a 2021 report by the Central Bank of Kenya (CBK) highlights a consistent decline in firm profitability, indicating that many insurance firms struggle to sustain financial performance. Moreover, IRA (2024) reveals that insurance penetration in Kenya stands at just 2.39%, significantly lower than the global average of 7.0%. Alarmingly, non-life insurance penetration has continued its downward trend since 2013, falling from 2.28% to only 1.28% in 2024, underscoring the sector's challenges in achieving growth, market expansion, and financial sustainability. The declining profitability, inadequate capitalization, and limited market penetration, among other challenges can be attributed to the wide array of risks, necessitating robust risk management frameworks, which is why ERM systems matter more than ever.

For firms looking to strengthen their risk management capabilities and improve their financial outcomes, ERM is imperative. Yet, there is insufficient information about its precise impact on financial performance, especially regarding non-life insurance firms in Kenya. Also, available literature lacks consensus on the optimal ERM integration. While some advocate for a holistic ERM approach (Abeyrathna & Lakshan, 2021; Horvey & Odei-Mensah, 2024; Tola, 2020), others favor interoperability and data analytics capabilities within ERM frameworks (Liu, 2009). These divergent viewpoints highlighted the need for empirical studies that solve the complexities of ERM integration and its impact on firm performance.

In Kenya, while some studies have shed light on the topic, they are not without gaps. Chege et al. (2023), Kajwang (2022), and Njagi and Njuguna's (2017) studies mostly focus on ERM adoption rates, general perceptions, and practices. Acharyya and Mutenga (2013) and Kiptoo et al. (2021) contribute to the discussion, but they concentrate on surface-level indicators without delving into the underlying drivers and mechanisms influencing financial performance measures. Additionally, the moderating effect of regulatory frameworks was hugely underexplored in the non life insurance companies .

Moreover, despite extensive coverage of risk management in existing literature, research focusing on the non-life insurance sector remains limited, leaving a contextual gap in understanding ERM practices within this industry. Additionally, while ERM is widely discussed, the four core dimensions (process, culture, structure, and infrastructure) as defined by COSO, are inadequately explored, highlighting a conceptual gap in literature. Furthermore, methodological gaps persist, as many studies rely primarily on qualitative analyses, failing to quantify the financial impact of ERM integration. To address these empirical and knowledge gaps, a more comprehensive, data-driven investigation was necessary. Accordingly, this research examined the influence of ERM integration on the financial performance of non-life insurance companies in Kenya, providing insights that bridge existing gaps while advancing industry-specific risk management knowledge.

1.3 Objectives of the Study

The study was guided by one main objective and five specific objectives as outlined below:

1.3.1 General Objective of the Study

The main objective of the study was to assess the influence of enterprise risk management integration on the financial performance of non-life insurance companies in Kenya with the moderating effect of regulatory frameworks.

1.3.2 Specific Objectives of the Study

To achieve this, the study specifically sought:

i. To evaluate the influence of ERM process Integration on the financial performance of non-life insurance companies in Kenya.
ii. To determine the influence of ERM culture Integration on the financial performance of non-life insurance companies in Kenya.
iii. To evaluate the influence of ERM structure Integration on the financial performance of non-life insurance companies in Kenya.
iv. To find out the influence of ERM infrastructure Integration on the financial performance of non-life insurance companies in Kenya.

v. To determine whether regulatory frameworks moderate the effect of ERM integration on the performance of non-life insurance companies in Kenya.

1.4 Research Questions

The study sought to answer the following research questions:

i. What is the influence of ERM process Integration on the financial performance of non-life insurance companies in Kenya?
ii. What is the influence of ERM culture Integration on the financial performance of non-life insurance companies in Kenya?
iii. What is the influence of ERM structure Integration on the financial performance of non-life insurance companies in Kenya?
iv. What is the influence of ERM infrastructure Integration on the financial performance of non-life insurance companies in Kenya?
v. Does the current regulatory framework moderate the effect of ERM integration on the performance of non-life insurance companies in Kenya?

1.5 Scope of the Study

This research was carried out under the following conditions: The study targeted the 37 non-life insurance companies licensed and operating in Kenya as of 31st December 2023. The key concepts covered in this study include the four components of ERM framework (culture, process, structure, and infrastructure) , moderating effect of regulatory framework h and ROA and ROE as financial performance measures. Primary data was collected from top managers working in key functional areas of the targeted insurance companies, including chief risk officers, chief finance manager, head of claims, head of underwriting, and head of sales/business development. Secondary data, in this case, financial information, was extracted from IRA's annual reports for the 2023 fiscal year. The study limited its theoretical framework to agency theory and contingency theory. Collected data underwent both descriptive and inferential statistics analysis. The time dedicated to studying was in March 2025.

1.6 Significance of the Study

First, this research holds significant value for regulatory agencies in the Kenyan insurance industry, particularly by providing insights and empirical evidence that can be helpful in the development and refinement of risk management guidelines. The IRA plays a crucial role in establishing and enforcing risk management policies, ensuring that insurers adopt best practices to mitigate financial and operational risks. While the IRA already has risk management guidelines, this study offers data-driven recommendations to enhance the ERM framework, making it more comprehensive, adaptable, and effective in addressing evolving risks within the insurance sector. Furthermore, this study can assist the regulator in identifying gaps and challenges in current risk management practices, enabling the optimization of regulatory policies to better align with industry needs. By integrating empirical findings, regulatory agencies can strengthen compliance measures, improve risk governance, and support insurers in developing more resilient risk mitigation strategies.

Secondly, this research provides valuable insights for a wide range of insurance stakeholders, including insurers, reinsurers, agents, insurance investigators, risk managers, loss adjusters, and motor assessors. Each of these professionals plays a critical role in risk assessment, mitigation, and financial decision-making, making it essential for them to adopt effective ERM strategies to optimize operations and enhance financial performance. By implementing data-driven risk management practices, insurers and reinsurers can reduce claim uncertainties, minimize losses, and maintain profitability. Similarly, insurance agents and brokers benefit from ERM insights by offering clients well-assessed risk coverage options, strengthening customer trust, and improving sales strategies.

Lastly, this research provides valuable contributions to the academic community, offering empirical insights that can be leveraged for theoretical advancements and practical applications. One significant implication is the potential to develop a comprehensive model illustrating the relationship between ERM practices and financial performance, providing a framework for future scholarly exploration. Researchers can use this model to test its validity across different sectors, identifying patterns and refining risk management strategies tailored to diverse industries. Additionally, this study expands the existing body of literature on ERM and financial implications,

bridging gaps in knowledge and offering new perspectives for understanding how firms can optimize risk mitigation to enhance profitability. By serving as a foundation for future empirical studies, comparative analyses, and sector-specific evaluations, this research fosters academic growth and supports the development of innovative risk management methodologies that contribute to both scholarly discourse and practical business applications.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

The influence of ERM is the key issue that informed the literature review. ERM systems integration on non-life insurance businesses' financial performance—is presented in this chapter. The opinions, reports, arguments, and discoveries of other writers and scholars are presented in this chapter. The presentation of the chapter follows the goals' sequence.

2.2 Theoretical Review

This research work was backed by some theories. The rationale for incorporating agency theory in this study lies in its ability to elucidate the principal-agent relationship within organizations, which is particularly pertinent in understanding how risk management decisions influence financial performance. Contingency theory was adopted to acknowledge the contextual nuances that impact ERM practices, emphasizing the need for flexible strategies aligned with organizational objectives. This means that agency theory served as the anchoring theory whereas contingency theory provided an additional support. This comprehensive theoretical framework allowed for a nuanced analysis of ERM practices and their implications for financial outcomes in the context of non-life insurance companies in Kenya.

2.2.1 Agency Theory

Agency theory was developed by Michael Jensen and William Meckling in the mid-1970s to explore the relationship between a principal and an agent in an organizational setting. According to Meckling and Jensen (1976), all corporate organizations are primarily managed by management, which works on behalf of shareholders. Therefore, the management is expected to behave in the person's best interest shareholders, but there are chances of conflict of interest, which may increase the risk levels of an organization (Panda & Leepsa, 2017). Depending on the organization's culture, which may be instilled in employees through policy guidelines, financial performance may have a positive trajectory if there are measures put in place to control risk levels.

According to the theory, an agency relationship exists when a principal assigns tasks to an agent. Several drawbacks associated with the agent's opportunism or self-interest might arise (Panda & Leepsa, 2017). These can include the agent's inaction or partial action in the principal's interests. This can take many forms, including agent abusing their authority for financial and non-financial gains. The principal and the agent have varying levels of access to information, which presents an information asymmetry problem (Fama & Jensen, 2008). In practical terms, this means if the principal is not as informed as the agent, it puts the principal at a disadvantage.

The theory is highly relevant in investigating the relationship between ERM and performance of non-life insurance firms; it provides a framework for understanding the relationship and conflicts of interest between shareholders and managers in risk management decision-making. According to the theory, managers are expected to uphold the interests of the shareholders in managing risks and pursuing profitability, an expectation that is influenced by their fiduciary duty (Turrado García et al., 2023). ERM's process, structure, culture, and infrastructure as well as financial performance of non-life insurance firms can be linked to the principles of the agency theory. Risk management practices, including ERM integration, is influenced by the principal-agent relationship. This relationship defines the roles and responsibilities within the organization, shaping the integration of ERM components (process, culture, structure, and infrastructure) into an organization's overall risk management strategy.

Financial performance, a key concern for shareholders, is intricately tied to the agency theory as it reflects how effectively management align risk management strategies with shareholder interests (Kyere & Ausloos, 2021). The culture of risk within the organization, including attitudes towards risk-taking and risk aversion, is also influenced by the agency relationship and can impact financial performance outcomes. Furthermore, the processes, structures, and infrastructure supporting risk management practices play a crucial role in ensuring smooth functioning of the agency relationship, ultimately affecting financial performance metrics.

However, while agency theory provides a useful framework for understanding principal-agent relationships, it has several limitations that affect its applicability in complex organizational settings. According to Panda and Leepsa (2017) and (Zogning, 2017), the theory assumes that managers and shareholders inherently have conflicting interests, overgeneralizes managerial

actions, focuses primarily on internal governance issues, often ignoring external influences, and primarily addresses the relationship between shareholders and managers, failing to account for other stakeholders, such as employees, customers, regulators, and communities, who also shape corporate success.

Despite these limitations, agency theory remains a valuable framework for analyzing ERM integration and financial performance. By applying the theory, the study evaluated whether ERM frameworks effectively managed the agency relationship and mitigated the principal-agent conflicts, ensuring that non-life insurance firms achieve risk-balanced financial performance while protecting shareholder interests.

2.2.2 Contingency Theory

Contingency theory is an organizational theory that was developed by Professor Fred Fiedler, an Austrian psychologist, in his 1964 article, "A Contingency Model of Leadership Effectiveness." It proposes that there is no "one-size-fits-all" approach to managing organizations. Instead, the "best" way to organize, lead, or make decisions is contingent upon the specific circumstances, both internal and external (Fiedler, 1964). Therefore, according to McAdam et al. (2019) theory of contingency "emphasizes the importance of both the leader's personality and the situation in which that leader operates."

Suardini et al. (2018) cite that major firms both in the public and private spheres have similar risk management system structures. The fundamental tenet of contingency theory is that optimal procedures rely on specific circumstances. Because a contingency theorist's usual response to a question is "it all depends" (Reinking, 2012). Even though it may seem straightforward, evaluating the variables that affect decisions can be highly intricate. Contingency theorists attempt to pinpoint and quantify the circumstances in which events are most likely to transpire. The theory assumes that an organization occurs through an interrelated business environment with the primary purpose of attaining organizational goals (Carmine & Smith, 2021). An organization's goal is influenced by human resources skills, technology, tasks, and structures in place. Outside the circle financial performance can be influenced by political forces, sociocultural forces, technological and

economic forces. In order to attain organization goals, there is a need to have risk management policies in place which attain organization goals efficiently.

Since it emphasizes the need for adaptable strategies based on specific organizational conditions and external influences, contingency theory is highly relevant to risk management research. In this case, the theory was relevant in examining the effect of ERM integration on financial performance of insurance firms (Mikes & Kaplan, 2013). In view of contingency theory, no single risk management approach is universally accepted for financial performance; rather, optimal profitability is dependent upon firm-specific factors and regulatory environments. The theory reinforces the need for adaptive ERM strategies, ensuring firms remain responsive to dynamic risk environments to optimize financial performance.

In this case, contingency theory provides a framework that links the ERM variables (process, structure, culture, and infrastructure to the financial performance of non-life insurance. As clarified by Gordon et al. (2009), firm performance is contingent upon specific internal controls such as ERM practices. This adaptive process requires flexible frameworks that can accommodate changes in risk environments and tailor risk management strategies accordingly. How well businesses adapt their risk management procedures in response to unforeseen circumstances affects the results of their performance. However, while it offers a flexible and adaptive approach to organizational decision-making, contingency theory has several limitations that affect its applicability in certain contexts (Mitchell et al., 1970; Reams, 2023), including a lack of universal framework that applies across industries or firm types, complexity in application, difficulty measuring contingency factors, and limited predictive power.

Nevertheless, contingency theory remains instrumental for understanding ERM integration in insurance firms, particularly in tailoring risk strategies to specific challenges in order to optimize profitability. In this study, as a supporting theoretical framework, contingency theory helped examine whether non-life insurance firms' ROA and ROE is contingent upon ERM integration.

2.3 Empirical Review

This section focuses on the synthesis and in-depth analysis of current literature on the research topic. The section is organized according to the specific objectives of the study.

2.3.1 ERM Culture Integration and Financial Performance

Matin (2017) explored the evolution of risk management from the TRM approach to the modern ERM from the perspective Iranian automotive industry. In particular, the researcher was interested in the alignment between ERM and performance management. Both qualitative and quantitative data from 101 professionals in the automative industry suggest that "aligning ERM with organizational performance management is critical in establishing a sustainable ERM and enhancing business performance over time." It underscores how strategic alignment influences the effectiveness of ERM culture integration initiatives and their impact on performance. Like Sajid et al. (2023), Matin (2017) emphasizes the role of the dimension of ERM culture, with a particular focus on leadership support, communication, and employee engagement as critical drivers of successful ERM culture integration and its impact on financial performance. However, this study was based in Iran and focused on automotive industry.

Rasedi and Sibindi's (2023) research offers valuable insights into the research topic. They sought to examine the interaction between ERM culture and strategy and the impact this relationship has on firm performance. The study was motivated by unprecedented interest in risk culture following the 2007-2009 global economic crisis. The findings of the study, which are based on a systematic review of the literature, suggest that "the alignment of ERM and strategy is an undisputable imperative" and that "ERM culture is a critical component of ERM strategy." Additionally, a direct link between ERM culture and performance was observed, in which Rasedi and Sibindi (2023) produced plausible evidence suggesting that "leading organizations thrived on strong organizational culture which was driven by a strategic alignment between ERM culture and business strategy." However, it is worth noting that the study was based in South Africa, lacked clear context, and used qualitative data and approaches.

To contribute to the empirical discussion, Kareem et al. (2024) looked into the "Implementation of Sustainable Enterprise Risk Management (SERM) paradigm in enhancing transport sector's performance" in Nigeria. The researchers discovered that the "ERM paradigm helps achieve good risk governance and organizational objective in normal, volatile and crisis situations." According to the study, whose results are of the views of officials of Nigeria's public transport sector, risk awareness culture is a critical component of ERM implementation. In particular, "ERM culture

affects the decisions of management and employees, regardless of whether they consciously weigh benefits and costs." This research underscores the importance of ERM culture integration. However, it fails to highlight its impact on the financial performance of non-life insurance companies since it was broadly based on Nigeria's transport sector. Therefore, further research was warranted in this field.

In Kenya, Kajwang (2022) conducted a "theoretical review of the drivers of ERM culture for insurance firms." Using a desktop method where public records, government publications, historical documents, and statistical data were reviewed. They observed that "the implementation of ERM culture has a significant impact on the performance of insurance firms." This observation aligns with those of Kareem et al. (2024), Rasedi and Sibindi (2023), Matin (2017), and Sajid et al. (2023), as demonstrated above. These studies, which highlighted the significance of a robust risk-aware culture in helping people make risk-adjusted decisions, show a significant association between better financial performance measures and ERM culture integration maturity. However, Kajwang's (2022) research is not without limitations; it is based on qualitative data, thus failing to quantify the impact of ERM culture on the performance of non-life insurance firms.

2.3.2 ERM Process Integration and Financial Performance

Insights into the interaction between ERM process integration and financial performance are provided by Sajid et al. (2023), who looked into "the impact of ERM on financial performance of non-financial firms in Pakistan." This research is relevant to the present investigation since it was based on COSO's ERM model, implying that the ERM process was examined as a component of the broader ERM framework. After surveying 340 top-level executives and analyzing data using the Partial Least Squares Structural Equation Modeling (PLS-SEM) technique, the researchers observed that "the implementation of ERM components exerted a substantial influence on financial performance." In the context of the ERM process variable, this study suggests that when effectively implemented, it can have a significant impact on financial performance by allowing for systematic identification, assessment, response, and monitoring or risks that could impede an organization's ability to achieve its financial goals.

Research by Hristov et al. (2024) advances the same argument as Sajid et al. (2023) that the adoption of the components of ERM, particularly the ERM process, is crucial for a firm's performance. In their study, Hristov et al. (2024) argue that ERM is the secret to a firm's sound financial and sustainable performance. They arrived at this conclusion by examining the nexus between the integration of ERM and the performance management system (PMS), whereby 75 senior and middle managers from Italian companies were surveyed. Therefore, this research fails to examine the relationship between ERM and financial performance; rather, the researchers were interested in how ERM and PMS can be integrated into the principles of Key Risk Indicators (KRIs) to serve as a strategic tool for corporate decision-making. Therefore, findings from this study fail to paint a true picture of the impact of the ERM process on financial performance among non-insurance firms.

In Kenya, Girangwa et al. (2020) examined "the integration between ERM and PMS: managerial analysis and conceptual model to support the strategic decision-making process." This study is similar to Hristov et al.'s (2024) since it offers insights into ERM-PMS integration. However, Girangwa et al. (2020) focused on Kenya's 218 state-owned corporations. Results of "inferential statistics revealed that risk structure, governance, and process practices had positive and significant effects on organizational performance." Like Sajid et al.'s (2023) research, Girangwa et al.'s (2020) study and its findings are relevant to the study since the ERM approach is conceptualized according to COSO's ERM framework, offering invaluable insights into the role of ERM process practices on performance. However, since the study focused on state-owned corporations, its findings may not reflect the dynamics of the ERM process and financial performance in the non-life insurance sector. Therefore, more research was needed in this field.

2.3.3 ERM Structure Integration and Financial Performance

According to Li (2018), "companies with formal ERM framework registered better top-line and bottom-line performance." More broadly, companies that successfully implemented and worked ERM structures as proposed by COSO registered higher share prices, ROE, better liquidity, and net income. However, the significance of ERM structure varied depending on company size, complexity, and organizational structures. This conclusion was arrived at after examining 12 publicly listed companies in China: "5 of which had separate board risk committees, 4 exercised

ERM oversight simply through audit committees, and 3 did not have any Board ERM oversight at all." The research emphasized the critical role of a well-defined ERM structure, including clear roles, responsibilities, and reporting lines, in enhancing risk management practices and financial performance. It also aligns with the views shared by Sajid et al. (2023), who examined ERM structure as a component of COSO's ERM framework.

Elsewhere in Malaysia, Ping and Muthuveloo (2015) studied "the impact of ERM on firm performance with a moderating role of the board of directors monitoring, firm size, and firm complexity." The researchers collected primary data from 103 representatives of public listed companies (PLCs). In that regard, this research is different from Li's (2018), which was based on secondary data. Nonetheless, they are similar since they both focus on PLCs. Ping and Muthuveloo (2015) utilized the PLS-SEM technique, which, as demonstrated earlier, was also used by Sajid et al. (2023). It was discovered that "ERM structure integration had a significant influence on firm performance," a similar observation made by both Li (2018) and Sajid et al. (2023). Therefore, Ping and Muthuveloo's (2015) research also confirms that organized risk management procedures enhance risk-adjusted decision-making, translating to financial success. However, since the study was conducted in Malaysia and focused on PLCs, it may not provide a true picture of ERM structure integration and the financial performance of non-life insurance companies in Kenya.

Oyewo's (2022) research is also a valuable contribution to the discussion from the perspective of Nigeria's banking sector. Using a mixed-method research approach and an Ex post facto research design, several banks were studied over a period of ten years using a checklist developed from the COSO ERM integrated framework. The researcher made a number of observations: "bank attributes (capitalization, level of operations, size, and systemic importance) significantly affected the robustness of risk management practice, "performance of banks improved post-2012 banking reform period," and "ERM enhances long-term performance." This finding is consistent with that of Ping and Muthuveloo (2015), Li (2018), and Sajid et al. (2023). It also connotes the importance of ERM structures since it was the focus of the study. However, the study was based in Nigeria and focused on the banking sector, whereby secondary data was used. The present study addressed these limitations by focusing on non-life insurance firms in Kenya.

Kakiya et al. (2019) sought to examine the relationship between ERM, intellectual capital, and firm performance among state-owned corporations in Kenya. Using an explanatory cross-sectional survey design, primary data on ERM risk structure practices, intellectual capital, and organizational performance was collected from 218 officials of state corporations. This study is similar in approach and focus to Girangwa et al. (2020), who were only interested in ERM processes. In this study, Kakiya et al. (2019) employed hierarchical regression for data analysis. Findings suggest that "intellectual capital had an enhancing and significant moderation effect on the relationship between ERM structure practice and organizational performance." Additionally, ERM structures, proxied by culture, KRIs, and key performance indicators (KPIs), had a significant effect on organizational performance. Therefore, this study demonstrates that sustained efforts in ERM structure integration led to improved risk management effectiveness, strategic alignment, and financial performance.

2.3.4 ERM Infrastructure Integration and Financial Performance

The studies covered so far that examined all the components of COSO's ERM framework, such as Sajid et al. (2023), Hristov et al. (2024), Li (2018), Kajwang (2022), Martin (2017), and Girangwa et al. (2020) all suggest that the implementation of ERM infrastructures is associated with improved firm performance. Similarly, Mazreku and Poposki's (2012) research demonstrates the strategic importance of ERM infrastructure. In particular, the researchers contend that "the creation of an integrated ERM infrastructure is a strong basis for an adequate function and management of a company facing challenges and different risks." Although insightful and based on the insurance industry as the context, this study is not without limitations. It was conducted in Kosovo and utilized qualitative data and approaches. Therefore, the present research, which focuses on ERM infrastructure integration and Kenya's non-life insurance firms' financial performance, was warranted.

Acharyya and Mutenga's (2013) empirical investigation is an excellent attempt at unraveling the key benefits of implementing ERM in the United State's insurance industry. Based on published company data, the study observed that "building and implementing ERM infrastructures in non-life insurance companies…helps stabilize the long-term bottom line of an insurance company's operations." Therefore, like the studies covered so far, Acharyya and Mutenga's (2013) results,

underscore the importance of ERM infrastructure implementation. The study emphasizes the critical role of robust technological systems, data analytics, and information management in enhancing risk management practices and financial performance. However, since it was based in the United States, findings from the study cannot be generalized to Kenya's non-life insurance sector, hence the need for the present study.

In another study, Sajid et al. (2023a) looked into "The components of ERM and financial performance of non-financial firms through the mediation of corporate reputation." This is another study by Sajid and the collaborators based in Pakistan. After collecting data from 340 participants and performing an analysis using the PLS-SEM technique, findings suggest that "ERM components significantly influence the corporate reputation. Further, corporate reputation positively and significantly mediates between ERM components and financial performance." It is to be noted that the components investigated include "ERM-culture, ERM-Process, ERM-Structure, and ERM-Infrastructure." Therefore, this research demonstrates that sustained efforts in ERM infrastructure integration lead to improved data management effectiveness, technological alignment, and financial performance. It also emphasizes the role of advanced technology adoption, data security measures, and integration of data analytics tools in enhancing risk management capabilities.

In Kenya, Njagi and Njuguna (2017) conducted an "evaluation of the level of ERM adoption and maturity of insurance companies." The primary focus was on the elements of COSO's ERM framework: "ERM policies (risk culture, appetite and strategy, control and monitoring, disclosure and awareness), ERM infrastructure (risk technology, operations, and risk training) and ERM methodology (capital allocation, model vetting, and valuation methods)." 196 respondents from 49 insurance companies were surveyed. Results revealed an inadequate application of the risk management framework as a result of a myriad of factors key among them being the lack of proper structures supporting a robust ERM framework. While resourceful, this study only depicts the status of ERM adoption among insurance companies. It fails to unravel the correlation between ERM and the performance of these companies. Therefore, more research was needed in this field.

2.3.5 Moderating Effect of Regulatory Framework for ERM Implementation

The Insurance Regulatory Authority (IRA) established comprehensive risk management guidelines for the insurance sector in 2013. The guideline found that among the many risks that require management by an insurance company are credit risk, liquidity risk, market risk, and operational risk for the company (IRA 2013). Tola (2020) claims that regulatory demands to withstand the consequences of the financial crisis and comply with Solvency II standards going forward have accelerated the adoption of ERM in non-life insurance firms. The emergence of ERM has also contributed to the "culture" of tightly managed risk managing systems. The rules expedite the process of modifying threats managing programs and procedures and emphasize the importance of ERM. The primary rationale for these laws stems from the financial robustness of these corporations, which plays a role in maintaining the nation's financial stability. Some of the laws and rules that must be followed in order to adapt.

A comprehensive study by Zahoor et al. (2024) demonstrates the interplay between risk management, board effectiveness, and innovation on firm performance as mediated and moderated by corporate governance and government policy in Pakistan. A sample of 350 respondents was recruited from various industrial units, including textile, engineering, chemical, and food processing, hosiery, carpet and rugs, printing and publishing, and medical products. They were required to complete a questionnaire, after which the PLS-SEM method was employed for data analysis. Findings show that “a good connection exists between risk management, board effectiveness, innovation, and corporate governance.” Additionally, “corporate governance significantly mediated the relationship between risk management, board effectiveness, innovation, and the firm’s performance and that government policy significantly moderated the relationship between corporate governance and firm’s performance.” However, the study did not bring out ERM but focused on the conventional TRM, and non-life insurance was not the focus of the study, with the entire study also being based in Pakistan.

In another study that captures the context of Kenya’s insurance scene, Makau and Okeyo (2021) performed a case study to understand how risk underwriting, crisis management, regulatory framework, an performance interact among insurance firms. Therefore, this study is as comprehensive as Zahoor et al.'s (2024). 72 employees of Sanlam General Insurance Company

were surveyed using questionnaires, and data was analyzed using inferential statistics. Findings were as follows: “risk underwriting has a positive and significant effect on performance (β=.682, p=0.000<0.05); crisis management has a mediating effect on the relationship between underwriting and performance while insurance regulations have a positive moderating effect on the nexus between underwriting and insurance performance.” This study, therefore, signifies the importance of regulatory frameworks. However, since a case study was used and ERM not examined, findings from this studied cannot be generalized to the population of the study—non-life insurance companies in Kenya.

Like Zahoor et al. (2024) and Makau and Okeyo (2021), as demonstrated above, Nyandika et al.'s (2022) research confirms the moderating effect of external regulations on the relationship between ERM and transformational leadership. After studying 52 commercial state corporations in Kenya, the researchers held the view that “regulatory framework challenge firms to improve based on constructive and active engagement can be effective in ensuring compliance before a serious problem emerges.” However, it is worth noting that the study sought to examine the moderating effect of regulatory framework on the relationship between ERM and transformational leadership. It was also based on commercial state corporations as the context. Therefore, based on these limitations, findings cannot be inferred from the topic under investigation. More research was, therefore, warranted in this field.

2.4 Research Gaps

While existing studies have explored the financial effect of ERM integration on economic performance, there is a need for more granular research that delves into specific aspects of ERM integration, such as process integration, cultural integration, structure integration, and infrastructure integration. This is because of the geographical scope, contextual, conceptual, and methodological gap identified in the current body of empirical work. These gaps and how they were addressed in the present study are illustrated in Table 2.1.

Table 2. 1: Summary of Empirical Literature and Research Gaps

Author(S)	Title of the Study	Findings	Research Gap	Response to the Gap
Sajid et al. (2023)	"Impact of enterprise risk management on financial performance: exploring the mediating role of business strategies: impact of enterprise risk management on financial performance: exploring the mediating role of business strategies."	"The results revealed that the implementation of ERM components exerted a substantial influence on the financial performance of the firms."	The study was based in Pakistan, denoting a geographical scope gap. It focused on non-financial firms, denoting a contextual gap. Measured the mediating role of business strategies denoting a conceptual gap.	Present study focused on the effect of ERM integration on the performance of non-life insurers in Kenya and regulations as a moderator.
Hristov et al. (2024)	"The integration between enterprise risk management and performance management system: managerial analysis and conceptual model to support the strategic decision-making process."	"ERM and PMS integration provides a supporting tool for effective decision-making for economic and sustainable performance."	The study was based in Italy. Non-financial firms were not the focus, and the effect of ERM on financial performance was not well brought out. Therefore, scope, conceptual, and contextual gaps are apparent.	Present study focused on the effect of ERM integration on the performance of non-life insurers in Kenya and regulations as a moderator.
Girangwa et al. (2020)	"The integration between ERM and PMS: managerial analysis and conceptual model to support the strategic decision-making process."	"Risk structure, governance, and process practices had a positive and significant effect on organizational performance."	The study focused on state-owned corporations, denoting a contextual gap. The moderating effect of the regulatory framework was also not examined.	Present study focused on the effect of ERM integration on the performance of non-life insurers in Kenya and regulations as a moderator.
Kareem et al. (2024)	"Implementation of Sustainable Enterprise Risk	"ERM paradigm helps achieve good risk	The study was based in Nigeria and focused on the	Present study focused on the effect of ERM

Author(S)	Title of the Study	Findings	Research Gap	Response to the Gap
	Management (SERM) paradigm in enhancing transport sector's performance"	governance and organizational objective in normal, volatile and crisis situations."	transport system. Findings were based on qualitative data, of which financial performance was not assessed. Therefore, scope, contextual, conceptual, and methodological gaps are present.	integration on the performance of non-life insurers in Kenya and regulations as a moderator.
Rasedi and Sibindi (2023)	"Enterprise Risk Management Culture and Strategy: A Conceptual Alignment"	"The ERM-strategy alignment is imperative" and that there is a direct link between ERM culture and performance."	The study was based in South Africa, lacked clear context, and used qualitative data and approaches. Therefore, scope, contextual, conceptual, and methodological gaps are present.	Present study focused on the effect of ERM integration on the performance of non-life insurers in Kenya and regulations as a moderator.
Matin (2017)	"Alignment of ERM with Performance Management: The Case Study of Automotive Industry"	"Aligning ERM with organizational performance management is critical in establishing a sustainable ERM and enhancing business performance over time."	The study was based in Iran, denoting a geographical scope gap. It focused on the automotive industry, denoting a contextual gap. Did not focus on financial performance, suggesting a conceptual gap.	Present study focused on the effect of ERM integration on the performance of non-life insurers in Kenya and regulations as a moderate.
Kajwang (2022)	"Theoretical review of ERM culture drivers for insurance firms in Kenya."	"The implementation of ERM culture has a significant impact on the	The study is based on qualitative data, failing to quantify the impact of ERM	Present study focused on the effect of ERM integration on the

Author(S)	Title of the Study	Findings	Research Gap	Response to the Gap
		performance of insurance firms."	culture on the performance of non-life insurance firms.	performance of non-life insurers in Kenya and regulations as a moderator.
Li (2018)	"A study on enterprise risk management and business performance"	'Companies with formal ERM structures registered better financial performance."	The study was based in China and focused on public companies. The moderating effect of regulations was not examined. Thus, scope, contextual, and conceptual gaps are present.	Present study focused on the effect of ERM integration on the performance of non-life insurers in Kenya and regulations as a moderator.
Ping and Muthuveloo (2015)	"The impact of ERM on firm performance in Malaysia."	"ERM structure integration had a significant influence on firm performance."	The study was conducted in Malaysia and focused on PLCs; it does not provide a true picture of ERM structure integration and financial performance of non-life insurance companies in Kenya.	Present study focused on the effect of ERM integration on the performance of non-life insurers in Kenya and regulations as a moderator.
Oyewo (2022)	"Enterprise risk management and sustainability of banks performance"	"ERM enhances long-term performance."	The study was based in Nigeria and focused on the banking sector whereby secondary data was used, denoting scope, contextual, and methodological gaps.	Present study focused on the effect of ERM integration on the performance of non-life insurers in Kenya and regulations as a moderator.
Kakiya et al. (2019)	"Effect of Risk Management, Intellectual	"ERM structures had a significant effect on	The study focused on state-owned corporations, denoting	Present study focused on the effect of ERM

Author(S)	Title of the Study	Findings	Research Gap	Response to the Gap
	Capital on Performance of State Corporations in Kenya: Moderating Approach"	performance; intellectual capital had a significant moderation effect on the relationship between ERM structure practice and performance."	a contextual gap. The moderating effect of intellectual capital was assessed as opposed to the regulatory framework.	integration on the performance of non-life insurers in Kenya and regulations as a moderator.
Mazreku and Poposki (2012)	"Adaptation and implementation of integrated risk management in the insurance industry in Kosovo"	"The creation of an integrated ERM infrastructure is a strong basis for an adequate function and management of a company facing challenges and different risks."	The study was conducted in Kosovo and utilized qualitative data and approaches.	Present study focused on the effect of ERM integration on the performance of non-life insurers in Kenya and regulations as a moderator.
Sajid et al. (2023a)	"The Components of Enterprise Risk Management and Financial Performance of the Non-Financial Firms through Mediation of Corporate Reputation"	"ERM components significantly influence the corporate reputation. Further, corporate reputation significantly mediates between ERM components and financial performance."	The study was based in Pakistan, denoting a geographical scope gap. It focused on non-financial firms, denoting a contextual gap. Measured the mediating role of corporate reputation, denoting a conceptual gap.	Present study focused on the effect of ERM integration on the performance of non-life insurers in Kenya and regulations as a moderator.

Author(S)	Title of the Study	Findings	Research Gap	Response to the Gap
Njagi and Njuguna (2017)	"Evaluation of the Level of Enterprise Risk Management Adoption and Maturity of Insurance Companies in Kenya"	"There was an inadequate application of the risk management framework as a result of a myriad of factors key among them being the lack of proper structures supporting a robust ERM framework."	The study focused on the insurance industry as a whole instead of non-life insurance. It examined the status and maturity of ERM adoption and failed to determine its impact on firm performance.	Present study focused on the effect of ERM integration on the performance of non-life insurers in Kenya and regulations as a moderator.
Nyandika et al. (2022)	"The moderating effect of external regulation on the relationship between transformational leadership and enterprise risk management adoption by commercial state corporations in Kenya"	"External regulations significantly moderate the relationship between ERM and transformational leadership."	The study sought to examine the moderating effect of the regulatory framework on the relationship between ERM and transformational leadership. It was also based on commercial state corporations as the context.	Present study focused on the effect of ERM integration on the performance of non-life insurers in Kenya and regulations as a moderator.
Zahoor et al. (2024)	"Impact of Risk Management, Board Effectiveness and Innovation on Firm Performance- a Mediated and Moderated Model of Corporate Governance and Government Policy"	"Government policy significantly moderated the relationship between corporate governance and firm's performance."	However, the study did not bring out ERM but focused on the conventional TRM, and non-life insurance was not the focus of the study, with the entire study also being based in Pakistan.	Present study focused on the effect of ERM integration on the performance of non-life insurers in Kenya and regulations as a moderator.

Author(S)	Title of the Study	Findings	Research Gap	Response to the Gap
Makau and Okeyo (2021)	"Risk Underwriting, Crisis Management, Regulatory Framework and Performance of Insurance Companies in Kenya: A Case of Sanlam General Insurance Company"	"Risk underwriting has a significant effect on performance; crisis management has a mediating effect on underwriting-performance relationship; regulations have moderating effect on the nexus between underwriting and insurance performance."	The study was used, and ERM was not examined; findings from this study cannot be generalized to the population of the study—non-life insurance companies in Kenya.	Present study focused on the effect of ERM integration on the performance of non-life insurers in Kenya and regulations as a moderator.

Source: (*Author, 2025*)

2.5 Conceptual Framework

An analytical instrument diagrammatically summarizing the variables and the study relationships is called a conceptual framework (Kivunja, 2018). It was employed in research to arrange concepts and draw conceptual differences. An illustration of the link between the independent, intervening, and dependent variables is depicted in Figure 2.1 below. The illustrated relationships between the variables were grounded in the agency theory as the anchoring theory and contingency theory which provided a supporting theoretical framework.

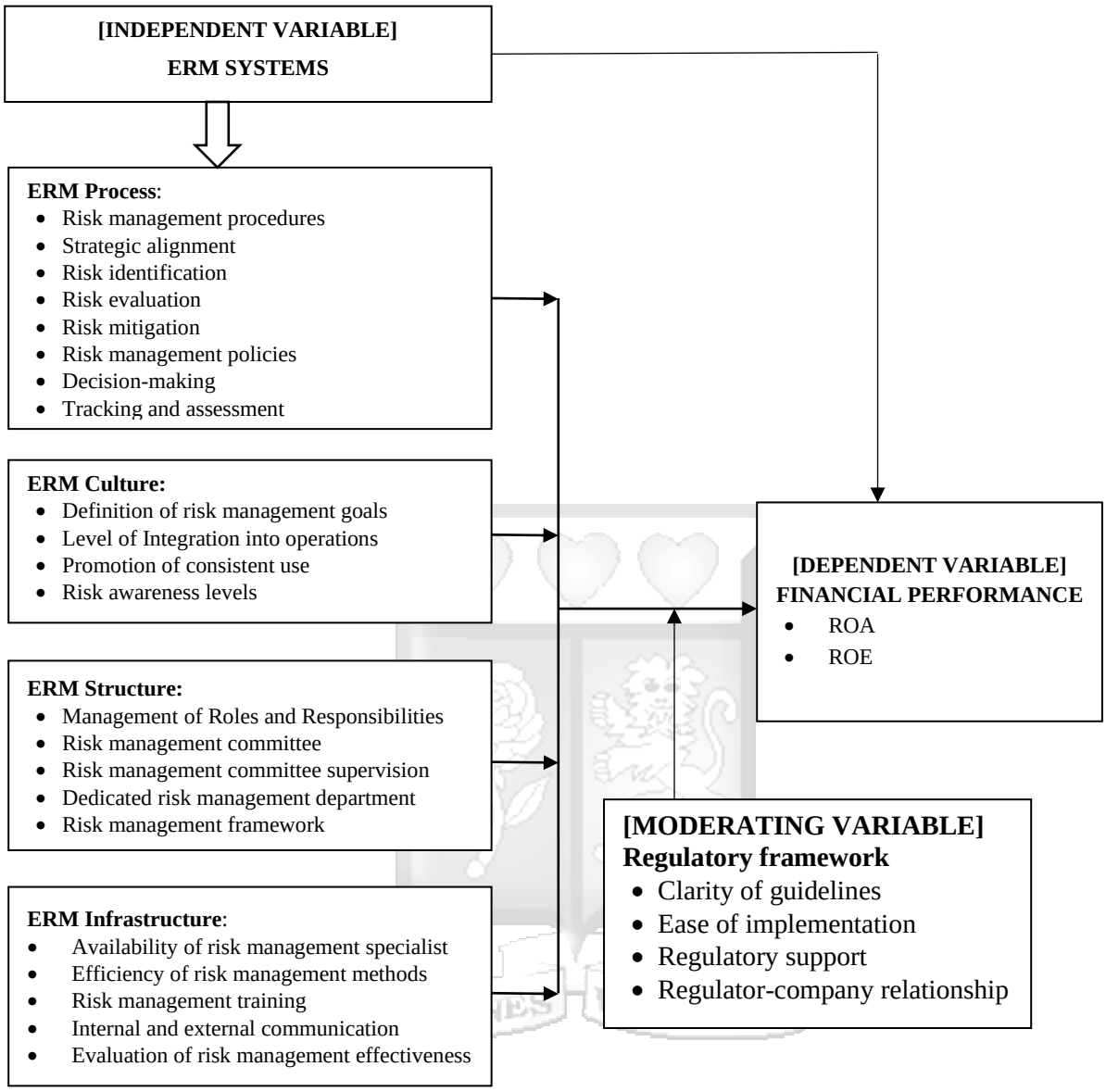

Figure 2. 1: Conceptual Framework

Source: (*Author, 2025*)

2.6 Operationalization of Variables

To assess the effectiveness of the ERM systems and operationalize the financial performance as ROE and ROA, the present study looked at these aspects, which were operationalized as ERM process integration, culture integration, structure integration, and infrastructure integration. To determine if sufficient laws and their enforcement impact how ERM affects the financial performance of non-life insurance, government policies moderating variable were employed.

To determine if the regulatory compliance framework policies increase, negate, and change the way in which the independent and dependent variables are related, they were used as a moderating variable. To determine the moderating impact, it was first operationalized on a categorical scale and then converted into dichotomous data for interaction with the regression model's variables.

Table 2. 2: Operationalization of Variables

Variable	Code	Indicators	Scale	Theory	Source
Independent variables					
ERM Process	EPR	• RM procedures • Strategic alignment • Risk identification • Risk evaluation • Risk mitigation • RM policies • Decision-making • Tracking and assessment	5-point Likert	Agency theory	(Masama et al., 2022; Prewett & Terry, 2018; Salaudeen, 2024)
ERM Culture	ECL	• Definition of RM goals • Integration into operations • Consistency of use • Risk awareness levels	5-point Likert	Agency theory	(Masama et al., 2022; Salaudeen, 2024)
ERM Structure	EST	• Roles and Responsibilities • RM committee • RM committee supervision • Dedicated RM department • RM framework	5-point Likert	Agency theory	(Masama et al., 2022; Salaudeen, 2024)
ERM Infrastructure	EIFS	• RM specialist • Efficiency of RM methods • RM training • Communication • RM effectiveness	5-point Likert	Agency theory	(Masama et al., 2022; Salaudeen, 2024)

Dependent variable					
Financial Performance	FINP	• Profitability • ROA • ROE	Nominal	Contingency theory	(Taouab & Issor, 2019)
Moderating variable					
Regulatory framework	REG	• Clarity of guidelines • Ease of implementation • Regulatory support • Regulator relationship	5-point Likert	Agency theory	(Makau & Okeyo, 2021)

Source: (*Author, 2025*)

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

The research design, target demographic, sampling procedure, and sample size are described in this chapter; moreover, the research instrument, data collecting process, pilot test, validity and reliability analysis, data analysis, and research ethics.

3.2 Research Philosophy

Research philosophy is a collection of beliefs and assumptions that are relied upon in knowledge development (Sekaran & Bougie, 2016). Saunders et al. (2019) allude that, consciously or unconsciously, all studies are anchored on assumptions. They can be broadly classified as human-based knowledge assumptions (epistemological assumptions), realities encountered during research assumptions (ontological assumptions), and assumptions on the extent to which researcher values induce the research (axiological assumptions). According to Cooper and Schindler (2014), these trio assumptions guide the choice of research questions, data choice, and interpretation of findings.

These assumptions above are closely connected to the four common research philosophies: positivism, interpretivism, realism, and pragmatism, each of which has distinct applications in research (Chege & Otieno, 2020; Edson et al., 2017). Positivism is widely used in scientific studies it focuses on objective, quantifiable data to establish universal laws and causality. Interpretivism, in contrast, is applied in social sciences, where researchers seek to understand human experiences, behaviors, and cultural meanings through qualitative methods. Realism, which recognizes both objective reality and subjective perceptions ensures that research accounts for external facts while acknowledging individual interpretations. Pragmatism is highly valuable in problem-solving contexts, where practical outcomes guide research and decision-making rather than adherence to rigid philosophical principles.

This study adopted a positivist approach, as it aimed to generate objective, quantifiable insights into the ERM practices of non-life insurance companies and their impact on financial performance.

Relying on empirical data and statistical analysis helped establish causal relationships, ensuring findings are measurable, replicable, and free from subjective interpretations. The positivist philosophy allowed for a systematic evaluation of the topic, providing factual conclusions that contribute to a deeper understanding of how ERM strategies influence profitability within the non-life insurance sector.

3.3 Research Design

A research design is a methodical set of instructions outlining how the goals of the study are accomplished (Ansari et al., 2022; Kothari, 2004). There are several types of research designs, each serving distinct purposes based on the nature of the study and the research objectives. According to Ansari et al. (2022) and Takona (2024), they include descriptive research design, explanatory research design, exploratory research design, case study, experimental, cross-sectional design, longitudinal design, and correlational design. Each of these research designs has unique applications, ensuring that studies are tailored to their objectives, data collection methods, and analysis techniques for maximum accuracy and relevance.

Descriptive design that systematically describes phenomena without influencing variables; exploratory that aims to investigate new/unclear phenomena to provide insights into potential patterns, relationships, and future research directions; explanatory focuses on establishing causal relationships between variables, determining why certain outcomes occur; experimental involves manipulating variables to assess cause-and-effect relationships; quasi-experimental is similar to experimental research but lacks random assignment; correlational examines the strength and direction of relationships between two or more variables without establishing causation; cross-sectional captures data at a single point in time to analyze trends and patterns; longitudinal involves repeated observations of the same subjects over extended periods; case study provides in-depth analysis of a single entity, organization, or event.

This study applied a descriptive cross-sectional, a research design that combines both descriptive and cross-sectional design elements (Pawar, 2020). This research design was preferred since the study aimed to demonstrate the status of ERM integration within the non-life insurance sector at a particular point in time (Saunders et al., 2023). The design was deemed appropriate for this study,

since it aimed to capture and analyze the phenomenon at a specific point in time. It provided a comprehensive snapshot of existing trends regarding ERM integration and how these trends impact the financial outcomes of non-life insurance firms in Kenya. By adopting this design, the research effectively illustrated patterns, associations, and insights into the subject matter, ensuring that findings were relevant, timely, and reflective of the conditions at the time of the study.

3.4 Target Population

According to Saunders et al. (2019), a target population is an exhaustive list of every factor being considered. Any person for whom the study's findings are applicable constitutes the target group. Therefore, the intended audience consisted of the key stakeholders of 37 non-life insurance businesses. The study focused on 5 responders from the targeted non-life insurance companies' top-level managers, including, CROs, chief finance manager, head of sales/business development, head of claims, and head of underwriting who made up the sample frame for this study.

3.5 Sample Size and Sampling Technique

A sample is a subset of the target population, selected in a study to represent the larger group, from which data is collected and analyzed (Berndt, 2020). The target population, as described above, consist of 37 non-life insurance companies in Kenya. As explained by Taherdoost (2018), this is a manageable population size. Therefore, the study employed a two-stage sampling method. In the first stage, a census approach was used, meaning all 37 non-life insurance firms were included in the study. In the second stage, purposive sampling was applied, where heads of five key departments within these firms were targeted for data collection: CROs, chief finance manager, head of claims, head of sales/business development, and head of underwriting. As such, the study's sample size was 185 respondents.

3.6 Data Collection

This section describes the data type, data collection method, data collection instrument, and data collection procedures that was used in executing the study.

3.6.1 Data Collection Instrument

To collect information in the shortest amount of time and guarantee the production of reliable statistics, it is necessary to build a straightforward, specific, and well-defined research instrument (Chipeta, 2020). Additionally, Cooper and Schindler (2014) said that time and money constraints play a key task in the selection of data gathering tools. As a result, the study employed a structured questionnaire to gather information on the variables of the study: ERM culture, ERM process, ERM structure, ERM infrastructure, and regulatory framework. The unit of measurement was a five-point Likert scale. The research tool's Section A asked questions about the respondents' demographics, and the remaining parts were dedicated to the factors under study.

A data collecting sheet was applied in this study to collect secondary data on financial performance (ROA and ROE) information for the 2023 fiscal year for all 37 non-life insurance companies. Bhattacherjee (2021), who stresses the need for organized data-collecting procedures in research to ensure accuracy and consistency in data-gathering processes, suggests the usage of a data collection sheet.

3.6.2 Data Collection Procedure

The goal of the study often directs the choice of data-gathering method. Primary and secondary data were both gathered for this project, as so far established. According to Chege and Otieno (2020), secondary data is defined as data that was previously gathered and is presently being used in the current study, whereas primary data is defined as the data that was initially acquired for the current study. Questionnaires were distributed to 155 selected respondents, offering both in-person and electronic completion options, depending on each respondent’s preference. Respondents had two weeks to complete the questionnaire. The principal researcher was available for questions and clarifications throughout the data collection period.

Secondary data was extracted from published financial statements and reports. This was possible since the regulator, IRA, mandates that insurance companies prepare and submit financial reports. These statements must adhere to IFRS and any applicable Kenyan reporting standards. ROA and ROE data of the 37 non-life insurance companies were obtained from these reports.

3.7 Data Analysis and Processing

The collected data was processed via three main stages: data cleaning and coding, data entry and data analysis. SPSS version 25 and Microsoft Excel were applied for the purpose of data analysis.

3.7.1 Descriptive Statistics

Descriptive analysis tools like frequencies and percentages were used to summarize the data, while measures of central tendency like mean and measures of deviation were used to interpret the data.

3.7.2 Inferential Statistics

Inferential statistics, both correlational and regression analysis, were applied to establish relationships between variables. Before conducting these analyses, the data underwent a structured preparation process to ensure consistency and compatibility across different datasets. Since primary data was collected from multiple respondents within each non-life insurance firm and intended for firm-level comparison with secondary financial data, individual responses were aggregated to create a single representative value per firm. Specifically, the mean score for each primary variable was computed, aligning the primary data with firm-specific financial ratios from the secondary dataset.

Given that the primary data was collected using a 5-point Likert scale, a transformation was necessary to make it compatible with continuous ratio-level secondary financial data. To achieve this, the primary data was standardized using a linear min-max scaling technique, converting ordinal responses into a continuous numerical range suitable for further statistical analysis. This transformation facilitated the meaningful evaluation of relationships between ERM variables and financial performance.

To demonstrate the degree of association, correlation analysis between the independent and dependent variables was performed (Sen & Das, 2023). Furthermore, regression analysis was ultimately used to demonstrate the predictive effects on the independent variables on the dependent variables. The study's regression models were as follows:

Model 1: $\mathrm{ROA} = \beta_0 + \beta_1 \mathrm{EPR} + \beta_2 \mathrm{ECL} + \beta_3 \mathrm{EST} + +\beta_4 \mathrm{EIFS} + \in$

Model 2: $\mathrm{ROE} = \beta_0 + \beta_1 \mathrm{EPR} + \beta_2 \mathrm{ECL} + \beta_3 \mathrm{EST} + +\beta_4 \mathrm{EIFS} + \in$

Where: ROA=Return on Assets, ROE=Return on Equity, β_0=constant/intercept, β_{1-4}=beta coefficients, $\in$=error term, EPR=ERM process, ECL=ERM culture, EST=ERM structure, and EIFS=ERM infrastructure.

Following regression models were used to assess the moderating effect of regulatory framework:

Model 1: $\mathrm{ROA} = \beta_0 + \beta_1 \mathrm{EPR} + \beta_2 \mathrm{ECL} + \beta_3 \mathrm{EST} + +\beta_4 \mathrm{EIFS} + \beta_5 (\mathrm{EPR} * \mathrm{ECL} * \mathrm{EST} * \mathrm{REG}) + \in$

Model 2: $\mathrm{ROE} = \beta_0 + \beta_1 \mathrm{EPR} + \beta_2 \mathrm{ECL} + \beta_3 \mathrm{EST} + +\beta_4 \mathrm{EIFS} + \beta_5 (\mathrm{EPR} * \mathrm{ECL} * \mathrm{EST} * \mathrm{REG}) + \in$

Where REG=Regulatory framework.

Tables and figures were used to present the findings.

3.7.3 Diagnostic Tests

Prior to modeling, the following assumptions were tested: normality, linearity, heteroskedasticity, and multicollinearity.

Regression modeling assumes that the error term ought to be normally distributed. The normality of the error term was examined through graphical methods such as PP plots, QQ plots, and histograms. The error term is normally distributed if the histogram has a bell shape (Menard, 2014). The lack of normality of the error term was mitigated through data transformation or deletion of outliers.

The variables that are independent and dependent are assumed to have a linear relationship in the regression analysis (Menard, 2014). Linearity was examined through the use of scatter plots or scatter matrices. Lack of linearity may be mitigated through data transformation or deletion of outliers.

The error term is assumed to have uniform variance in the third assumption. The Breusch Pagan test, which pits the hypothesis that the error term's variance is uniform against the alternative that it is not, was used to test it (Menard, 2014). If the p values are less than 0.05, then there is no

uniformity of the error term, thus the need for fitting a regression model with robust standard errors.

An elevated level of association among the independent variables is known as multicollinearity. Tolerance limits and variance inflation factors were used to assess it. There is multicollinearity if the variance inflation factor is larger than 10 or the tolerance limits are smaller than 0.1 (Menard, 2014). In these cases, it is necessary to either enlarge the sample size or eliminate strongly linked variables.

3.8 Research Quality

Pilot tests are used to evaluate the validity and dependability of tools. According to Saunders et al. (2019), 10% of the sample should be used for pilot testing. A small sample of 15 respondents with similar attributes of the target population was randomly assigned to receive the questionnaires as part of a pilot test for this project. To improve the validity and reliability of the data collection tool, pilot testing was carried out to find anomalies that could arise during the actual study.

3.8.1 Reliability of Research Tool

The extent to which a research tool yields reliable results following many trials is known as its reliability (Mohamad et al., 2015). Internal consistency was examined using reliability. To gauge the research instrument's reliability, the Cronbach Alpha coefficient was employed. Cronbach's alpha coefficient, according to Sekaran and Bougie (2016), spans from 0 to 1, with values of 0.7 and above indicating more reliability.

3.8.2 Validity of Research Instrument

According to Mohamad et al. (2015), validity is a property given to a claim or a measurement of how well it adheres to establish the truth or knowledge. A Likert scale, for instance, is considered legitimate to the degree that the tool can measure the things it is intended to assess. It thus characterizes the level to which a data collection tool appropriately presents the relevant queries. The researcher discussed the instrument's components with the assigned supervisor, department

lecturers, and colleagues. The researcher benefited from these individuals' expert opinion and recommendations as they evaluate the validity of the study tools.

3.9 Ethical Issues in Research

Contribution to this research was voluntary. Participants were not coerced in any way to take part in the survey. Before participation, potential respondents provided informed consent after being briefed about the objective of the research and the nature of their participation (Kambhampati et al., 2023). In addition, respondents' confidentiality and anonymity were guaranteed. To preserve anonymity, no respondents' names, addresses, or phone numbers were recorded, and information gathered from the study was not shared with other parties. The Institutional Ethical Review Committee at Strathmore University also authorized this study, and the National Commission for Science, Technology, and Innovation (NACOSTI) thereafter provided a license for it.

CHAPTER FOUR
PRESENTATION OF FINDINGS

4.1 Introduction

This section presents the findings of this study, detailing the analysis of the influence of enterprise risk management (ERM culture, ERM process, ERM structure, and ERM infrastructure) integration on the performance of non-life insurance companies in Kenya. The results are organized and presented using a combination of tables and figures for clarity and ease of interpretation. The section is organized as follows: response rate, respondents' background information, descriptive statistics, and inferential statistics.

4.2 Response Rate

This study initially aimed to collect primary data from five respondents from each of the 37 targeted non-life insurance firms, translating to a sample size of 185. These primary data points were intended to be analyzed in conjunction with secondary financial data extracted from the IRA's annual industry report. However, financial data for 6 of the targeted firms was unavailable in the published report.

As a result, the final targeted respondent sample consisted of 155 respondents, representing five officials of each of the 31 non-life insurance companies for which both primary and secondary data could be obtained. Out of the 155 questionnaires distributed, 108 were completed and returned back in time for the analysis. Upon cleaning, 13 questionnaires were ruled out for errors and missing responses. Therefore, 94 completed questionnaires were eligible for data analysis, yielding a response rate of 60.65%, as illustrated in Table 4.1.

Table 4. 1: Response Rate

Metric	Frequency
Initial targeted non-life insurance firms	37
Initial targeted respondents per insurance firm	5
Initial targeted sample size	185
Firms with unavailable financial data	6
Final targeted non-life insurance firms	31
Final targeted overall respondent sample size	155
Questionnaires distributed	155
Questionnaires filled out and returned	108
Questionnaires excluded (for errors and missing responses)	13
Eligible questionnaires for data analysis	94
Response rate	60.65%

Babbie (2016) considers a response rate of 60.65% sufficient for academic research, particularly in studies involving professional populations where participation may be constrained by time and confidentiality concerns. The scholar further points out that while higher response rates are generally preferred, rates above 50% are often adequate for drawing meaningful conclusions. Moreover, research focused on specific sectors encounters challenges in achieving high response rates due to the specialized nature of the target audience and the sensitive data involved. Therefore, a response rate exceeding 60% provides a reasonable basis for analysis and inference, balancing the practical limitations of data collection with the need for robust findings.

4.3 Background Information

Demographic data of the respondent sample and organizational characteristics were collected to provide a contextual understanding of the findings of the study. This included demographic data of the respondents, such as age, gender, educational qualifications, organizational tenure, and role within the organization, as well as organizational characteristics of the non-life insurance companies, such as years of operations and size (in terms of number of branches). Findings are presented in Table 4.2.

Table 4. 2: Background Information

Background information	Distribution	Frequency	Percentage
Gender	Male	50	53.19%
	Female	44	46.41%
Age	25-35 years	10	10.64%
	36-45 years	43	45.74%
	Over 45 years	41	43.62%
Organizational tenure	Less than 3 years	12	12.77%
	3-5 years	22	23.40%
	6-10 years	33	35.12%
	More than 10 years	27	28.71%
Role within the organization	Chief risk officer	19	20.21%
	Chief finance manager	17	18.09%
	Head of business development	18	19.15%
	Head of underwriting	22	23.40%
	Head of claims	18	19.15%
Education level	Undergraduate	25	26.60%
	Graduate	69	73.40%
Years of operations/service	Under 5 years	1	3.23%
	11-15 years	1	3.23%
	16-20 years	3	9.68%
	More than 20 years	26	83.87%
Number of branches	2-5 branches	4	12.90%
	6-10 branches	7	11.58%
	More than 10 branches	20	64.52%

As shown in the table, both genders were almost equally represented, with male respondents (53.19%) being slightly more than female (46.41%). Also, all the age brackets were represented, but most (89.36%) respondents were aged 35 years and above, with the most age bracket represented being 36-45 years (45.74%). Most (87.23%) respondents had more than 3 years of organizational experience and held graduate degrees (master's or higher) (at 73.40%), as shown in the table. The longer tenure and higher educational qualifications imply that most respondents held valuable institutional knowledge and possessed a deeper understanding of their organization's culture, processes, and industry-specific dynamics. The demographic profile of the respondent

sample was analyzed to assess potential influences on response diversity and the generalizability of the findings.

Regarding firm characteristics, 26 (or 83.87%) of the firms analyzed have had more than decades of operations in the country's non-life insurance industry, with more than 64.52% having more than 20 branches across the country. This means that these firms likely possess a deep understanding of the local market, regulatory environment, and historical risk patterns and have demonstrated resilience and adaptability over a long period. Additionally, a large branch network introduces greater operational complexity, with increased exposure to various risks across different locations. This complexity necessitates robust ERM frameworks to manage risks effectively.

4.4 Descriptive Statistics

This section presents a summary of the main attributes of the dataset for each of the study's variables.

4.4.1 ERM Culture Integration

Respondents were asked to indicate their level of agreement with the aspects of ERM Culture Integration on a 5-point Likert scale, where 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree. Findings are presented in Table 4.3.

Table 4. 3: ERM Culture Integration

	N	Mean	SD
Managers define risk management goals, policies, and tactics in detail.	94	4.0000	1.1255
ERMS is integrated into and compatible with the business's present operations.	94	4.2581	.9650
Supervisors promote consistent ERMS use.	94	3.9677	1.0160
Managers take part in and contribute to the application of enterprise risk management.	94	4.1935	1.0462
Workers understand how important risk management is.	94	3.7419	.8932
Overall Mean		**4.0323**	**1.0092**

The composite mean score for the ERM culture integration was 4.0323 at a 1.0092 standard deviation. This indicates that, on average, respondents tended to "agree" with the statements measuring ERM culture integration. In other words, felt positive about the aspects of ERM culture integration. However, a standard deviation of 1.0092 suggests that there was a moderate degree of variation in how respondents perceived ERM culture integration. This degree of variability can be explained by the diversity of the respondent sample as well as varying organizational statistics.

While the respondents generally felt positive about most of the indicators (sub-variables) of ERM culture integration, as shown in Table 4.3, the item “Workers understand how important risk management is” had the lowest mean score (M=3.7419, SD=.8932). Since the value is close to 4, this means that, in general, respondents had a positive view of the importance of risk management, though not overwhelmingly. A standard deviation of .8932 indicates a relatively moderate level of variation in responses, suggesting the vast majority of the respondents were of the same opinion regarding the statement.

4.4.2 ERM Process Integration

Respondents were asked to indicate their level of agreement with the aspects of ERM Process Integration on a 5-point Likert scale, where 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree. Findings are presented in Table 4.4.

Table 4. 4: ERM Process Integration

	N	Mean	SD
The risk management procedure is often used.	94	3.3548	.7549
The risk management procedure is continuously enhanced to keep up with business activities.	94	3.5484	.8500
For every department, managers develop goals that align with the company's purpose, vision, and goals.	94	3.7742	.9903
Managers can find internal and external problems that could hinder the company's goals by using the right tools and techniques.	94	3.8387	1.0984
Managers evaluate residual and inherent risk.	94	3.5806	.9228
When faced with a risk, managers take appropriate measures to lessen its impact and possibility.	94	3.9032	1.1062
Each control activity's policies and procedures are spelled out so that risks may be addressed efficiently.	94	3.5484	.7229
Each control activity's policies and procedures are spelled out so that risks may be addressed efficiently.	94	3.3871	.9549
Decision-making information is fast, accurate, and dependable.	94	3.9677	.9123
A strategy is in place to track and assess enterprise risk.	94	3.2581	.8152
Overall Mean		**3.6161**	**.9128**

The average score for the ERM process integration variable was 3.6161 at a .9128 standard deviation. This mean score implies that, on average, respondents leaned towards "agreeing" that ERM processes are integrated, but not strongly so. In other words, a significant portion of the respondents felt positive about the aspects of ERM process integration, while the rest remained neutral or were in disagreement. A standard deviation of .9128 suggests that there was a low degree of variation in respondents' opinions of ERM process integration.

The observation above was consistent for all the indicators of ERM process integration except for the following statements: "Decision-making information is fast, accurate, and dependable" (M=3.7419, SD=.8932) and "A strategy is in place to track and assess enterprise risk" (M=3.7419, SD=.8932) which had the highest and lowest mean scores, respectively. This signifies that, on average, respondents were in agreement that decision-making processes within their respective

firms were fast, accurate, and dependable. However, they largely remained neutral on the idea that strategies were in place for tracking and assessing enterprise risks, with responses leaning more towards “agree.”

4.4.3 ERM Structure Integration

Respondents were asked to indicate their level of agreement with the aspects of ERM Structure Integration on a 5-point Likert scale, where 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree. Findings are presented in Table 4.5.

Table 4. 5: ERM Structure Integration

	N	Mean	SD
The managers and board of directors participate in and contribute to developing the enterprise risk management system.	94	3.5484	.9252
The Enterprise Risk Management System is directly under the jurisdiction of a committee.	94	3.5806	1.1482
The Enterprise Risk Management System is being developed under direct committee supervision.	94	3.3226	1.1658
A department is in charge of deciding on the policy and carrying it out by using the Enterprise Risk Management System's vision.	94	3.5806	1.0886
Every employee uses the same framework for risk management.	94	3.8065	1.0462
Overall Mean		**3.5677**	**1.0748**

The overall mean for the ERM structure integration was 3.5677 at a 1.0748 standard deviation. A mean of 3.5677 falls in the 3-4 range of the scale but is close to “agree,” implying that, on average, respondents tended to "agree" with the aspects measuring ERM process integration, although not strongly so. However, a standard deviation of 1.0748 suggests that responses deviated moderately from the mean value, which indicates that the opinions and perceptions of ERM process integration varied moderately, with most of them being positive. The mean scores and standard deviations for all the statements centered around the mean score, as shown, suggesting that the respondents felt the same about all the statements.

4.4.4 ERM Infrastructure Integration

Respondents were asked to indicate their level of agreement with the aspects of ERM Infrastructure Integration on a 5-point Likert scale, where 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree. Findings are presented in Table 4.6.

Table 4. 6: ERM Infrastructure Integration

	N	Mean	SD
The organization employs a risk management specialist.	94	3.7097	1.0064
An efficient method exists for assessing risk management.	94	3.3226	1.1072
The organization offers suitable risk management training and knowledge-sharing sessions to its staff.	94	3.9032	.9436
For risk management, there are routes for both internal and external communication.	94	3.4516	3.3548
Every so often, the effectiveness of risk management is evaluated.	94	3.3548	1.0816
Overall Mean		**3.5484**	**1.1002**

The composite mean for the ERM infrastructure integration variable was 3.5484 at a 1.1002 standard deviation. This value is close to the “agree” score of the scale, suggesting that, on average, respondents tended to "agree" with the aspects measuring ERM infrastructure integration, although not overwhelmingly. Also, a standard deviation of 1.1002 indicates that responses deviated strongly from the mean value, signifying that the perception towards ERM infrastructure integration strongly varied. In other words, the respondents held inconsistent opinions on the integration of ERM infrastructure in their respective non-life insurance firms.

The statement, “When faced with a risk, managers take appropriate measures to lessen its impact and possibility,” had the highest mean score (M=3.9032, SD=1.1062). This means that respondents generally agreed with the view that managers take appropriate responsive actions in times of crises in order to lessen impact and possibility. However, the statement, “An efficient method exists for assessing risk management,” had the lowest mean (M=3.3226, SD=1.1072). This observation means that respondents remained neutral on the existence of efficient methods for risk management but with most responses being positive.

4.4.5 Regulatory Framework

Respondents were asked to indicate their level of agreement with the aspects of the regulatory framework for ERM on a 5-point Likert scale, where 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree. Findings are presented in Table 4.7.

Table 4. 7: ERM Regulatory Framework

	N	Mean	SD
There are clear regulatory guidelines on enterprise risk management expectations.	94	3.8387	.6878
The enterprise risk management framework provided by the Regulator is easy to implement.	94	4.000	.7303
The Regulator provides the necessary support for the Implementation of enterprise risk management.	94	3.7742	.8450
The company management is compliant with the enterprise risk management regulatory policies.	94	4.3548	.5507
There is a good working relationship between the Regulator and the insurance firm.	94	4.0968	.7463
Overall Mean		**4.0129**	**.7120**

The overall mean score for the ERM regulatory framework variable was 4.0129 at a .7120 standard deviation. This indicates that, on average, respondents tended to "agree" with the aspects of the regulatory framework for ERM for the non-life insurance sector. Furthermore, a standard deviation of .7120 suggests that there was a low degree of variation in how respondents perceived ERM regulatory frameworks. In other words, the perception towards regulations for ERM integration among the respondents was mostly consistent.

The statements, “There are clear regulatory guidelines on enterprise risk management expectations” (M=3.8387, SD=.6878) and “The Regulator provides the necessary support for the Implementation of enterprise risk management” (M=3.7742, SD=.8450), had the lowest mean scores. For the two items, although the statements leaned towards the agreement, there was a sense of neutrality and negative perceptions towards the clarity of regulatory guidelines and the support from the regulator for ERM implementation.

4.4.6 Financial Performance

Secondary financial data (ROA and ROE) for the 31 targeted non-life insurance companies was also gathered for the analysis. A summary of the data is provided in Table 4.8.

Table 4. 8: Financial Performance

	N	Mean	SD	Min	Max	Kurtosis	Skewness
ROA	31	.02005	.06217	-.16995	.12630	2.55648	-1.25457
ROE	31	.02842	.08967	-2.36081	.66681	18.4827	-3.88791

From the table above, since ROA measures how efficiently a company uses its assets to generate profits, an overall mean of .02005 indicates that, on average, the non-life insurance firms in the sample achieved a 2.005% return on their assets. This suggests relatively modest profitability in terms of asset utilization. The standard deviation value of .06217 is relatively high, considering the mean, indicating significant variability in ROA among the firms. This reveals that some companies performed significantly better or worse than the industry average, as confirmed by the minimum (-.16995) and maximum (.12630) ROA values reported. The Skewness and Kurtosis values indicate that there were more companies with lower ROA values and fewer companies with very high ROA values.

Furthermore, since ROE measures how much profit a company generates with the money shareholders have invested, a mean of .02842 implies that, on average, the non-life insurance companies featured in the study achieved 2.842% returns for shareholders, which is relatively modest. The .08967 standard deviation is significantly greater than ROE, indicating greater variability in shareholder returns. This is shown by the least (-2.36081) and the most (.66681) recorded values for ROE. Like ROA, the Skewness and Kurtosis values indicate that there were more companies with lower ROE values and fewer companies with very high ROE values.

4.5 Establishing Relationships

This study utilized correlation and multiple regression analysis to establish the relationships between the variables. Prior to these analyses, the data underwent a series of preparation steps. Given that primary data was collected from multiple respondents within each non-life insurance

firm and was intended to be analysed alongside firm-level secondary financial data, the individual responses were aggregated. Specifically, the mean of the responses for each primary variable was calculated, yielding a single representative value per firm. This aggregation aligned the primary data with the firm-specific secondary financial ratios.

Then, the primary data, collected using a 5-point Likert scale, necessitated a transformation to be compatible with the continuous ratio-level secondary financial data. To facilitate this, the primary data was standardized using a linear min-max scaling technique. This method converted the ordinal scale responses into a continuous scale, allowing for meaningful relationship analysis with the ratio-level financial data. While min-max scaling transforms ordinal data into a continuous numerical range, it does not fundamentally alter the underlying ordinal nature of the original responses (Shantal et al., 2023). On the contrary, it provides a practical method for statistical analysis when integrating ordinal and ratio data.

4.5.1 Correlation Analysis

Because of the nature of the data, the study performed a Pearson's r correlation analysis to examine the association between the variables of the study. Findings are presented in Table 4.9.

Table 4. 9: Correlation Analysis

		ROA	ROE	ECLTR	EPRCSS	ESTRCTR	EINFRA
Pearson Correlation	ROA	1					
	ROE	.584**	1				
	ECLTR	.919**	.526**	1			
	EPRCSS	.936**	.496**	.967**	1		
	ESTRCTR	.941**	.491**	.961**	.975**	1	
	EINFRA	.934**	.481**	.970**	.975**	.993**	1

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

As revealed above, ROA exhibits very strong positive correlations with all ERM integration variables (ERM Culture, ERM process, ERM structures, ERM infrastructure), with Pearson's r values ranging from .919 to .941. Also, the correlations are highly significant ($p<.01$), indicating a strong linear relationship. The strong positive correlations between ROA and ERM integration suggest that companies with well-integrated ERM cultures, processes, infrastructure, and

structures tend to have higher ROAs. This implies that effective ERM practices significantly contribute to efficient asset utilization and profitability.

ROE shows moderate positive correlations with the ERM integration variables, with Pearson's r values ranging from .481 to .526. These correlations are also statistically significant ($p<.01$), although weaker than those with ROA, as described above. The moderate positive correlations between ROE and ERM integration indicate that ERM practices also have a positive, although less pronounced, effect on returns to shareholders. In other words, this suggests that ERM contributes to shareholder value, but not to a substantial degree.

4.5.2 Diagnostic Tests

Prior to conducting regression analysis, a series of diagnostic tests were performed to assess the validity of the regression model. These tests were specifically designed to verify that the following assumptions of regression were satisfied: homoscedasticity of residuals, normality of residual distribution, independence of residuals, and the absence of multicollinearity among the predictor variables. These tests were conducted for both the regression models used for the study, one predicting ROA and another ROE.

4.5.2.1 Test for Heteroscedasticity

Heteroscedasticity tests were conducted to assess whether the assumption of homoscedasticity was violated in either of the study's two regression models. To achieve this, residuals were plotted against fitted values to have a visual examination of the variances of the errors (residuals) and if they were constant across all levels of the independent variables (or fitted values). The findings are shown in Figure 4.1.

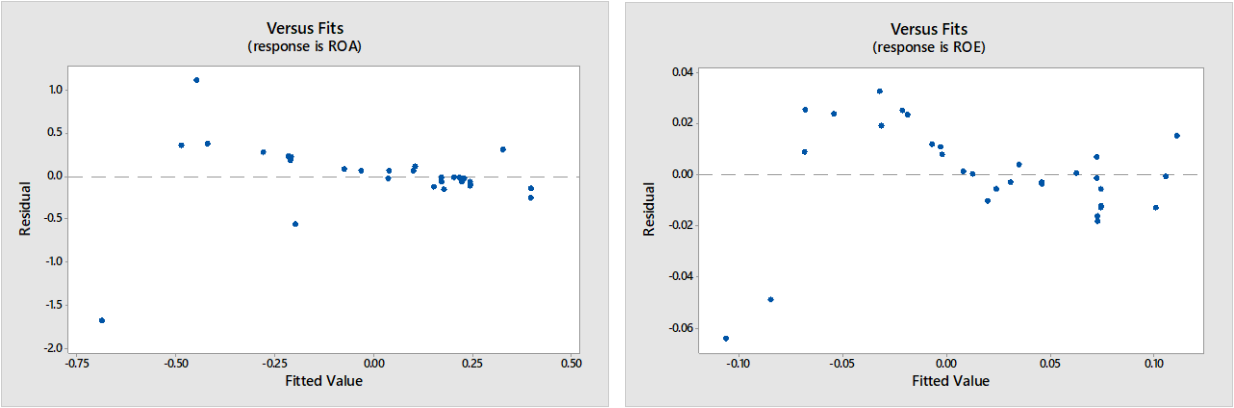

Figure 4. 1: Residuals Versus Fits plots

In the ideal scenario, the residuals should be randomly scattered around zero, forming a horizontal band with no discernible pattern, thus indicating homoscedasticity. In this case, the ideal scenario was not achieved. However, the Residuals Versus Fits plots above show weak evidence of heteroscedasticity for both models. This is because the residuals are scattered around the horizontal line at zero.

4.5.2.2 Normality Test

The normality of residuals was evaluated for both regression models by generating histograms, allowing for a visual inspection of the residual distributions against the expected bell-shaped curve of a normal distribution. Results are shown in Figure 4.2.

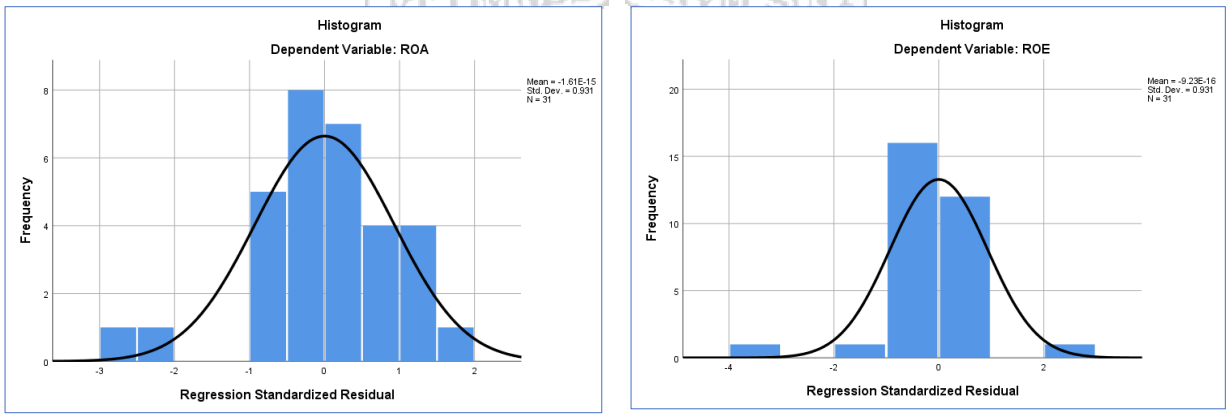

Figure 4. 2: Histogram

Based on the visual inspection of the histograms and their comparison to the normal curve, the residuals appear to be approximately normally distributed. As noted, there are no obvious

deviations from normality, such as strong skewness or heavy tails. Most of the data points are clustered around the center, which is consistent with a normal distribution. Also, there are no extreme outliers that would suggest non-normality. Therefore, the normality assumption was not violated.

4.5.2.3 Test for Autocorrelation

The Durbin-Watson (D-W) statistic, a measure of first-order autocorrelation, was employed to test for the independence of residuals, ensuring that error terms were not serially correlated. Results for both models are shown in Table 4.10.

Table 4. 10: Durbin-Watson Statistic

Model	Variables	D-W statistic	Interpretation
Model 1	ROA~ ECLTR, EPRCSS, ESTRCTR, EINFRA	D-stat=2.073 Alpha=.05	No sig. autocorrelation
Model 2	ROE~ ECLTR, EPRCSS, ESTRCTR, EINFRA	D-stat = 1.948 Alpha=.05	No sig. autocorrelation

The D-W statistic measures the ratio of squared differences between successive residuals to the total sum of squared residuals, with values ranging from 0 to 4. A DW value of 2 indicates that there is no autocorrelation. In this case, DW values of 2.073 and 1.948 for models 1 and 2, respectively, are close to the ideal DW value of 2. Therefore, first-order autocorrelation was not a concern.

4.5.2.4 Test for Multicollinearity

The Variance Inflation Factor (VIF) test was employed to check for whether the predictor variables were highly correlated. The results of the analysis are shown in Table 4.11.

Table 4. 11: Variance Inflation Factor test

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	ECLTR	.468	2.135
	EPRCSS	.372	2.689
	ESTRCTR	.543	1.840
	EINFRA	.503	1.990
a. Dependent Variable: ROA			
2	(Constant)		
	ECLTR	.468	2.135
	EPRCSS	.372	2.689
	ESTRCTR	.543	1.840
	EINFRA	.503	1.990
b. Dependent Variable: ROE			

A VIF value of 1 indicates no multicollinearity, whereas values greater than 1 suggest the presence of multicollinearity. A common rule of thumb is that VIF values greater than 10 indicate significant multicollinearity (Menard, 2014). In this case, all the constructs had VIF values less than 10, indicating the absence of significant multicollinearity among the predictor variables.

4.5.3 Regression Analysis

Having validated both regression models using multiple regression diagnostics, the study proceeded to compute multiple regression analysis to determine the predictive relationship between ERM integration variables (ERM Culture, ERM process, ERM structures, and ERM infrastructure) and financial performance (ROA and ROE) of the targeted non-life insurance firms in Kenya.

4.5.3.1 ERM Integration and ROA

A model summary was generated as the initial step of the regression analysis to examine the proportion of variance in the dependent variable (ROA) that is collectively explained by the independent variables (ERM Culture, ERM process, ERM structures, and ERM infrastructure). The results of this analysis are presented in Table 4.12.

Table 4. 12: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.946[a]	.894	.878	.02173049

a. Predictors: (Constant), ECLTR, EPRCSS, ESTRCTR, EINFRA
b. Dependent Variable: ROA

In the table above, R, also referred to as the multiple correlation coefficient, represents the correlation between the observed value of ROA predicted by the regression model. Therefore, an R-value of .946 indicates a very strong positive correlation between the predictor variables (the four ERM practices) and the dependent variable, i.e., ROA.

R Square is known as the coefficient of determination and it represents the proportion of the variance in the outcome variable that is collectively explained by the independent variables. In this case, an R-Square value of .894 implies that 89.4% of the variance in ROA is accounted for by the four predictors (i.e., ERM Culture, ERM process, ERM structures, and ERM infrastructure). This is a very high value since it is closer to 1, indicating a strong predictive power of the regression model.

The Adjusted R Square is still the R Square that is adjusted to the number of predictor variables in a regression model. Therefore, in this case, even when adjusted for the four predictors, the Adjusted R Square value of .878 implies that the model is a good fit, since 87.8% of the variance in ROA is still explained by the model. Lastly, the Std. Error of the Estimate represents the standard deviation of the residuals. In this case, a value of .02173049 suggests that the predicted values are closer to the observed values, further confirming a better fit of the model.

Then, with the insights of the model summary above, the study proceeded to perform an analysis of variance (ANOVA) to examine the overall significance of the study's regression model. The purpose of this analysis was to assess whether the four predictors, as a whole, exhibited a statistically significant prediction of the dependent variable. Results are shown in Table 4.13.

Table 4. 13: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.104	4	.0259163	54.883	.000[b]
	Residual	.012	26	.0004722		
	Total	.116	30			

a. Dependent Variable: ROA
b. Predictors: (Constant), ECLTR, EPRCSS, ESTRCTR, EINFRA

The Sum of Squares in the table above represents the variability in the dependent variable that is explained by the regression model. Therefore, a total Sum of Squares of .116 is the overall variability, of which .104 represents the variability that is explained by the regression model, and .012 is the variability that is not explained by the regression model (that is, error terms).

The F-statistic tests the overall significance of the regression model. It is obtained by dividing the Mean Square of the regression by the Mean Square of the residuals. In this case, the F-statistic value of 54.883 is relatively large, implying that the independent variables (ERM practices), as a group, significantly predict ROA. The level of significance (Sig or p-value) is associated with the F-statistic in that it examines the overall significance of the model. Therefore, a .000 level of significance ($p<.05$) indicates that the overall model is statistically significant. As such, the four ERM practices—ERM Culture, ERM process, ERM structures, and ERM infrastructure—are reliable predictors of ROA of non-life insurance firms in Kenya.

From the above, the results of the ANOVA analysis confirm that the four sets of predictors, as a group, significantly predict the dependent variable. This means that at least one of the variables is a significant predictor of the dependent variable. Therefore, the study sought to determine the individual contribution and statistical significance of each independent variable in predicting the dependent variable by performing regression coefficients. The results are presented in Table 4.14.

Table 4. 14: Coefficients

Model		Unstandardized Coefficients		t	Sig.
		B	Std. Error		
1	(Constant)	-.2289	.02571263	-8.9025	.0000
	ECLTR	.0101	.01927793	.52632	.0060
	EPRCSS	.0260	.02547756	1.0048	.0324
	ESTRCTR	.0584	.03836315	1.5213	.0140
	EINFRA	.0261	.03902329	.66987	.0051

a. Dependent Variable: ROA

The Unstandardized Coefficients (B) in the table above represent the change in the dependent variable for a one-unit change in an independent variable, while holding all other independent variables constant; Std. Error indicates the variability of the coefficient estimates; the t-statistic examines the statistical significance of each individual coefficient; and Sig. (p-value) which is associated with the t-statistic, indicates the probability of obtaining the observed results if there were no relationship between the independent and dependent variables.

Therefore, as observed, all the independent variables have a statistically significant positive relationship with the dependent variable. Therefore, all predictors, ERM culture ($B=.0101$, $p<.05$), ERM process ($B=.0260$, $p<.05$), ERM structure ($B=.0584$, $p<.05$), and ERM infrastructure ($B=.0261$, $p<.05$), have a positive and statistically significant effect on ROA. In other words, the four ERM practices significantly contribute to efficient asset utilization for profitability among non-life insurance companies in Kenya. ERM structures has the strongest effect of the four practices, with ERM culture having the least impact, based on the beta coefficient values.

Therefore, the final regression model for ROA is as follows:

$$ROA = -.2289 + .0101ECLTR + .0260EPRCSS + .0584ESTRCTR + .0261EINFRA + \in$$

From the equation above, it is worth noting that when all independent variables were zero (i.e., the absence of ERM Culture, process, structures, and infrastructure), ROA would be a negative value, -.2289 (constant/intercept), which further highlights the importance of the four ERM integration practices. In other words, the absence of the four ERM practices will cause non-life insurance firms in Kenya to utilize assets inefficiently, leading to losses.

4.5.3.2 ERM Integration and ROE

The regression model was also performed to determine the predictive relationship between ERM integration and ROE in non-life insurance companies. First, a model summary was generated to examine the proportion of variance in the dependent variable that is collectively explained by the independent variables. The results of this analysis are presented in Table 4.15.

Table 4. 15: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.560[a]	.313	.208	.44437096

a. Predictors: (Constant), ECLTR, EPRCSS, ESTRCTR, EINFRA
b. Dependent Variable: ROE

In the table above, the R-value of .560 indicates a moderate positive correlation between the predictor variables (ERM practices) and ROE. The R-Square value of .313 implies that the four ERM practices account for up to 31.3% variability in ROE in non-life insurance companies. Even when adjusted for the number of predictors, the model still predicts 20.8% of variability in the dependent variable. Compared to ROA, the model is not a strong predictor of ROE in Kenya's non-life insurance companies.

The ANOVA was performed to examine the overall significance of the regression model, that is, to examine whether the four predictors, as a whole, exhibited a statistically significant prediction of the dependent variable. Results are shown in Table 4.16.

Table 4. 16: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.343	4	.5858133	2.967	.038[b]
	Residual	5.134	26	.1974656		
	Total	7.477	30			

a. Dependent Variable: ROE
b. Predictors: (Constant), ECLTR, EPRCSS, ESTRCTR, EINFRA

The total Sum of Squares of 7.477 is the overall variability, of which 2.343 represents the variability that is explained by the regression model, and 5.134 is the variability that is not explained by the regression model. The F-statistic value of 2.967 is relatively low; nonetheless, it

implies that the independent variables, as a group, significantly predict ROE. This is confirmed by the Sig. level, which is less than .05. Therefore, the four ERM practices—ERM Culture, ERM process, ERM structures, and ERM infrastructure—are reliable predictors of ROE of non-life insurance firms in Kenya.

The study sought to determine the individual contribution and statistical significance of each independent variable in predicting the dependent variable by performing regression coefficients. The results are presented in Table 4.17.

Table 4. 17: Coefficients

Model		Unstandardized Coefficients		t	Sig.
		B	Std. Error		
1	(Constant)	-1.4126	.52580263	-2.68658	.0124
	ECLTR	.5902	.39424683	1.49712	.0146
	EPRCSS	-.0643	.52099557	-0.12340	.0903
	ESTRCTR	.6957	.78449551	0.88687	.0383
	EINFRA	-.8986	.79799491	-1.12611	.2704

a. Dependent Variable: ROE

In the table above, some independent variables have a statistically significant positive relationship with the dependent variable, while others exhibit an inverse relationship. ERM culture (B=.5902, p<.05) and ERM structure (B=.6957, p<.05) have a significant positive effect on ROE. This means that non-life insurance companies that actively adopt ERM culture and ERM structures realize increased returns for their shareholders. On the other hand, the ERM process (B=-0643, p>.05) and ERM infrastructure (B=-.8986, p>.05) have a negative nonsignificant effect on ROE. This means that any changes to ERM processes and infrastructure will not result in a meaningful change in the returns for shareholders.

Therefore, the final regression model for ROA is as follows:

ROE = -1.4126+ .5902ECLTR - .0643EPRCSS + .6957ESTRCTR - .8986EINFRA + ∈

From the equation above, it is worth noting that when all independent variables were zero (i.e., the absence of ERM Culture, process, structures, and infrastructure), ROE would be a negative value, -1.4126 (constant/intercept), which further highlights the importance of the four ERM integration

practices. In other words, the absence of the four ERM practices will cause non-life insurance firms in Kenya to realize negative returns (losses) for their shareholders.

4.5.3.3 Moderating Effect of Regulatory Framework

The study further sought to determine the moderating effect of regulatory framework on the influence of ERM integration on the financial performance of non-life insurance companies in Kenya. To achieve this, interaction terms for independent and moderating variables were established before testing for moderation. Then, the study ran a linear regression analysis, including the original independent variables, the moderating variable, and the interaction terms. The results of the model summary for the first regression model are presented in Table 4.18.

Table 4. 18: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.953[a]	.908	.889	.02068712
2	.957[b]	.916	.880	.02156803

a. Predictors: (Constant), EPRCSS, ECLTR, ESTRCTR, EINFRA, REG

b. Predictors: (Constant), EPRCSS, ECLTR, ESTRCTR, EINFRA, REG, EINFRA_x_REG, ECLTR_x_REG, EPRCSS_x_REG, ESTRCTR_x_REG

From the table above, the first regression model, which included the ERM components (process, culture, structure, and infrastructure) as well as the regulatory framework, explains 90.8% of variance in ROA. The second model, which added the interaction terms (ERM Process x Regulatory Framework, ERM Culture x Regulatory Framework, ERM Structure x Regulatory Framework, and ERM Infrastructure x Regulatory Framework) explain an additional 0.8%, bringing the total variance explained to 91.6%. These findings suggests that both models were good fit for the data.

The ANOVA analysis was conducted to examine the overall significance of the models. Results are shown in Table 4.19.

Table 4. 19: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.105	5	.021	49.184	.000[b]
	Residual	.011	25	.000		
	Total	.116	30			
2	Regression	.106	9	.012	25.360	.000[c]
	Residual	.010	21	.000		
	Total	.116	30			

a. Dependent Variable: ROA

b. Predictors: (Constant), EPRCSS, ECLTR, ESTRCTR, EINFRA, REG

c. Predictors: (Constant), EPRCSS, ECLTR, ESTRCTR, EINFRA, REG, EINFRA_x_REG, ECLTR_x_REG, EPRCSS_x_REG, ESTRCTR_x_REG

Both models are statistically significant as demonstrated above. The first model, with the key variables of the study (ERM components and regulatory framework) is statistically significant at $F(5, 25) = 49.184$, $p<.001$ whereas the second model with the key variables and the interaction terms is statistically significant at $F(9, 21) = 25.360$, $p<.001$. Therefore, both models are reliable predictors of ROA within the non-life insurance sector.

The study performed regression of coefficient analysis to examine the predictive effect of the key variables and the interaction terms. This was done to examine whether changes in the current regulatory environment moderates the effects of ERM integration on non-life insurance firms' ROA. Findings are shown in Table 4.20.

Table 4. 20: Coefficients

Model		Unstandardized Coefficients		t	Sig.
		B	Std. Error		
1	(Constant)	-.099	.012	-8.526	.000
	EPRCSS	.185	.092	2.011	.055
	ECLTR	-.037	.065	-.561	.580
	ESTRCTR	.163	.126	1.298	.206
	EINFRA	-.054	.128	-.423	.676
	REG	-.045	.023	-1.921	.066
2	(Constant)	-.084	.022	-3.832	.001
	EPRCSS	-.005	.258	-.020	.984
	ECLTR	-.002	.142	-.017	.987
	ESTRCTR	.317	.259	1.223	.235
	EINFRA	-.113	.239	-.473	.641
	REG	-.083	.059	-1.408	.174
	ECLTR_x_REG	.061	.208	.293	.772
	EPRCSS_x_REG	.228	.370	.616	.545
	ESTRCTR_x_REG	-.421	.685	-.615	.545
	EINFRA_x_REG	.221	.655	.337	.740

a. Dependent Variable: ROA

Results of regression of coefficients show that, when the moderator variable is introduced, none of the variables has statistically significant effect on ROA, both in the first and the second model, as denoted by the beta coefficients, t-statistics, and p-values. Additionally, the interactions terms in the second model do not significantly affect non-life insurance firms' ROA. This finding indicates that the current regulatory framework does not moderate the influence of ERM integration on ROA. In other words, an increase in regulations and policies for insurance industry's enterprise risk management would not produce meaningful impact on ERM's ability to achieve greater return on assets among non-life insurance firms.

The study also sought to determine the moderating effect of regulatory frameworks on the relationship between ERM practices and the ROE of non-life insurance companies. The results of the model summary for the first regression model are presented in Table 4.21.

Table 4. 21: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.561[a]	.314	.177	.45280339
2	.668[b]	.447	.210	.44380529

a. Predictors: (Constant), EPRCSS, ECLTR, ESTRCTR, EINFRA, REG

b. Predictors: (Constant), EPRCSS, ECLTR, ESTRCTR, EINFRA, REG, EINFRA_x_REG, ECLTR_x_REG, EPRCSS_x_REG, ESTRCTR_x_REG

From the table above, the first regression model, which included the four ERM components and regulatory framework, explains 31.4% of variance in ROE. The second model, which added the interaction terms explain an additional 13.3%, bringing the total variance explained to 44.7%.

The ANOVA analysis was conducted to examine the overall significance of the models. Results are shown in Table 4.22.

Table 4. 22: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.352	5	.470	2.294	.076[b]
	Residual	5.126	25	.205		
	Total	7.477	30			
2	Regression	3.341	9	.371	1.885	.111[c]
	Residual	4.136	21	.197		
	Total	7.477	30			

a. Dependent Variable: ROE

b. Predictors: (Constant), EPRCSS, ECLTR, ESTRCTR, EINFRA, REG

c. Predictors: (Constant), EPRCSS, ECLTR, ESTRCTR, EINFRA, REG, EINFRA_x_REG, ECLTR_x_REG, EPRCSS_x_REG, ESTRCTR_x_REG

The results presented in the table above suggest that neither of the two models is statistically significant, as shown by the values of the F-statistic and p-value. Therefore, both models are not reliable predictors of ROE within Kenya's non-life insurance sector.

The study performed regression of coefficient analysis to examine the predictive effect of the key variables and the interaction terms. This was done to examine whether changes in the current

regulatory environment moderates the impacts of ERM integration on non-life insurers' ROE. Findings are shown in Table 4.23.

Table 4. 23: Coefficients

Model		Unstandardized Coefficients		t	Sig.
		B	Std. Error		
1	(Constant)	-.669	.253	-2.641	.014
	EPRCSS	.056	2.015	.028	.978
	ECLTR	1.617	1.427	1.133	.268
	ESTRCTR	2.284	2.748	.831	.414
	EINFRA	-2.975	2.793	-1.065	.297
	REG	-.103	.511	-.202	.842
2	(Constant)	-1.287	.452	-2.849	.010
	EPRCSS	3.031	5.301	.572	.573
	ECLTR	.313	2.915	.107	.916
	ESTRCTR	.318	5.338	.060	.953
	EINFRA	-.669	4.917	-.136	.893
	REG	1.607	1.215	1.322	.200
	ECLTR_x_REG	-2.237	4.285	-.522	.607
	EPRCSS_x_REG	-1.104	7.622	-.145	.886
	ESTRCTR_x_REG	6.335	14.097	.449	.658
	EINFRA_x_REG	-6.115	13.482	-.454	.655

a. Dependent Variable: ROE

Results of regression of coefficients show that, when the moderator variable is introduced, none of the variables significantly effect on ROE, both in the first and the second model, as denoted by the beta coefficients, t-statistics, and p-values. Also, the interactions terms do not significantly affect ROE. This finding indicates that the current regulatory framework does not moderate the influence of ERM integration on ROE. This means that an increase in regulations and policies for insurance industry's enterprise risk management would not produce meaningful impact on ERM's ability to achieve greater return for shareholders by non-life insurance firms.

Therefore, this study concludes that regulatory frameworks do not have a significant moderating effect on the influence of ERM integration on non-life insurance firms' financial performance.

CHAPTER FIVE
SUMMARY, DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

5.1 Introduction

The aim of this study was to examine the effect of enterprise risk management integration on the financial performance of non-life insurance companies operating in Kenya with the moderating effect of regulatory framework. This concluding chapter builds upon the previous sections by presenting a concise summary of the empirical findings, accompanied by a comprehensive discussion of those findings and their implications. It closes with a conclusion and recommendations, as well as suggestions for future research.

5.2 Summary of the Findings

Questionnaires were distributed to 155 respondents across 31 non-life insurance companies. A total of 94 questionnaires were returned, yielding a response rate of 60.65%. This respondent sample comprised a near-equal gender distribution, with a majority holding graduate degrees and significant organizational tenure, primarily within the 36-45 and over 45 age brackets. Participants represented key organizational roles, including risk, finance, and underwriting. They also predominantly worked for insurance firms with over 20 years of operation and more than 10 branches nationwide.

Findings from descriptive statistics suggest that, on average, respondents felt positive about ERM culture integration and regulatory framework. However, they remained largely neutral on ERM process, ERM structures, and ERM infrastructures with most responses for these variables skewing towards agreement. Additionally, a reported ROA mean of .02005 indicates that, on average, the non-life insurance firms in the sample achieved a 2.005% return on their assets and a mean ROE value of .02842, implying that, on average, the companies realized 2.842% returns for shareholders.

The results of inferential statistics, in particular, correlational analysis revealed that the four ERM integration variables exhibited very strong positive and significant correlations with ROA. However, there was a moderate positive and significant correlation between ERM practices and

ROE. Regression analysis suggests that ERM culture, process, structure, and infrastructure, are all positive and significant predictors of ROA. However, only culture and structure are significant positive determinants of ROE. Furthermore, the regulatory framework does not significantly moderate the relationships between ERM practices and non-life insurance companies' ROA or ROE.

5.3 Discussion of Findings

The following section provides a comprehensive discussion of this study's key findings, accompanied by an in-depth interpretation of their significance by linking them to the theoretical underpinnings and existing empirical evidence. The section is structured according to the specific objectives of the study.

5.3.1 ERM Process Integration and Financial Performance

The second objective of the study was to determine the influence of ERM process integration and the financial performance of non-life insurance companies in Kenya. Descriptive statistics indicate that, on average, respondents remained unsure of the status of ERM process integration into their organizations, with a few citing that such processes were part of their operations. This discovery suggests that the adoption of ERM processes by non-life insurance companies in Kenya is underwhelming. This notion has been substantiated by numerous other studies like Leahy and Mbai (2018), who state that "only 37% of the surveyed insurers have implemented and embedded this component of the ERM framework." Njagi and Njuguna (2017) and Renault et al. (2016) attribute this low adoption rate to several factors, including competing priorities, insufficient resources, lack of perceived value, and lack of leadership buy-in and organizational support.

Despite the low adoption rates of ERM processes, inferential statistical analysis indicates a robust positive correlation between their integration and enhanced financial performance. Adopting ERM processes demonstrated a significant and favourable impact on ROA, while its influence on ROE remains statistically inconclusive. This finding partly aligns with the tenets of the agency theory and contingency theory. The observed predictive effect of ERM process integration on ROA supports agency theory by demonstrating how structured risk management processes align managerial decisions with shareholder interests, enhancing financial performance. According to

the theory, conflicts often arise between principals and agents due to differing incentives, with managers sometimes prioritizing risk-taking behaviors or personal gains that do not necessarily maximize firm value (Ghazieh & Chebana, 2021). ERM process integration mitigates these agency-related risks by establishing systematic risk identification, assessment, response mechanisms, and monitoring frameworks, ensuring that managerial decisions are made in a way that protects firm assets, optimizes resource allocation, and maintains financial stability.

From the perspective of contingency theory, which posits that there is no one-size-fits-all approach to management; rather, effectiveness depends on the specific context (Fielder, 2015). In this case, the study demonstrates that desirable return on assets is contingent upon ERM process integration. However, the significant positive impact of ERM processes on ROA, but not on ROE, underscores the idea that the benefits of ERM are contingent on the metric being evaluated. This reflects the core principle of contingency theory: the success of a process is dependent on situational factors, such as a firm's goals, environment, or specific outcomes. It highlights the need for organizations to tailor their risk management practices to align with their unique circumstances and objectives.

The idea that ERM processes enhance financial performance has been corroborated by multiple scientific studies (Girangwa et al., 2020; Hristov et al., 2024; Sajid et al., 2023). These studies explain that integrating ERM processes enhances financial performance by providing a structured approach for identifying, assessing, and mitigating risks, which directly impacts operational efficiency and profitability. It enables firms to anticipate potential disruptions and allocate resources effectively, reducing unexpected losses and improving decision-making. For insurance firms, this is particularly critical as they operate in high-risk environments where managing claims, underwriting, and investment risks are central to their business model (Jurdi & AlGhnaimat, 2021; Tola, 2020). By adopting ERM processes, insurance companies can align their risk appetite with strategic objectives, optimize capital allocation, and improve stakeholder confidence, ultimately leading to better financial outcomes.

A possible explanation for ERM process integration not significantly affecting ROE is provided by Alawattegama (2018) and Nasr et al. (2019), who also observed that the relationship between ERM adoption and ROE is not statistically significant. They explain that this could be due to the nature of ROE itself. This is because ROE measures profitability relative to shareholders' equity,

which is influenced by factors like financial leverage and dividend policies. On the other hand, ERM processes primarily focus on risk mitigation and operational efficiency, which may have a more direct impact on metrics like ROA that center on asset utilization rather than equity-driven measures like ROE.

5.3.2 ERM Culture Integration and Financial Performance

The first objective of the study was to establish the influence ERM culture has on the financial performance of Kenya's non-life insurance companies. Findings of descriptive statistics indicate that ERM culture is sufficiently integrated into non-life insurance companies in Kenya. Respondents felt that the management defined risk management goals, policies, and strategies; ERM was integrated into operations, ERM use was consistently stressed, and staff recognized the value of ERM. This observation corresponds with the views of Kajwang (2022) and Njagi and Njuguna (2017), who point out that the status of ERM culture in Kenyan insurance firms shows a trend of increasing adoption. In particular, according to Kajwang (2022), the growth of ERM culture among Kenyan insurance firms is driven by a range of factors, including the "competence of risk assessment strategies, risk treatment strategies, corporate governance frameworks, and risk monitoring frameworks."

The inferential statistical analysis revealed a statistically significant positive predictive relationship between ERM culture and the financial performance of non-life insurance companies in Kenya, as measured by ROA and ROE. This suggests that a stronger ERM culture is associated with enhanced profitability. Therefore, this finding supports both agency theory and contingency theory by highlighting the role of ERM culture integration in improving financial performance within non-life insurance companies in Kenya.

From an agency theory perspective, the statistically significant relationship between ERM culture integration and financial performance suggests that fostering a strong risk management culture helps align managerial actions with shareholder interests, reducing agency costs and enhancing organizational efficiency (Ghazieh & Chebana, 2021). In firms where ERM culture is deeply embedded, managers are more likely to act in the best interests of stakeholders, mitigating moral hazard and adverse selection risks that can negatively impact ROA and ROE. This demonstrates

how an ERM-driven corporate culture can minimize principal-agent conflicts, ensuring strategic decision-making that optimizes financial performance.

From a contingency theory perspective, the findings indicate that ERM culture is a key factor influencing financial outcomes. Since contingency theory emphasizes that no single best way exists for managing risks, the positive impact of ERM culture on financial performance suggests that firms must adapt their risk strategies to fit their specific organizational needs, market conditions, and regulatory environments (Gordon et al., 2009). Insurance firms in Kenya that have effectively integrated ERM culture appear to optimize their risk-taking approach, leading to stronger financial performance, as measured by ROA and ROE (Kulchmanov et al., 2016). This aligns with contingency theory's principle that successful risk management depends on the fit between internal capabilities and external pressures, rather than applying a one-size-fits-all strategy.

Together, these two perspectives reinforce the idea that ERM culture integration serves both as a governance mechanism that resolves agency conflicts and as a contextual factor that enhances risk adaptability, ultimately driving financial success in the industry.

The finding above aligns with empirical studies that suggest a strong link between ERM culture and an organization’s financial performance (Kareem et al., 2024; Matin, 2017; Rasedi & Sibindi, 2023; Sajid et al., 2023). These studies underscore the importance of ERM culture adoption to a firm’s profitability. According to these scholars, a robust ERM culture directly contributes to an insurance firm's profitability by fostering a proactive approach to risk mitigation and strategic decision-making. In the insurance sector, when a risk-awareness culture is present at all levels of the organization, potential losses from underwriting, investments, or operational inefficiencies are minimized (Kajwang, 2022; Sajid et al., 2023). This culture enables the firm to assess price risks accurately, leading to more profitable underwriting practices and optimized capital allocation. By effectively managing risks, the insurance firm safeguards its financial stability, improves its operational efficiency, and ultimately drives sustainable profitability.

5.3.3 ERM Structure Integration and Financial Performance

The third objective of the study was to examine the effect of ERM structure integration on the financial performance of non-life insurance companies in Kenya. Like ERM processes, the adoption of ERM structures is below expectations, according to respondents' views. Shad and Woon (2019) stress the significance of ERM structure, citing that "an effective ERM implementation model should possess a structure to enable the management to understand and communicate the risk factors." Therefore, the unsatisfactory adoption rate of ERM structures among non-life insurance companies in Kenya, as the study finds, is a cause for concern. It signifies underlying issues and challenges preventing these companies from realizing the full potential of ERM structures.

The importance of integrating ERM structures is underscored by inferential statistical findings, which reveal that investing in ERM structures leads to significant improvements in both ROA and ROE among non-life insurance companies in Kenya. Therefore, this relationship between ERM structures and financial performance aligns with the principles of agency theory and contingency theory. From the perspective of agency theory, integrating ERM structures addresses the principal-agent problem. It achieves this by aligning managerial actions with shareholder interests—for example, through ERM structures, managers can prioritize risk-adjusted returns, which positively impact ROA and shareholders' returns (Ghazieh & Chebana, 2021; Panda & Leepsa, 2017). The finding suggests that firms with robust ERM structures experience improved asset utilization, enhanced operational efficiency, and reduced exposure to financial volatility all of which contribute to higher profitability. By embedding ERM structures into core business functions, firms ensure that managers are accountable for risk exposure, fostering transparency and reducing moral hazard risks, a key principle in agency theory.

In the context of contingency theory, ERM structures enhance decision-making by providing a systematic framework for collecting, processing, and analyzing risk-related data. In other words, the observation that investing in ERM structures leads to significant improvements in both ROA and ROE strongly supports contingency theory, which emphasizes that organizational success depends on how well strategies align with external and internal factors (Gordon et al., 2009). The finding reinforces the principle that successful risk management is not universally standardized

but rather depends on how well ERM structures align with firm and industry-specific conditions. Non-life insurance companies in Kenya that strategically integrate ERM benefit from improved financial performance, validating the theory's emphasis on contextual adaptation rather than fixed approaches.

Furthermore, the findings are consistent with multiple empirical literature on the subject (Acharyya & Mutenga, 2013; Girangwa et al., 2020; Hristov et al., 2024; Matin, 2017; Njagi & Njuguna, 2017; Sajid et al., 2023). These scholars explain that ERM structures enhance firms' financial performance by systematically managing risks and improving operational efficiency, which ultimately drives profitability. For ROA, ERM enables firms to optimize resource allocation by identifying areas of potential risk and implementing mitigation strategies, reducing losses, and maximizing asset utilization (Sajid et al., 2023). This leads to better operational outcomes and higher returns on the firm's assets. As for ROE, ERM supports shareholder interests by aligning organizational decisions with strategic risk appetites (Nasr et al., 2019). By proactively addressing financial, operational, and reputational risks, ERM reduces uncertainty and increases confidence among investors.

5.3.4 ERM Infrastructure Integration and Financial Performance

The fourth objective of the study was to determine the effect of ERM infrastructure integration on the financial performance of non-life insurance companies in Kenya. Similar to ERM processes, processes, and structures, respondents generally felt that the implementation of ERM infrastructures in non-life insurance companies was below expectations. In fact, the adoption of ERM infrastructures scored the lowest of the four ERM components. As Girangwa et al. (2020), Leahy and Mbai (2018), Njagi and Njuguna (2017), and Renault et al. (2016) suggest, this is indicative of underlying challenges hindering individual firms from successfully adopting and leveraging ERM infrastructures for their operations. These challenges can range from resource constraints, inadequate management support, lack of proper risk culture, inadequate technological support, and regulatory barriers.

Nevertheless, the impact of ERM infrastructure on non-life financial performance is similar to that of ERM processes. Adopting ERM infrastructures is shown to have a significant and positive effect

on ROA, while its influence on ROE remains nonsignificant. This finding is partly in support of the tenets of both agency and contingency theories. The observed significant effect of ERM infrastructure integration confirms that the existence of the right risk management infrastructure goes a long way in resolving the principal-agent relationship, ensuring that managerial actions and decisions align with shareholder interests, resulting in optimal financial performance. At the same time, the study demonstrates that higher company asset utilization for profitability is contingent upon the presence of ERM infrastructures.

However, the finding that ERM infrastructure integration does not have a significant effect on ROA suggests that the study does not align with both agency theory and contingency theory, as ERM infrastructure is expected to play a crucial role in influencing financial performance. From an agency theory perspective, ERM infrastructure is intended to minimize principal-agent conflicts by increasing transparency, accountability, and managerial efficiency (Zogning, 2017). A significant effect on ROE would imply that well-structured ERM infrastructure helps managers make financially sound decisions that maximize shareholder value. However, the lack of significance in this study suggests that these systems alone may not be sufficient to ensure profitability for equity holders. From a contingency theory standpoint, ERM infrastructure should allow firms to adapt risk management strategies based on internal and external conditions (Gordon et al., 2009). If ERM infrastructure were a key determinant of financial success, firms investing in such systems should experience higher ROE due to enhanced risk management. However, the study's results imply that ERM infrastructure does not enhance firm profitability.

The finding is also backed up by numerous previous bodies of empirical evidence (Acharyya & Mutenga, 2013; Girangwa et al., 2020; Kakiya et al., 2019; Njagi & Njuguna, 2017; Ping & Muthuveloo, 2015; Sajid et al., 2023). These studies argue that implementing ERM infrastructures enables a comprehensive approach to risk management. They help insurers identify, assess, and mitigate risks across all levels of the organization, reducing unexpected losses and operational inefficiencies. At the same time, Ping and Muthuveloo (2015), as well as Sajid et al. (2023), clarify that a robust ERM infrastructure helps a firm centralize risk data and utilize advanced analytics to optimize capital allocation, improve underwriting practices, and ensure regulatory compliance. All these lead to favorable returns on asset utilization. However, like ERM process integration, the nonsignificant effect on ROE could be because ERM infrastructures overly focus on risk

mitigation and operational efficiency, which may have a more direct impact on metrics like ROA that center on asset utilization rather than equity-driven measures.

5.3.5 Moderating Effect of Regulatory Framework

The study also sought to determine the moderating effect of regulatory frameworks within the insurance sector on the interactions between ERM practices and the financial performance of non-life insurance firms in Kenya. Findings from the descriptive statistical analysis indicate that respondents' perception of Kenya's regulatory frameworks for risk management within the non-life insurance sector was positive. However, when the moderation of the regulatory framework was tested, it was discovered that the current regulatory landscape does not significantly moderate the effect of ERM practices on the financial performance of non-life insurance companies. This suggests that the benefits of strong ERM frameworks are primarily consistent regardless of the specific regulatory environment.

In other words, the negligible moderating effect of the current set of regulations underscores the strength and resilience of well-implemented ERM practices within the non-life insurance sector. This is because the ERM practices covered deliver positive financial outcomes irrespective of variations in the regulatory landscape, suggesting that internal risk management excellence is a primary driver of financial performance in this industry. A plausible explanation of this phenomenon is provided by Jabbour and Abdel-Kader (2016), who contend that ERM adoption in the insurance sector is fundamentally driven by business value rather than regulatory imperative. Additionally, this could also mean that the current regulatory environment, while intended to influence risk management, may be ineffective in differentiating between companies with strong and weak ERM practices.

5.4 Conclusion of the Study

The findings of this study highlight the pivotal role of ERM integration in enhancing the financial performance of non-life insurance companies in Kenya. It demonstrates that integrating ERM culture and structure yields significant positive effects on both ROA and ROE, emphasizing the importance of fostering a risk-aware organizational environment and robust structural systems. However, the integration of ERM processes and infrastructures, while significantly predictive of

ROA, does not extend to ROE, suggesting a more operational than equity-based financial influence. Additionally, the current regulatory framework does not significantly moderate the relationship between ERM practices and financial performance, indicating that existing regulations may not be sufficiently aligned with or tailored to optimize ERM's impact in the sector. These findings underscore the value of comprehensive ERM adoption as a driver of financial success while suggesting the need to transform the regulatory environment to better support the unique risk management dynamics within non-life insurance firms in Kenya.

5.5 Implications of the Study

Based on the findings and conclusion above, this study has significant policy, practical, and theoretical implications, as described below.

5.5.1 Policy Implications

The findings of this study indicate the need for Kenya's IRA and institutional bodies, such as AKI, to enhance the regulatory framework governing non-life insurance companies in order to better complement the integration of ERM practices. This is because the current regulatory landscape has been shown to lack a significant moderating effect on the relationship between ERM and financial performance, suggesting an opportunity for reform. These policymakers could consider creating targeted guidelines and enforcement mechanisms that actively encourage ERM adoption and utilization, ensuring that regulatory oversight aligns with the sector's risk management needs. Additionally, shifting their focus from mere compliance to fostering a robust risk culture within non-life insurance companies is imperative.

5.5.2 Practical Implications

For non-life insurance companies in Kenya, this study provides empirical evidence that investing in ERM culture and structure integration yields tangible financial benefits, particularly in terms of improved ROA and ROE. Managers should prioritize the development of a strong risk culture. In addition, they should invest in building robust ERM structures, including well-defined roles and responsibilities, risk assessment frameworks, and reporting systems. While ERM process and infrastructure integration primarily impact ROA, companies should not overlook its importance,

as it contributes to operational efficiency and asset utilization. By focusing on these practical aspects, insurance companies can enhance their financial performance and gain a competitive edge in the Kenyan market.

5.5.3 Theoretical implications

This research contributes to the existing body of literature by demonstrating the nuanced relationship between ERM components and financial performance in the context of the insurance industry of emerging markets like Kenya. It highlights the value of distinguishing between different ERM dimensions—culture, structure, process, and infrastructure—and their varying impacts on financial metrics. The finding that ERM culture and structure have a more significant impact on both ROA and ROE than process and infrastructure suggests that behavioral and organizational aspects of ERM are crucial drivers of financial success. Also, the observation that the regulatory framework does not significantly moderate the ERM-performance relationship challenges the assumption that external regulatory pressures are the primary drivers of risk management effectiveness.

The findings of the study indicate that agency theory and contingency theory are partially supported, with certain aspects aligning with their core principles while others diverge, suggesting a need for further investigation into the phenomenon. Given this partial alignment with both theories, the study highlights knowledge gaps in understanding the complex interactions between ERM components and financial performance as well as the moderating effect of regulatory framework. This necessitates further empirical research to explore alternative theoretical perspectives, identify hidden variables, and refine risk management models that better capture the dynamics observed in the insurance sector.

5.6 Limitations and Areas for Further Research

Due to the conceptual, contextual, and methodological limitations of this study, future researchers should consider the following: firstly, they should aim to expand the scope of ERM by exploring components and practices beyond those analyzed in this study. Secondly, examining the impact of ERM in other contexts, such as life insurance companies, would provide valuable insights into sector-specific dynamics and help establish industry-wide best practices. Thirdly, incorporating a

mixed-method approach that combines quantitative analysis with qualitative perspectives could yield richer, more contextualized findings that reflect both measurable outcomes and nuanced organizational experiences. In other words, this holistic approach would deepen understanding of the impact of the multifaced ERM.

REFERENCES

Abeyrathna, S. P. G. M., & Lakshan, A. M. I. (2021). Impact of Enterprise Risk Management Practices on Performance of Insurance Companies in Sri Lanka. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3889080

Acharyya, M., & Mutenga, S. (2013). The benefits of implementing enterprise risk management: evidence from the non-life insurance industry. *Enterprise Risk Management*, *6*(1), 22–24.

Alawattegama, K. K. (2018). The Effect of Enterprise Risk Management (ERM) on Firm Performance: Evidence from the Diversified Industry of Sri Lanka. *Journal of Management Research*, *10*(1). https://doi.org/10.5296/jmr.v10i1.12429

Altuntas, M., Berry-Stölzle, T. R., & Hoyt, R. E. (2011). Implementation of enterprise risk management: Evidence from the German property-liability insurance industry. *Geneva Papers on Risk and Insurance: Issues and Practice*, *36*(3). https://doi.org/10.1057/gpp.2011.11

Ansari, R. M., Rahim, K., Bhoje, R., & Bhosale, S. (2022). A study on research design and its types. *International Research Journal of Engineering and Technology (IRJET)*, *9*(7).

Apergis, N., & Poufinas, T. (2020). The role of insurance growth in economic growth: Fresh evidence from a panel of OECD countries. *North American Journal of Economics and Finance*, *53*. https://doi.org/10.1016/j.najef.2020.101217

Asamoah, E. O., & Arkoh, P. (2019). Impact of Enterprise Risk Management Practices on Financial Performance of Rural and Community Banks in Ghana. *International Journal of Economics, Business and Management Research*, *3*(05).

Asongu, S., & Odhiambo, N. M. (2020). Financial access, governance and insurance sector development in sub-Saharan Africa. *Journal of Economic Studies*, *47*(4). https://doi.org/10.1108/JES-01-2019-0025

Babbie, E. (2016). *The Practice of Social Research,* (14th ed.). Cengage Learning.

Barasa, E., Kazungu, J., Nguhiu, P., & Ravishankar, N. (2021). Examining the level and inequality in health insurance coverage in 36 sub-Saharan African countries. *BMJ Global Health*, *6*(4). https://doi.org/10.1136/bmjgh-2020-004712

Berhe, A. T., & Kaur, J. (2017). Determinants of insurance companies' profitability Analysis of insurance sector in Ethiopia. In *International Journal of Research in Finance & Marketing* (Vol. 7).

Berndt, A. E. (2020). Sampling Methods. *Journal of Human Lactation*, *36*(2). https://doi.org/10.1177/0890334420906850

Bhattacherjee, A. (2021). Social Science Research: Principles, Methods and Practices (Revised edition). In *Book 3*.

Bishaw, M., Lemie, K., & Tulu, S. (2019). Determinants of Financial Performance of Insurance Companies in Ethiopia. In *Africa Journal of Business and Economics (HAJBE)* (Vol. 2019, Issue 1).

Cai, J. (2016). The impact of insurance provision on household production and financial decisions. *American Economic Journal: Economic Policy*, *8*(2). https://doi.org/10.1257/pol.20130371

Carmine, S., & Smith, W. K. (2021). Organizational Paradox. In *Management*. https://doi.org/10.1093/obo/9780199846740-0201

Central Bank of Kenya. (2021). *Kenya financial sector stability report*. https://www.centralbank.go.ke/uploads/financial_sector_stability/1995278959_Kenya Financial Sector Stability Report 2020.pdf

Chakwizira, J. (2022). Regulatory Frameworks, Policies, Norms and Standards. In J. O. Odiyo, P. B. Bikam, & J. Chakwizira (Eds.), *Green Economy in the Transport Sector*. Springer, Cham. https://doi.org/https://doi.org/10.1007/978-3-030-86178-0_7

Chege, K., & Otieno, O. (2020). Research Philosophy Design and Methodologies: A Systematic Review of Research Paradigms in Information Technology. *Global Scientific Journals*, *8*(5).

Chege, S., Wanyembi, G., & Nyamboga, C. (2023). Enterprise Risk Management Practices in Kenya. *Journal of International Business Research and Marketing*, *8*(1). https://doi.org/10.18775/jibrm.1849-8558.2015.81.3002

Chipeta, C. (2020). *Best Data Collection Methods for Quantitative Research*. Conjoint.

Cooper, D. R., & Schindler, P. (2014). *Business research methods*. Mcgraw-Hill.

Edson, M. C., Henning, P. B., & Sankaran, S. (2017). *A guide to systems research: philosophy, processes and practice* (10th ed.). Springer, Cham.

Eriksen, C., McKinnon, S., & de Vet, E. (2020). Why insurance matters: insights from research post-disaster. *Australian Journal of Emergency Management*, *35*(4).

Fama, E. F., & Jensen, M. C. (2008). Separation of ownership and control. In *The Value Creating Board: Corporate Governance and Organizational Behaviour*. https://doi.org/10.4324/9780203888711

Fiedler, F. E. (1964). A Contingency Model of Leadership Effectiveness. *Advances in Experimental Social Psychology*, *1*(C). https://doi.org/10.1016/S0065-2601(08)60051-9

Fielder, F. (2015). Fiedler's contingency theory. In *Leadership Central*.

Fitriana, S., & Wardhani, R. (2020). The effect of enterprise risk management and sustainability reporting quality on performance: Evidence from Southeast Asia countries. *International Journal of Economic Policy in Emerging Economies*, *13*(4). https://doi.org/10.1504/IJEPEE.2020.109588

Fraser, J., Quail, R., & Simkins, B. (2021). Enterprise Risk Management. *Book*, *2nd edition*.

Ghazieh, L., & Chebana, N. (2021). The effectiveness of risk management system and firm performance in the European context. *Journal of Economics, Finance and Administrative Science*, *26*(52). https://doi.org/10.1108/JEFAS-07-2019-0118

Girangwa, K. G., Rono, L., & Mose, J. (2020). The Influence of Enterprise Risk Management

Practices on Organizational Performance: Evidence from Kenyan State Corporations. *Journal of Accounting, Business and Finance Research*, *8*(1). https://doi.org/10.20448/2002.81.11.20

Gordon, L. A., Loeb, M. P., & Tseng, C. Y. (2009). Enterprise risk management and firm performance: A contingency perspective. *Journal of Accounting and Public Policy*, *28*(4). https://doi.org/10.1016/j.jaccpubpol.2009.06.006

Grace, M. F., Leverty, J. T., Phillips, R. D., & Shimpi, P. (2015). The value of investing in enterprise risk management. *Journal of Risk and Insurance*, *82*(2). https://doi.org/10.1111/jori.12022

Horvey, S. S., & Odei-Mensah, J. (2024). Enterprise risk management and performance of the South African insurers: the moderating role of corporate governance. *Risk Management*, *26*(18). https://doi.org/https://doi.org/10.1057/s41283-024-00149-1

Horvey, S. S., Odei-Mensah, J., Mushai, A., & MacGregor, A. (2024). The Determinants of Firm-Level Enterprise Risk Management Adoption: Literature Review and Future Directions. *African Review of Economics and Finance*, *16*(2), 47–69.

Hristov, I., Camilli, R., Chirico, A., & Mechelli, A. (2024). The integration between enterprise risk management and performance management system: managerial analysis and conceptual model to support strategic decision-making process. *Production Planning and Control*, *35*(8). https://doi.org/10.1080/09537287.2022.2140086

Hussein, M. A., & Alam, M. S. (2019). The Role of Insurance Sector in the Development of the Economy of Oman. *Global Journal of Economics and Business*, *6*(2). https://doi.org/10.31559/gjeb2019.6.2.8

Insurance Regulatory Authority. (2024). *Insurance Industry Report for the Period January – December 2023*. https://www.ira.go.ke/assets/file/Q4_2023_Industry_Release.pdf

Jabbour, M., & Abdel-Kader, M. (2016). ERM adoption in the insurance sector: Is it a regulatory imperative or business value driven? *Qualitative Research in Accounting and Management*, *13*(4). https://doi.org/10.1108/QRAM-03-2015-0035

Jurdi, D. J., & AlGhnaimat, S. M. (2021). The Effects of ERM Adoption on European Insurance Firms Performance and Risks. *Journal of Risk and Financial Management*, *14*(11). https://doi.org/10.3390/jrfm14110554

Kajwang, B. (2022). Theoretical review of enterprise risk management culture drivers for insurance firms in Kenya. *International Journal of Research in Business and Social Science (2147- 4478)*, *11*(5). https://doi.org/10.20525/ijrbs.v11i5.1826

Kakiya, G., Rono, L., & Mose, J. (2019). Effect of Risk Management, Intellectual Capital on Performance of State Corporations in Kenya: Moderating Approach. *International Journal of Business and Economic Sciences Applied Research*, *12*(3). https://doi.org/10.25103/ijbesar.123.06

Kambhampati, S. B. S., Menon, J., & Maini, L. (2023). Ethics in Research and Publications. In *Indian Journal of Orthopaedics* (Vol. 57, Issue 11). https://doi.org/10.1007/s43465-023-00971-x

Kareem, H. A., Olaniyi, T. K., & Olatubosun, P. (2024). Implementation of Sustainable Enterprise Risk Management (SERM) paradigm in enhancing transport sector's performance. *International Journal of Innovative Business Strategies*, *10*(1), 629–650. https://doi.org/10.20533/ijibs.2046.3626.2024.0079

Kiptoo, I. K., Kariuki, S. N., & Ocharo, K. N. (2021). Risk management and financial performance of insurance firms in Kenya. *Cogent Business and Management*, *8*(1). https://doi.org/10.1080/23311975.2021.1997246

Kivunja, C. (2018). Distinguishing between theory, theoretical framework, and conceptual framework: A systematic review of lessons from the field. *International Journal of Higher Education*, *7*(6). https://doi.org/10.5430/ijhe.v7n6p44

Kothari, C. R. (2004). Research Methodology: Methods & Techniques. In *New Age International (P) Ltd*. https://doi.org/10.1017/CBO9781107415324.004

KPMG. (2025). *Insights for the Insurance Sector*. KPMG International Limited.

https://kpmg.com/us/en/insights-by-industry/insights-insurance.html

Kramarić, T. P., Miletić, M., & Blaževski, R. K. (2019). Financial Stability of Insurance Companies in Selected CEE Countries. *Business Systems Research*, *10*(2). https://doi.org/10.2478/bsrj-2019-025

Kulchmanov, A., Hassan, M. K., & Rashid, M. (2016). Contingency theory approach to risk management practices in Islamic banks: A case study on Kazakhstan. *International Journal of Islamic Business*, *1*(2), 35–67. https://doi.org/10.32890/ijib2016.1.2.3

Kumar, S., Rao, P., & Barai, M. (2024). Risk management papers Enterprise risk management in the insurance industry: Trends and future directions. *Journal of Risk Management in Financial Institutions*, *17*(2).

Kwaning, E. A., Awuah, P. K., & Mahama, M. B. (2015). Factors Affecting Financial Performance of Non-Life Insurance Companies in Ghana. *Africa Development and Resources Research Journal*, *25*(3).

Kyere, M., & Ausloos, M. (2021). Corporate governance and firms financial performance in the United Kingdom. *International Journal of Finance and Economics*, *26*(2). https://doi.org/10.1002/ijfe.1883

Laisasikorn, K., & Rompho, N. (2014). A Study of the Relationship Between a Successful Enterprise Risk Management System, a Performance Measurement System and the Financial Performance of Thai Listed Companies. *Journal of Applied Business and Economics*, *16*(2).

Leahy, D., & Mbai, A. (2018). *Shaping ERM Maturity: Insurance ERM maturity assessment thought leadership report*. https://assets.kpmg.com/content/dam/kpmg/ke/pdf/rc/frm/Shaping ERM Maturity.pdf

Li, L. (2018). A Study on Enterprise Risk Management and Business Performance. *Journal of Financial Risk Management*, *07*(01). https://doi.org/10.4236/jfrm.2018.71008

Liu, G. (2009). ERM system implementation in a consortium environment. *Library Management*,

30(1–2). https://doi.org/10.1108/01435120910927501

Lundqvist, S. A. (2015). Why firms implement risk governance - Stepping beyond traditional risk management to enterprise risk management. *Journal of Accounting and Public Policy*, *34*(5). https://doi.org/10.1016/j.jaccpubpol.2015.05.002

Machkour, B., & Abriane, A. (2020). Industry 4.0 and its implications for the financial sector. *Procedia Computer Science*, *177*. https://doi.org/10.1016/j.procs.2020.10.068

Mahat, N., Pandey, S., & Thapa, B. S. (2023). Enterprise Risk Management and Institutional Performance of Life Insurance Companies in Nepal. *The Batuk*, *9*(1). https://doi.org/10.3126/batuk.v9i1.51896

Makau, L., & Okeyo, W. (2021). Risk Underwriting, Crisis Management, Regulatory Framework and Performance of Insurance Companies in Kenya: A Case of Sanlam General Insurance Company. *Journal of Human Resource & Leadership*, *5*(3), 96–113. https://doi.org/https://doi.org/10.53819/10.53819/81018102t3026

Mall, S. (2018). Contribution of Insurance on Economic Growth in India: An Econometric Approach. *Journal of Applied Business and Economics*, *20*(1). https://doi.org/10.33423/jabe.v20i1.318

Masama, B., Bruwer, J. P., & Gwaka, L. (2022). The feasibility of implementing the Committee of Sponsoring Organizations of the Treadway Commission enterprise risk management framework in South African small, medium and micro enterprises: a literature review. In *International Journal of Business Continuity and Risk Management* (Vol. 12, Issue 3). https://doi.org/10.1504/ijbcrm.2022.125288

Matin, S. M. (2017). *Alignment of ERM with performance management: the case study of automotive industry* [Brunel University London]. https://bura.brunel.ac.uk/handle/2438/15243

Mazreku, I., & Poposki, K. (2012). Adaptation and implementation of integrated risk management in insurance industry in Kosovo. *Regional Science Conference with International*

Participation, *2*(2), 315–317.

McAdam, R., Miller, K., & McSorley, C. (2019). Towards a contingency theory perspective of quality management in enabling strategic alignment. *International Journal of Production Economics*, *207*. https://doi.org/10.1016/j.ijpe.2016.07.003

Meckling, W. H., & Jensen, M. C. (1976). Theory of the Firm. *Managerial Behavior, Agency Costs and Ownership Structure*, *3*(4), 305–360.

Menard, S. (2014). An Introduction to Logistic Regression Diagnostics. In *Applied Logistic Regression Analysis*. https://doi.org/10.4135/9781412983433.n4

Mikes, A., & Kaplan, R. S. (2013). Managing Risks: Towards a Contingency Theory of Enterprise Risk Management. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2311293

Mitchell, T. R., Biglan, A., Oncken, G. R., & Fiedler, F. E. (1970). The Contingency Model: Criticism and Suggestions. *Academy of Management Journal*, *13*(3). https://doi.org/10.5465/254963

Mohamad, M. M., Sulaiman, N. L., Sern, L. C., & Salleh, K. M. (2015). Measuring the Validity and Reliability of Research Instruments. *Procedia - Social and Behavioral Sciences*, *204*. https://doi.org/10.1016/j.sbspro.2015.08.129

Muslih, M. (2019). The Benefit of Enterprise Risk Management (ERM) On Firm Performance. *Indonesian Management and Accounting Research*, *17*(2). https://doi.org/10.25105/imar.v17i2.4949

Naik, S., & Prasad, C. V. V. S. N. V. (2021). Benefits of Enterprise Risk Management: A Systematic Review of Literature. *GATR Journal of Finance and Banking Review*, *5*(4). https://doi.org/10.35609/jfbr.2021.5.4(3)

Nasr, A. K., Alaei, S., Bakhshi, F., Rasoulyan, F., Tayaran, H., & Farahi, M. (2019). How enterprise risk management (ERM) can affect on short-term and long-term firm performance: Evidence from the Iranian banking system. *Entrepreneurship and Sustainability Issues*, *7*(2).

https://doi.org/10.9770/jesi.2019.7.2(41)

Naz, & I., & Naqvi. (2016). FINANCIAL PERFORMANCE OF FIRMS: EVIDENCE FROM PAKISTAN CEMENT INDUSTRY Farah. *Journal of Teaching and Education, CD-ROM. ISSN: 2165-6266 :: 05(01):81–94 (2016) FINANCIAL*, *05*(01).

Nicholson, J. E. (2019). Challenges for the insurance industry in the future. *Journal of Insurance Regulation*. https://doi.org/10.52227/24790.2019

Njagi, C., & Njuguna, D. A. (2017). Evaluation of the Level of Enterprise Risk Management Adoption and Maturity of Insurance Companies in Kenya. *International Journal of Finance and Accounting*, *1*(2). https://doi.org/10.47604/ijfa.266

Nocco, B. W., & Stulz, R. M. (2022). Enterprise Risk Management: Theory and Practice. *Journal of Applied Corporate Finance*, *34*(1). https://doi.org/10.1111/jacf.12490

Nyandika, D. O., Machoka, D. P., & Ngala, D. M. (2022). The moderating effect of external regulation on the relationship between transformational leadership and enterprise risk management adoption by commercial state corporations in Kenya. *African Journal of Emerging Issues (AJOEI). Online ISSN*, *4*(1), 68–83.

Odubuasi, A. C., Ofor, N. T., & Ilechukwu, F. U. (2022). Enterprise Risk Management, Risk Committee, and Earning Capacity of African Banks: A Comparative Approach. *Modern Economy*, *13*(01). https://doi.org/10.4236/me.2022.131004

Ohlsson, E., & Johansson, B. (2010). Non-Life Insurance Pricing with Generalized Linear Models. In *EAA Lecture Notes*.

Okoli, T., & Isaac, D. (2021). Internal Control and Effective Risk Management in Nigerian Insurance Companies. *Repositorio Dspace*, *2*(2).

Öner Kaya, E. (2015). The effects of firm-specific factors on the profitability of non-life insurance companies in Turkey. *International Journal of Financial Studies*, *3*(4). https://doi.org/10.3390/ijfs3040510

Owolabi, A. O., Oloyede, F. A., Iriyemi, A. B., & Akinola, A. T. (2017). The Impact of Risk Management on the Profitability of Insurance Companies in Nigeria. *International Journal of Marketing and Technology*, *7*(6).

Oyewo, B. (2022). Enterprise risk management and sustainability of banks performance. *Journal of Accounting in Emerging Economies*, *12*(2). https://doi.org/10.1108/JAEE-10-2020-0278

Pagach, D., & Warr, R. (2011). The Characteristics of Firms That Hire Chief Risk Officers. *Journal of Risk and Insurance*, *78*(1). https://doi.org/10.1111/j.1539-6975.2010.01378.x

Panda, B., & Leepsa, N. M. (2017). Agency theory: Review of theory and evidence on problems and perspectives. *Indian Journal of Corporate Governance*, *10*(1). https://doi.org/10.1177/0974686217701467

Pawar, N. (2020). 6. Type of Research and Type Research Design. *Social Research Methodology*, *December 2020*.

Ping, T. A., & Muthuveloo, R. (2015). The impact of enterprise risk management on firm performance: Evidence from Malaysia. *Asian Social Science*, *11*(22). https://doi.org/10.5539/ass.v11n22p149

Prewett, K., & Terry, A. (2018). COSO's Updated Enterprise Risk Management Framework—A Quest For Depth And Clarity. *Journal of Corporate Accounting and Finance*, *29*(3). https://doi.org/10.1002/jcaf.22346

Rasedi, K., & Sibindi, N. (2023). Enterprise Risk Management Culture and Strategy: A Conceptual Alignment. *Organizational Cultures*, *23*(2). https://doi.org/10.18848/2327-8013/CGP/v23i02/51-77

Reams, L. C. (2023). Fred Fiedler's contingency model revisited: 30 years later. *Filosofiya Osvity. Philosophy of Education*, *29*(1). https://doi.org/10.31874/2309-1606-2023-29-1-6

Reinking, J. (2012). *Contingency Theory in Information Systems Research*. https://doi.org/10.1007/978-1-4419-6108-2_13

Renault, B. Y., Agumba, J. N., & Balogun, O. A. (2016). Drivers for and Obstacles to Enterprise Risk Management in Construction Firms: A Literature Review. *Procedia Engineering*, *164*. https://doi.org/10.1016/j.proeng.2016.11.637

Sajid, M. R., Abdin, S. Z. ul, Iqbal, J., & Saleem, H. M. N. (2023). The Impact of Enterprise Risk Management on Financial Performance: Exploring the Mediating Role of Business Strategies. *Journal of Business & Economics*, *15*(2), 111–131. https://doi.org/https://doi.org/10.62500/jbe.v15i2.586

Sajid, M. R., Abdin, S. Z. ul, & Saleem, H. M. N. (2023). The Components of Enterprise Risk Management and Financial Performance of the Non-Financial Firms through Mediation of Corporate Reputation. *Journal of Accounting and Finance in Emerging Economies*, *9*(4), 501–514. www.publishing.globalcsrc.org/jafee

Salaudeen, H. A. (2024). Enterprise Risk Management: A Guide to Its Implementation. *JABU International Journal of Social and Management Sciences*, *9*(1), 35–42.

Saunders, M., Lewis, P., & Thornhill, A. (2019). Understanding research philosophy and approaches to theory development. In *Research Methods for Business Students* (pp. 128–171). Pearson education.

Saunders, M., Lewis, P., & Thornhill, A. (2023). Research Methods for Business Students. In *Pearson Education Limited*.

Sekaran, U., & Bougie, R. (2016). Research Methods for Business: A Skill Building Approach Seventh Edition WileyPLUS Learning Space Card. *Internation Labour Office*, *1*(September).

Selvam, M., Gayathri, J., Vasanth, V., Lingaraja, K., & Marxiaoli, S. (2016). Determinants of Firm Performance: A Subjective Model. *International Journal of Social Science Studies*, *4*(7). https://doi.org/10.11114/ijsss.v4i7.1662

Sen, R., & Das, S. (2023). Inferential Statistics. In *Indian Statistical Institute Series*. https://doi.org/10.1007/978-981-19-2008-0_13

Serpa, J. C., & Krishnan, H. (2017). The strategic role of business insurance. *Management Science*, *63*(2). https://doi.org/10.1287/mnsc.2015.2348

Shad, M. K., & Woon, F. L. (2019). A conceptual framework for enterprise risk management performance measure through economic value added. *Global Business & Management Research: An International Journal*, *7*(2).

Shaheen, R., Ağa, M., Rjoub, H., & Abualrub, A. (2020). Investigation of the pillars of sustainability risk management as an extension of enterprise risk management on Palestinian insurance firms' profitability. *Sustainability (Switzerland)*, *12*(11). https://doi.org/10.3390/su12114709

Shantal, M., Othman, Z., & Bakar, A. A. (2023). A Novel Approach for Data Feature Weighting Using Correlation Coefficients and Min–Max Normalization. *Symmetry*, *15*(12). https://doi.org/10.3390/sym15122185

Shao, L., Wang, Y., Wang, X., Ji, L., & Huang, R. (2022). Factors associated with health insurance ownership among women of reproductive age: A multicountry study in sub-Saharan Africa. *PLoS ONE*, *17*(4 April). https://doi.org/10.1371/journal.pone.0264377

Shewamene, Z., Tiruneh, G., Abraha, A., Reshad, A., Terefe, M. M., Shimels, T., Lemlemu, E., Tilahun, D., Wondimtekahu, A., Argaw, M., Anno, A., Abebe, F., & Kiros, M. (2021). Barriers to uptake of community-based health insurance in sub-Saharan Africa: a systematic review. In *Health Policy and Planning* (Vol. 36, Issue 10). https://doi.org/10.1093/heapol/czab080

Singhal, N., Goyal, S., & Singhal, T. (2020). Insurance–growth nexus: empirical evidence from emerging Asian markets. *Transnational Corporations Review*, *12*(3). https://doi.org/10.1080/19186444.2020.1756170

Suardini, D., Rahmatunnisa, M., & Setiabudi., W. (2018). Perspective of Contingency and Institutional Theory on Implementation of Risk Management at West Java Provincial Government. *International Journal Od Management and Administrative Sciences*, *5*(08).

Taherdoost, H. (2018). Sampling Methods in Research Methodology; How to Choose a Sampling Technique for Research. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3205035

Takona, J. P. (2024). Research design: qualitative, quantitative, and mixed methods approaches / sixth edition. In *Quality and Quantity* (Vol. 58, Issue 1). https://doi.org/10.1007/s11135-023-01798-2

Talesh, S. A. (2018). Data Breach, Privacy, and Cyber Insurance: How Insurance Companies Act as "Compliance Managers" for Businesses. *Law and Social Inquiry*, *43*(2). https://doi.org/10.1111/lsi.12303

Taouab, O., & Issor, Z. (2019). Firm Performance: Definition and Measurement Models. *European Scientific Journal ESJ*, *15*(1). https://doi.org/10.19044/esj.2019.v15n1p93

Tola, A. (2020). The Implementation of ERM in Non-Life Insurance Companies in Albania. *European Journal of Business and Management Research*, *5*(6). https://doi.org/10.24018/ejbmr.2020.5.6.570

Trivedi, S. (2022). A Risk Management Framework For Life Insurance Companies. *Journal of Corporate Governance, Insurance, and Risk Management*, *9*(1). https://doi.org/10.51410/jcgirm.9.1.6

Tselentis, D. I., Yannis, G., & Vlahogianni, E. I. (2017). Innovative motor insurance schemes: A review of current practices and emerging challenges. *Accident Analysis and Prevention*, *98*. https://doi.org/10.1016/j.aap.2016.10.006

Tuffour, J. K., Ofori-Boateng, K., Ohemeng, W., & Akuaku, J. K. (2021). Life Insurance Companies: Determinants of Cost Efficiency and Profitability. *Journal of Accounting, Business and Management (JABM)*, *28*(2). https://doi.org/10.31966/jabminternational.v28i2.501

Turrado García, F., Sandoval Orozco, A. L., García Pineda, M. P., & García Villalba, L. J. (2023). Agency theory: Forecasting agent remuneration at insurance companies. *Expert Systems with Applications*, *215*. https://doi.org/10.1016/j.eswa.2022.119340

Wuthrich, M. V., & Buser, C. (2018). Data Analytics for Non-Life Insurance Pricing. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2870308

Yegon, C. K., Mouni, J. G., & Wanjau, K. (2014). Effects of firm size on enterprise risk management of listed firms in Kenya. *IOSR Journal of Business and Management*, *16*(5), 86–95.

Zahoor, S., Akbar, D. A., Svobodova, L., & Hedvicakova, D. M. (2024). Impact of Risk Management, Board Effectiveness and Innovation on Firm Performance- a Mediated and Moderated Model of Corporate Governance and Government Policy. *Kurdish Studies*, *12*(2), 2030–2059. https://doi.org/https://doi.org/10.58262/ks.v12i2.147

Zéghal, D., & El Aoun, M. (2016). Enterprise Risk Management in the US Banking Sector Following the Financial Crisis. *Modern Economy*, *07*(04). https://doi.org/10.4236/me.2016.74055

Zinyoro, T., & Aziakpono, M. J. (2024). Performance determinants of non-life insurance firms: a systematic review of the literature. *Cogent Business & Management*, *11*(1), 2345045.

Zogning, F. (2017). Agency Theory: A Critical Review. *European Journal of Business and Management*, *9*(2).

VT OMNES
VNVM SINT

APPENDICES

Appendix 1: Questionnaire

This is a 10-minute survey that seeks to gather information on the **Influence of Enterprise Risk Management Integration on the Financial Performance of Non-Life Insurance Companies in Kenya**. This study is being conducted as part of the fulfilment of the requirements for a Master's Degree in Business Administration at Strathmore University. Your insights will be invaluable in understanding how the integration of enterprise risk management impacts non-life insurance companies' financial performance. Please note that participation in this study is voluntary and that all information you provide will be kept confidential and used for academic purposes only.

Please read each question carefully and indicate your response by checking the appropriate box (√) or marking the space (X) in the appropriate field(s).

PART A: BACKGROUND INFORMATION

1. Name of the insurance company _____

2. Please indicate your gender.

☐ Male ☐ Female

3. Please indicate your age bracket.

☐ Under 25 years ☐ 25-35 years

☐ 36- 45 years ☐ Above 45 years

3. How long have you worked in this organization?

☐ Less than 3 years ☐ 3-5 years

☐ 6-10 years ☐ More than 10 years

4. Role within the company?

☐ Chief risk officer ☐ Chief finance manager

☐ Head of sales/business development ☐ Head of underwriting

☐ Head of claims

5. Highest level of education?

☐ Diploma ☐ Undergraduate

☐ Graduate ☐ Other

6. How long has the insurance company been in existence?

☐ Below 5 years ☐ 6-10 years

☐ 11-15 years ☐ 16-20 years

☐ More than 20 years

7. How many branches does the insurance firm have across the country?

☐ 1 branch ☐ 2-5 branches

☐ 6-10 branches ☐ More than 10 branches

PART B: ENTERPRISE RISK MANAGEMENT SYSTEMS INTEGRATION

Section I: Enterprise Risk Management Culture Integration

This section seeks to get your perspectives on the integration of enterprise risk management practices and thinking into the organization's overall culture.

Please indicate your level of agreement with the following aspects of Enterprise Risk Management Culture Integration on a five-point Likert scale, where 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree.

	1	2	3	4	5
Managers define risk management goals, policies, and tactics in detail.					
ERM is integrated into and compatible with the business's present operations.					
Supervisors promote consistent ERMS use.					

Managers take part in and contribute to the application of enterprise risk management.					
Workers understand how important risk management is.					

Section II: Enterprise Risk Management Process Integration

This section seeks to gather your perspectives on the integration of enterprise risk management into the company's overall processes.

Please indicate your level of agreement with the following statements relating to Enterprise Risk Management Process Integration on a five-point Likert scale, where 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree.

	1	2	3	4	5
The risk management procedure is often used.					
The risk management procedure is continuously enhanced to keep up with business activities.					
For every department, managers develop goals that align with the company's purpose, vision, and goals.					
Managers can find internal and external problems that could hinder the company's goals from using the right tools and techniques.					
Managers evaluate residual and inherent risk.					
When faced with a risk, managers take appropriate measures to lessen its impact and possibility.					
Each control activity's policies and procedures are spelled out so that risks may be addressed efficiently.					
Each control activity's policies and procedures are spelled out so that risks may be addressed efficiently.					
Decision-making information is fast, accurate, and dependable.					

A strategy is in place to track and assess enterprise risk.					

Section III: Enterprise Risk Management Structure Integration

This section seeks to gather your view on the integration of enterprise risk management into the company's overall structure.

In your opinion, indicate your level of agreement with the statements below relating to Enterprise Risk Management Structure Integration on a five-point Likert scale, where 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree.

	1	2	3	4	5
The managers and board of directors participate in and contribute to developing the enterprise risk management system.					
The Enterprise Risk Management System is directly under the jurisdiction of a committee.					
The Enterprise Risk Management System is being developed under direct committee supervision.					
A department is in charge of deciding on the policy and carrying it out by using the Enterprise Risk Management System's vision.					
Every employee uses the same framework for risk management.					

Section IV: Enterprise Risk Management Infrastructure

This section seeks to gather your view on the integration of enterprise risk management into the company's overall infrastructure.

Please indicate your level of agreement with the statements below relating to Enterprise Risk Management Infrastructure integration on a five-point Likert scale, where 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree.

	1	2	3	4	5
The organization employs a risk management specialist.					

An efficient method exists for assessing risk management.					
The organization offers suitable risk management training and knowledge-sharing sessions to its staff.					
For risk management, there are routes for both internal and external communication.					
Every so often, the effectiveness of risk management is evaluated.					

Section IV: Regulatory Compliance and Enterprise Risk Management

This section seeks to get your views on the current Regulatory Framework on Enterprise Risk Management.

Please indicate your level of agreement with the statements below relating to Government Policies on Enterprise Risk Management on a five-point Likert scale, where 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree.

	1	2	3	4	5
There are clear regulatory guidelines on enterprise risk management expectations.					
The enterprise risk management framework provided by the Regulator is easy to implement.					
The Regulator provides the necessary support for the Implementation of enterprise risk management.					
The company management is compliant with the enterprise risk management regulatory policies.					
There is a good working relationship between the Regulator and the insurance firm.					

Thank You for Your Participation

Appendix 2: Ethical Approval

Strathmore UNIVERSITY

11th September 2024

Ms Kina Anne,
kina.njiru@strathmore.edu

Dear Ms Kina,

RE: Influence of Enterprise Risk Management on Performance of Non-Life Insurance Companies

This is to inform you that SU-ISERC has reviewed and **approved** your above **SU-masters** proposal. Your application reference number is **SU-ISERC2286/24.** The approval period is from **11th September 2024 to 10th September 2025.**

This approval is subject to compliance with the following requirements:

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

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

Yours sincerely,

Mr Ambrose Rachier,
Chairperson; SU-ISERC

Appendix 3: Research Permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **492200**

Date of Issue: **27/March/2025**

RESEARCH LICENSE

This is to Certify that Ms.. Anne Kina Njiru of Strathmore University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: INFLUENCE OF ENTERPRISE RISK MANAGEMENT INTEGRATION ON FINANCIAL PERFORMANCE OF NON-LIFE INSURANCE COMPANIES IN KENYA for the period ending : 27/March/2026.

License No: **NACOSTI/P/25/417358**

492200

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

See overleaf for conditions

Appendix 4: Financial Data of Non-Life Insurance Companies

Non-Life Insurance Company	Profit of the Year (in '000)	Total Equity (in '000)	Total Assets (in '000)	ROE	ROA
AAR Insurance	48,850	1,507,212	5,998,802	0.0324	0.0081
Africa Merchant Assurance Company Ltd	2,224	1,087,527	3,092,274	0.0020	0.0007
AIG Kenya Insurance Company Ltd.	32,383	1,939,321	5,511,007	0.0167	0.0059
APA Insurance	926,698	5,889,422	16,928,166	0.1573	0.0547
Britam Kenya	1,463,727	5,759,438	18,471,604	0.2541	0.0792
Cannon General (K) Insurance	-117,302	959,558	2,781,285	-0.1222	-0.0422
CIC General Insurance	911,100	4,098,028	14,433,443	0.2223	0.0631
Corporate Insurance Company	-41,049	886,690	1,353,019	-0.0463	-0.0303
Directline Assurance Company	79,570	756,600	8,230,503	0.1052	0.0097
Fidelity Shield Insurance	179,424	1,090,907	4,626,684	0.1645	0.0388
First Assurance	31,304	1,728,824	6,286,701	0.0181	0.0050
GA Insurance	1,396,864	8,446,071	24,535,773	0.1654	0.0569
Geminia Insurance	54,484	2,253,246	5,593,164	0.0242	0.0097
ICEA LION General Insurance	979,830	7,439,291	15,926,421	0.1317	0.0615
Intra Africa Assurance	175,853	1,227,347	2,474,229	0.1433	0.0711
Jubilee Health Insurance	438,561	4,160,309	10,227,293	0.1054	0.0429
Kenindia Assurance Company	43,735	4,500,395	10,747,500	0.0097	0.0041
Kenya Orient General Insurance	-199,039	264,714	3,365,569	-0.7519	-0.0591
Madison General Insurance	133,322	659,795	7,243,292	0.2021	0.0184
Mayfair Insurance	1,094,067	5,359,276	12,465,817	0.2041	0.0878
Occidental Insurance Company	-578,568	245,072	3,404,221	-2.3608	-0.1700
Old Mutual	1,162,328	6,337,931	16,907,977	0.1834	0.0687
Pacis Insurance	145,520	909,600	3,430,933	0.1600	0.0424
Pioneer Insurance	48,971	1,793,561	3,719,251	0.0273	0.0132
Sanlam General Insurance	122,718	193,359	4,345,016	0.6347	0.0282

Star Discover Micro	16,682	82,849	158,598	0.2014	0.1052
Takaful Insurance of Africa	-13,798	521,491	1,133,622	-0.0265	-0.0122
Tausi Assurance Company	474,721	2,457,339	3,758,757	0.1932	0.1263
The Heritage Insurance Company	722,040	4,835,949	11,667,190	0.1493	0.0619
The Kenya Orient General Insurance	-354,519	-531,664	2,660,296	0.6668	-0.1333
Trident Insurance Company	34,528	2,435,314	6,772,191	0.0142	0.0051

Appendix 5: Non-Life Insurance Companies

1	AAR Insurance (Kenya) Limited
2	AIG Kenya Insurance Company Ltd.
3	Allianz Insurance Company
4	African Merchant Assurance Company Ltd
5	APA Insurance Limited
6	Britam Kenya General Insurance (K) Limited
7	Cannon General Insurance Company Limited
8	CIC General Insurance Limited
9	Corporate Insurance Company Limited
10	Direct line Assurance Company Limited
11	Fidelity Shield Insurance
12	First Assurance Company Limited
13	GA Insurance Company Limited
14	Geminia Insurance Company Limited
15	Heritage Insurance Company Ltd.
16	ICEA LION General Insurance Company Limited
17	Intra Africa Assurance Company Limited
18	Invesco Assurance Company Ltd.
19	Jubilee Allianz General Insurance Limited
20	Kenindia Assurance Company Limited
21	Kenya Orient General Insurance Limited
22	Kenya Alliance Insurance
23	Madison General Insurance
24	Mayfair Insurance Company Limited
25	Occidental Insurance Company Limited
26	Old Mutual General Insurance Company
27	Pacis Insurance Company Limited
28	MUA Insurance Company Limited
29	Pioneer General Insurance Company Limited

30 Sanlam General Insurance Company Limited

31 Star Discover Micro Insurance Company Limited

32 Takaful Insurance of Africa Ltd

33 Tausi Assurance Company Ltd

34 The Monarch Insurance Company Ltd

35 Trident Insurance Company

36 UAP Insurance Company

37 Xplico Insurance Company

Source (AKI, 2022)