Int Journal of Social Sciences Management and Entrepreneurship 9(2): 593-608 2025

ISSN 2411-7323

www.sagepublishers.com

PERFORMANCE OF PENSION SCHEMES IN NAIROBI CITY COUNTY: THE PARADOXICAL EFFECTS OF RISK MANAGEMENT STRATEGIES

[1]Tonui Fredrick Kibet, [2]Charles Mwirigi, PhD, & [3]Susan Wasike, PhD

[1,2,3]Department of Commerce and Economic Studies, JKUAT
Corresponding Email: tonuifred78@gmail.com

ABSTRACT

The general objective of this study was to assess the effect of risk management strategies on performance of pension schemes in Nairobi City County, Kenya. Specifically, the study sought to establish the effect of risk identification, risk assessment, risk response and risk monitoring and review on performance of pension schemes in Nairobi City County. This research was based on risk management theory, modern portfolio theory, agency theory, and resource-based view theory to explain the relationship between the study variables. The population for the study was all the 48 individual pension schemes in Nairobi City County, Kenya. Since the population was relatively small, the study was a census. The target respondents were the heads of risk, heads of finance and heads of operations in each scheme or their equivalent, giving a total of 144 respondents. The study made use of both primary and secondary data. Primary data was collected through structured questionnaires and was analysed through descriptive and inferential statistics by use of means, standard deviation, correlation and regression analyses using SPSS version 27. Data was presented in the form of frequency tables. The regression results revealed an R Square of 0.931, indicating that 93.1% of the variation in performance was explained by the four risk management strategies. The ANOVA results showed that the overall model was statistically significant ($F = 438.870$, $p = 0.000$). The regression coefficients for the independent variables were all positive and significant: risk identification ($\beta = 0.238$, $p = 0.000$), risk assessment ($\beta = 0.425$, $p = 0.000$), risk response ($\beta = 0.231$, $p = 0.000$), and risk monitoring and review ($\beta = 0.695$, $p = 0.000$). The study concluded that each of the four strategies significantly contributes to the performance of pension schemes, with risk monitoring and review being the most influential. The study recommends that pension schemes strengthen stakeholder involvement in risk identification, integrate risk assessment results into decision-making, enhance employee training in risk response, and institutionalize dynamic risk monitoring and review mechanisms to support continuous improvement and strategic agility.

Keywords: *Performance, risk management strategies, risk identification, risk assessment, risk response, and risk monitoring and review*

1.0 Introduction

In the current era of globalization, performance among pension schemes is of paramount importance as it directly influences the financial stability and security of retirees, thereby contributing to the overall economic health of a nation. Effective performance ensures that pension schemes can meet their long-term obligations, provide consistent and reliable benefits to members, and adapt to the dynamic global financial markets (Asiedu *et al.,* 2024). Additionally, as per Aminu (2022), high performance in pension schemes enhances their credibility and trustworthiness, attracting more participants and investors, which is crucial for sustainability (Ali *et al.,* 2024). As globalization intensifies market competition and economic uncertainties, robust performance management enables pension schemes to navigate risks, optimize returns, and ensure compliance with international regulatory standards, ultimately fostering economic resilience and social welfare (Szczepański, 2023).

Risk management strategies play a critical role in influencing the performance of pension schemes by ensuring the identification, assessment, and mitigation of potential risks that could adversely affect their financial stability and ability to meet their long-term obligations (van der Heide, 2023). According to Obasa (2022), effective risk identification allows pension schemes to pinpoint potential threats, whether they are market-related, operational, or regulatory. By understanding these risks early, pension schemes can proactively develop strategies to mitigate them, thus preventing significant financial losses. Risk assessment further deepens this understanding by evaluating the likelihood and impact of identified risks, enabling pension schemes to prioritize their risk management efforts and allocate resources efficiently (Moronfoye, 2023). This structured approach not only protects the assets of the pension schemes but also builds confidence among stakeholders, including contributors and beneficiaries, about the scheme's ability to manage future uncertainties (Ring, 2022).

Moreover, the implementation of robust risk response strategies, including risk avoidance, reduction, transfer, or acceptance, ensures that pension schemes are well-prepared to handle adverse events (Li & Henry, 2022). According to Andrews et al. (2022), by continuously monitoring and reviewing risks, pension schemes can adapt to changing market conditions and regulatory environments, ensuring ongoing compliance and operational efficiency. This dynamic risk management process contributes to better investment decisions, improved asset management, and optimized returns, all of which enhance the overall performance of pension schemes (Kajwang, 2022).

Globally, effective risk management has been increasingly recognized as a critical component for the performance and sustainability of pension schemes (Kabuche, 2023). Studies by Ring (2024), countries with well-established pension systems, such as those in North America and Europe, have implemented robust risk management frameworks that address various financial, operational, and governance risks. For instance, in Canada, the Canada Pension Plan Investment Board employs sophisticated risk management strategies to mitigate financial risks, ensuring stable and growing returns for its beneficiaries. The successful implementation of these strategies has resulted in consistent long-term growth, safeguarding the retirement security of millions of Canadians (Li & Henry, 2022).

However, there have also been instances where poor risk management has led to significant challenges for pension schemes. In the case of Greece during the 2008 financial crisis, many pension funds were heavily invested in government bonds, which became devalued during the crisis (Kanellopoulos, 2022). Other studies by Xakousti *et al.*, (2023), stated that the lack of diversification and poor risk management practices led to massive losses, jeopardizing the financial sustainability of these pension schemes and ultimately requiring significant reforms and government intervention. This highlights how ineffective risk management can threaten the viability of pension systems, especially in times of economic volatility (Glonti *et al.,* 2023).

Globally, pension funds are increasingly embracing risk management strategies that focus on diversification, scenario analysis, and dynamic risk monitoring (van Hekken *et al.,* 2023). Pension schemes in countries like Australia and the Netherlands as stated by Donald (2022), have adopted advanced investment strategies and tools such as stress testing and scenario planning to anticipate market fluctuations and economic shifts. These proactive approaches have allowed pension schemes in these countries to weather financial crises and market downturns, securing better outcomes for their beneficiaries and positioning them as examples of best practices in the global pension sector (Mohd Isa & Daukin, 2023).

In Africa, the performance of pension schemes varies significantly across regions, with risk management playing a critical role in their success or failure (Assefuah *et al.,* 2022). South Africa's pension system, one of the largest and most advanced on the continent, has demonstrated success in implementing sound risk management practices. The country's pension funds, such as the Government Employees Pension Fund, have adopted comprehensive risk management frameworks that include diversified investment portfolios and strong regulatory oversight (Sithole & Lotter, 2024). This has contributed to the stability and consistent performance of South African pension schemes, even in times of economic uncertainty (Rusconi, 2021).

Conversely, as per Chivandire (2023), other countries in the region, such as Zimbabwe, have experienced challenges with pension scheme performance due to inadequate risk management. The hyperinflation crisis in the early 2000s severely impacted pension funds in Zimbabwe, eroding the value of pensions and leaving many retirees without sufficient income. Mashamba and Magweva (2022) concluded lack of risk management strategies to hedge against inflation and economic instability was a significant factor contributing to the downfall of the country's pension schemes. This example underscores the importance of proactive risk management in safeguarding pension funds from macroeconomic risks that are prevalent in many African countries (Dafuleya, 2023).

In East Africa, countries like Kenya and Uganda are making strides toward improving risk management within their pension sectors (Nyang'oro & Njenga, 2022). Kenya's Retirement Benefits Authority (RBA) has been working to strengthen governance and risk management practices among pension schemes through regulations and guidelines (Kimathi & Kathula, 2022). While challenges remain, such as market volatility and regulatory compliance, these efforts are helping to create a more resilient pension system. The regional perspective shows both successful and unsuccessful stories, highlighting the need for continuous improvement in risk management practices to enhance pension scheme performance across Africa (Kiriinya, 2022).

In Kenya, the management of pension schemes has faced both successes and challenges, with risk management playing a crucial role in determining the performance of these schemes (Gitau & Sang, 2022). According to Wambua, et al. (2024), the National Social Security Fund (NSSF) is one of Kenya's largest pension schemes and has made notable strides in improving risk management. Through a focus on diversified investment strategies and enhanced governance structures, the NSSF has been able to stabilize its returns and safeguard members' contributions. This has improved the fund's performance, positioning it as a key player in the Kenyan pension industry (Waga *et al.,* 2021).

Despite these successes, many local pension schemes have struggled with poor risk management, leading to suboptimal performance. For instance, some pension schemes in Kenya have been criticized for inadequate investment strategies and governance weaknesses, which have exposed them to financial risks (Kandie *et al.,* 2023). Kiriinya (2022) noted he failure to adopt comprehensive risk management practices has resulted in low returns, eroding member confidence in the pension system. Moreover, regulatory compliance issues and weak internal controls have contributed to these challenges, illustrating the need for more robust risk management frameworks within local pension schemes (Nyabuto, 2022).

On a positive note, the Retirement Benefits Authority (RBA) in Kenya has been working to improve risk management across the industry. Through the introduction of stricter regulations, risk monitoring, and the promotion of good governance practices, the RBA is creating a more secure environment for pension schemes (Koskey, 2023). As per Wekhanya (2021), these efforts are aimed at improving the performance of pension funds, protecting members' contributions, and ensuring the long-term sustainability of the pension system. While there is still room for improvement, these initiatives reflect Kenya's growing commitment to strengthening risk management and enhancing the performance of its pension schemes.

1.1 Statement of the Problem

Despite the global recognition of pension schemes as a critical component of social security and financial stability for retirees, many schemes in Kenya have struggled with performance issues, resulting in financial distress and reduced benefits for members (Asiedu et al., 2024). The underperformance of pension schemes is evident in the growing number of schemes facing significant financial challenges, such as reduced investment returns and funding deficits (Kandie et al., 2023). According to the RBA Report (2022), nearly 30% of pension schemes in Kenya reported a decline in their funding status, with some even facing insolvency risks. With 48 registered pension schemes in Kenya (RBA, 2023), this problem is not confined to a few isolated cases but spans across the entire pension industry in Kenya, threatening the financial security of millions of retirees. The failure to manage risks effectively leads to substantial losses in revenue, diminished trust among contributors, and potential economic instability (Kimathi & Kathula, 2022). The urgency to address these issues is heightened by the increasing life expectancy and the aging population, which put additional pressure on pension schemes to deliver sustainable and adequate retirement benefits (Gitau & Sang, 2022).

Existing literature has explored various aspects of risk management and its impact on performance, yet significant gaps remain. Theoretical frameworks such as the Risk Management Theory and the Modern Portfolio Theory highlight the importance of risk management in optimizing investment returns and ensuring financial stability (Andrews *et al.,* 2022). However, empirical studies specifically focused on pension schemes in the Kenyan context are limited (Kajwang, 2022; Kandie *et al.,* 2023). Most research has concentrated on broader financial institutions or different geographic locations, leaving a contextual gap in understanding how risk management strategies can be tailored to the unique challenges faced by Kenyan pension schemes. Additionally, there is a lack of comprehensive studies that examine the integrated effect of risk identification, assessment, response, and monitoring on the performance of these schemes (Kimathi & Kathula, 2022). Addressing these empirical, contextual, and theoretical gaps is crucial to developing targeted strategies that can enhance the resilience and performance of pension schemes in Kenya.

This research is significant as it aims to provide a comprehensive analysis of how risk management strategies can improve the performance of pension schemes in Kenya. By identifying and addressing the specific risk management practices that contribute to better performance, the study offers valuable insights for policymakers, pension scheme managers, and stakeholders. It contributes to the existing body of knowledge by filling the identified gaps and providing evidence-based recommendations for enhancing the financial health and sustainability of pension schemes. Moreover, the findings of this study could have broader implications for other developing countries facing similar challenges, thereby contributing to global discussions on pension fund management and social security.

1.2 Research Objectives

1.2.1 General objective

The general objective of this study was to determine the effect of risk management strategies on performance of pension schemes in Nairobi City County, Kenya.

1.2.2 Specific objectives

i. To establish the effect of risk identification on performance of pension schemes in Nairobi City County, Kenya.
ii. To determine the effect of risk assessment on performance of pension schemes in Nairobi City County, Kenya.
iii. To assess the effect of risk response on performance of pension schemes in Nairobi City County, Kenya.
iv. To examine the effect of risk monitoring and review on performance of pension schemes in Nairobi City County, Kenya.

2.0 Literature Review

2.1 Theoretical Literature Review

This study is anchored on the risk management theory, and supported by modern portfolio theory, and agency theory.

2.1.1 Risk Management Theory

Risk management theory by Nocco and Stulz (2006) argue that risk management should be seen as a key component of value creation within firms, rather than a mere compliance or defensive mechanism. They postulate that effective risk management allows firms to reduce their exposure to undesirable outcomes, manage volatility, and ensure stable earnings. Their theory emphasizes the integration of risk management into the core strategic and operational decision-making processes, suggesting that by identifying, assessing, and mitigating risks, organizations can protect against financial distress and enhance long-term value (Lynch et al., 2023). The theory advocates for a holistic approach to risk management, where risks are viewed comprehensively rather than in silos, ensuring that companies maintain their competitive edge by aligning risk management practices with overall business strategy (Kwon et al., 2023).

Despite its contributions, the risk management theory has faced criticisms. One key criticism is that it assumes that firms have the necessary resources, knowledge, and systems to effectively manage risks across all areas of their operations, which may not be the case for smaller firms or those in less developed markets (Kure *et al.,* 2022). Critics also argue that the theory overly focuses on financial risks and may neglect non-financial risks such as operational or reputational risks, which can be equally detrimental to organizations (Jankensgard & Kapstad, 2021). Additionally, while the theory emphasizes the integration of risk management into strategic decision-making, critics note that it may not fully account for the complexities and unpredictability of certain risks, particularly in volatile and rapidly changing industries, where risk management frameworks may need to be more flexible and adaptable (Wijaya, 2021).

The risk management theory was relevant to the current study, which aimed to determine the effect of risk management strategies on the performance of pension schemes in Kenya. The theory's emphasis on integrating risk management into strategic decision-making aligns with the study's focus on how practices like risk identification, assessment, response, and monitoring impact the overall performance of pension schemes. By applying the holistic approach suggested by the theory, pension schemes can better mitigate financial, operational, and governance risks, thereby ensuring higher returns, member retention, and employee productivity. The study benefits from this theory as it offers a framework for understanding how comprehensive risk management practices can enhance the sustainability and performance of pension schemes, which is crucial for protecting members' interests and ensuring the long-term viability of the schemes.

2.1.2 Modern Portfolio Theory

Modern Portfolio Theory (MPT), developed by Harry Markowitz (1952), postulates that investors can optimize their portfolios by balancing risk and return through diversification. Markowitz argues that by investing in a combination of assets with varying levels of risk and return, investors can achieve the maximum possible return for a given level of risk or, conversely, minimize risk for a desired level of return. MPT assumes that investors are risk-averse, meaning they prefer less risk to more risk for the same level of expected return. The theory introduces the concept of the efficient frontier, where portfolios that offer the best possible risk-return combinations lie (Lukomnik & Hawley, 2021). According to MPT, the key to optimizing portfolios lies in considering the correlation between assets, as combining assets with low or negative correlations can reduce overall portfolio risk (Rahmani, 2024).

Despite its widespread application, Modern Portfolio Theory has faced several criticisms. One of the main criticisms is that MPT relies on historical data to predict future returns and risks, assuming that past performance will be indicative of future outcomes, which is often not the case in unpredictable markets (Cui & Cheng, 2022). Additionally, the theory assumes that asset returns follow a normal distribution and that investors can always accurately estimate the probability of returns, which oversimplifies real-world market conditions where returns can be skewed or exhibit extreme volatility (Sandwick & Collazzo, 2021). Another criticism is that MPT ignores the potential for behavioral biases in investors, such as overconfidence or herd behavior, and assumes that all investors are rational and risk-averse, which does not always align with observed investor behavior in practice (Hu, 2022).

Modern Portfolio Theory was particularly relevant to the current study on the effect of risk management strategies on the performance of pension schemes in Kenya, as it emphasizes the importance of diversification in managing risk. Pension schemes, like investment portfolios, are exposed to various financial risks, and MPT's principle of reducing risk through diversification can be directly applied to risk management practices. For instance, pension schemes can enhance their performance by diversifying their investments across different asset classes with varying levels of risk and return, thereby minimizing exposure to any single risk. The theory also aligns with the study's focus on risk identification and assessment, as it encourages pension schemes to evaluate the correlation between their investment choices and adjust their portfolios to optimize risk and return. By leveraging the concepts of MPT, pension schemes can make more informed decisions to enhance financial sustainability and member satisfaction, key objectives of the current study.

2.1.3 Agency Theory

Agency Theory, introduced by Jensen and Meckling (1976), postulates that there is a potential conflict of interest between the principals (owners or shareholders) and agents (managers) within an organization. The theory suggests that agents, who are tasked with managing the company on behalf of the principals, may not always act in the best interest of the owners. Instead, agents may prioritize their own objectives, such as increasing personal compensation or reducing effort, which can lead to inefficiencies and suboptimal outcomes for the organization (Solomon et al., 2021). Agency problem can be mitigated through mechanisms such as performance-based incentives, monitoring, and contractual agreements, but these solutions also come with costs, referred to as agency costs. The theory highlights the need for alignment between the interests of agents and principals to ensure organizational performance (Aluchna, 2023).

While Agency Theory has been influential in understanding the principal-agent relationship, it has been criticized for its assumptions and limitations. One key criticism is its narrow focus on financial incentives and monitoring as solutions to agency problems, ignoring non-financial factors such as trust, organizational culture, and employee motivation, which can also influence agent behavior (Macho & Pérez, 2021). Additionally, the theory assumes that all agents are self-interested and will always act in ways that maximize their personal benefits at the expense of principals, which overlooks the complexity of human behavior and the possibility of agents acting out of ethical or altruistic motivations (Musa & Ibrahim, 2022). Another criticism is that Agency Theory does not fully account for situations where the goals of agents and principals might align naturally, reducing the need for extensive monitoring or incentives. Critics also argue that the theory's focus on economic motivations downplays the role of collaboration, communication, and shared objectives in organizational success (Tipu & Yousaf, 2022).

Agency Theory was relevant to the current study on the effect of risk management strategies on the performance of pension schemes in Kenya, as pension schemes often involve a principal-agent relationship between trustees (agents) and scheme members (principals). The theory sheds light on potential conflicts of interest where pension scheme managers may not always act in the best interest of members, particularly in risk management practices. For example, if risk management is not aligned with the long-term objectives of members, agents may take excessive risks or fail to implement adequate risk controls. The study's focus on risk identification, assessment, response, and monitoring can be better understood through the lens of Agency Theory, as it highlights the importance of governance structures and monitoring mechanisms to ensure that agents manage pension schemes effectively and in the best interest of members. By applying Agency Theory, the study can explore how pension schemes can reduce agency costs and align the interests of trustees and members to improve performance and safeguard pension assets.

2.2 Empirical Literature Review

Studies by Algremazy *et al*., (2023) conducted in Spain to assess the effect of risk management strategies on the performance of construction firms. The study surveyed 170 senior managers and employed path analysis for data interpretation. The findings indicated that risk management strategies contributed to 48% of the variance in project performance. Furthermore, 74% of respondents stated that effective risk management reduced project delays and cost overruns. This study highlights the critical role of risk management in improving project delivery and performance in the construction sector.

On the other hand, Chhinh *et al.,* (2023) investigated the influence of risk management strategies on the performance of agricultural cooperatives in Vietnam. Data was collected from 120 cooperative managers, and structural equation modeling was used for data analysis. The results indicated that risk management strategies, particularly risk identification and response, contributed to 52% of the variance in performance. Moreover, 75% of the respondents confirmed that implementing these strategies reduced operational risks and improved productivity. This study demonstrates the importance of risk management for sustainable agricultural performance.

Muindi *et al.*, (2023) investigated the effect of risk management strategies on the performance of microfinance institutions in Kenya. The study collected data from 160 senior managers and used multiple regression analysis for data analysis. The results revealed that risk management strategies, including risk monitoring and review, accounted for 53% of the variance in financial performance. Additionally, 79% of the respondents indicated that risk management had enhanced financial resilience and customer satisfaction. This study illustrates the importance of risk management in strengthening the financial performance of microfinance institutions in Kenya.

Mauchi (2022) examined the impact of risk management strategies on the performance of small and medium-sized enterprises (SMEs) in Zimbabwe. Data was collected from 140 SME managers and analyzed using multiple regression analysis. The study revealed that risk management practices, such as risk assessment and mitigation, accounted for 50% of the variance in financial performance. Additionally, 68% of respondents reported that risk management strategies significantly improved the financial stability of their businesses. This research underscores the relevance of risk management for the growth and sustainability of SMEs.

Nguyen (2022) explored the effect of risk management strategies on the performance of banking institutions in the UK. Data was collected from 200 senior managers, and multiple regression analysis was used for data interpretation. The study found that risk management strategies, including risk monitoring and review, accounted for 58% of the variance in financial performance. Additionally, 82% of respondents acknowledged that effective risk management improved financial stability and customer trust. This research underscores the critical role of risk management in maintaining the financial health of banking institutions.

Whittle and Nel-Sanders (2022) conducted a study in South Africa to examine the impact of risk management strategies on the performance of public sector organizations. The study collected data from 150 public sector managers and analyzed it using path analysis. The findings showed that risk management strategies accounted for 45% of the variance in service delivery performance. Furthermore, 70% of the respondents indicated that risk management practices had significantly improved service delivery and reduced operational inefficiencies. This study highlights the significance of risk management in improving public sector performance.

Kumar and Anbanandam (2021) examined the influence of risk management strategies on the performance of manufacturing firms in India. The study surveyed 180 senior managers and employed structural equation modeling for analysis. The results showed that risk management practices, such as risk monitoring and response, contributed to 54% of the variance in operational performance. Moreover, 78% of the respondents reported a reduction in operational disruptions due to robust risk management practices. These findings emphasize the importance of risk management in enhancing operational stability in the manufacturing sector.

2.3 Conceptual Framework

Figure 1 shows the study's conceptual framework which shows the interrelation between the independent variable and the dependent variable.

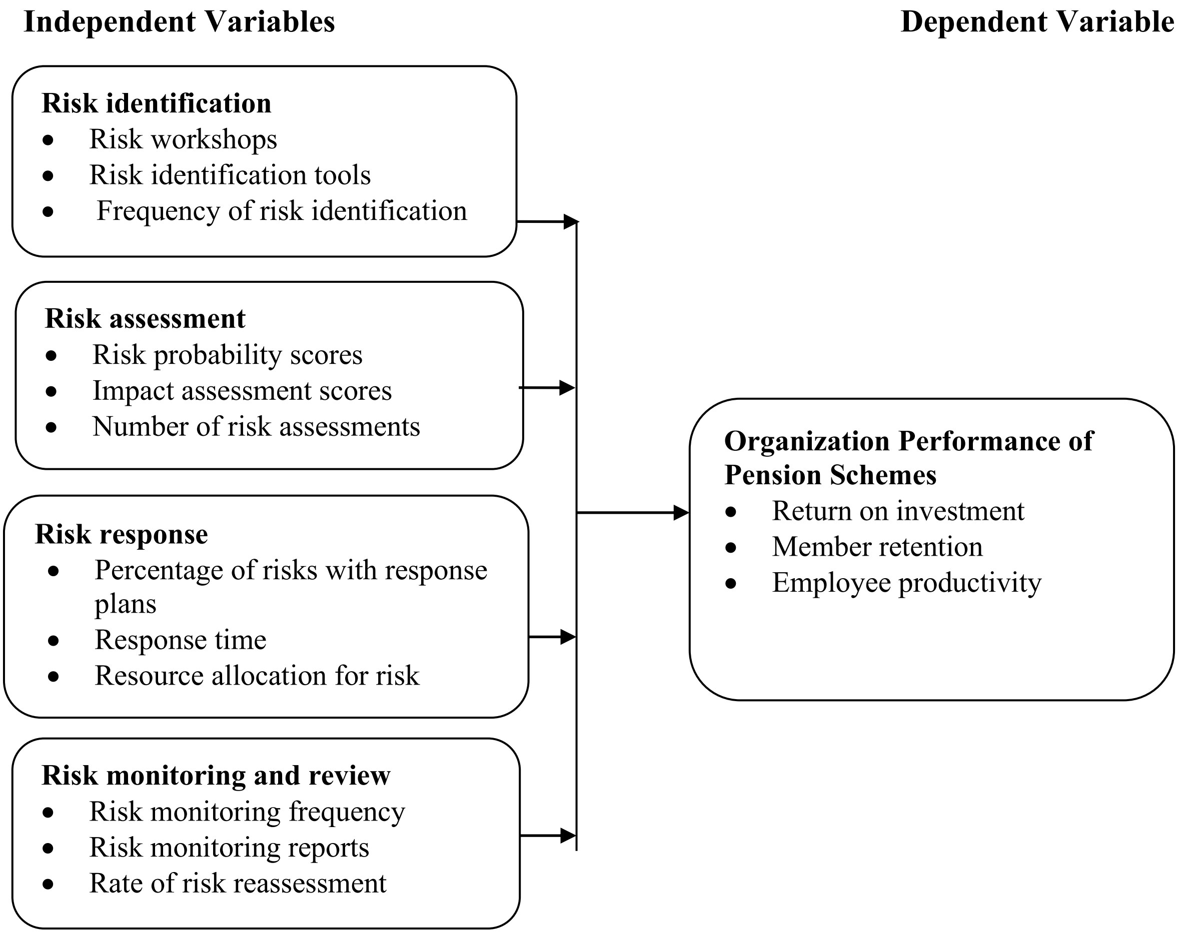

Figure 1: Conceptual Framework

3.0 Research Methodology

A causal research design was used. The population for the study was all the 48 pension schemes in Kenya. Since the population was relatively small, the study was a census. The target respondents were the heads of risk, heads of finance and heads of operations in each scheme or their equivalent, giving a total of 144 respondents. The study made use of both primary and secondary data. Primary data was collected through structured questionnaires and was analyzed through descriptive and inferential statistics by use of means, standard deviation, correlation and regression analyses using SPSS version 27. Data was presented in the form of frequency tables.

4.0 Results and Discussion

4.1 Descriptive statistics

The first objective of the study was to establish the effect of risk identification on the performance of pension schemes. Descriptive results revealed a moderate implementation of risk identification practices, with an overall mean score of 2.97. While respondents agreed that their organizations used effective tools and techniques for identifying risks (mean = 3.76), the frequency of risk identification activities and involvement of stakeholders were rated relatively low (means = 2.70 and 2.45 respectively). These results imply that while some pension schemes have adopted formal risk identification methods, the process may lack consistency and broad stakeholder engagement.

The second objective of the study was to determine the effect of risk assessment on the performance of pension schemes in Nairobi City County, Kenya. Descriptive results indicated a relatively low level of agreement among respondents on the implementation of risk assessment practices, with an overall mean score of 2.78. While the use of reliable methods to prioritize risks was moderately rated (mean = 2.97), key practices such as using risk assessment outcomes to inform decision-making (mean = 2.48) and resource allocation (mean = 2.57) were rated lower. These findings imply that although some pension schemes evaluate risk likelihood and impact, the integration of assessment results into planning and resource deployment remains limited.

The third objective of the study was to establish the effect of risk response on the performance of pension schemes in Nairobi City County, Kenya. Descriptive statistics showed a relatively high level of agreement among respondents, with an overall mean score of 3.64. Most pension schemes reported having well-defined risk response plans (mean = 4.10) and regularly updating their response strategies (mean = 3.93). However, slightly lower scores were recorded for employee training in implementing risk responses (mean = 3.24) and the customization of response plans to specific risks (mean = 3.13), suggesting that while response frameworks are in place, operational readiness and adaptability may vary across institutions.

The fourth objective of the study was to examine the effect of risk monitoring and review on the performance of pension schemes in Nairobi City County, Kenya. Descriptive statistics indicated a high level of implementation, with an overall mean score of 3.96, the highest among the four risk management strategies. Respondents agreed that their organizations monitor risks regularly (mean = 3.90), review the effectiveness of risk responses (mean = 4.04), and use feedback from monitoring activities to improve strategies (mean = 4.21). These results suggest that pension schemes are not only proactive in tracking changes in the risk environment but are also leveraging monitoring data to refine their risk management frameworks.

4.5 Correlation Analysis

Table 1 presents the Pearson correlation results showing the strength and direction of the relationship between risk management strategies and the performance of pension schemes in Kenya, evaluated at the 5% significance level.

Table 1: Correlation Results

		Performance	Risk Identification	Risk Assessment	Risk Response	Risk Monitoring and Review
Performance	Pearson Correlation	1				
	Sig. (2-tailed)					
Risk Identification	Pearson Correlation	.711**	1			
	Sig. (2-tailed)	.000				
Risk Assessment	Pearson Correlation	.559**	.900**	1		
	Sig. (2-tailed)	.000	.000			
Risk Response	Pearson Correlation	.916**	.731**	.622**	1	
	Sig. (2-tailed)	.000	.000	.000		
Risk Monitoring and Review	Pearson Correlation	.945**	.742**	.661**	.919**	1
	Sig. (2-tailed)	.000	.000	.000	.000	

**. Correlation is significant at the 0.01 level (2-tailed).
b. Listwise N=136

The results reveal that all four independent variables—risk identification, risk assessment, risk response, and risk monitoring and review—are positively and significantly correlated with performance, with p-values of 0.000 in each case, which are well below the 0.05 threshold. The strongest correlation was observed between risk monitoring and review and performance ($r = .945$), followed closely by risk response ($r = .916$). This implies that pension schemes that actively monitor and adjust their risk strategies, as well as respond swiftly to emerging risks, tend to experience higher levels of organizational performance. These findings are consistent with the study by Nguyen (2022), who found that risk monitoring significantly enhanced financial stability and customer trust in UK banks, and with Muindi et al. (2023), who reported that risk response strategies boosted financial resilience in microfinance institutions in Kenya.

Risk identification and risk assessment also demonstrated significant positive relationships with performance, with correlation coefficients of .711 and .559, respectively. While these relationships are slightly weaker than those of response and monitoring, they still suggest that proactive identification and evaluation of risks contribute meaningfully to improved outcomes. These results support earlier empirical findings by Chen *et al.,* (2020), who observed that institutions with systematic risk identification and assessment practices achieved higher profitability, and Chhinh *et al.,* (2023), who highlighted the role of early risk recognition in enhancing productivity in agricultural cooperatives. Overall, the correlation analysis affirms that comprehensive and integrated risk management strategies are closely associated with better performance outcomes among pension schemes in Kenya.

4.2 Test of Hypothesis

This section presents the results of the multiple linear regression analysis. The analysis includes model fitness, analysis of variance (ANOVA), and regression coefficients to assess the strength, significance, and predictive power of the model.

Table 2: Model Fitness

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.965[a]	.931	.928	.226045	2.286

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

b. Dependent Variable: Performance

Table 2 indicates a very strong positive relationship between the combined risk management strategies and performance, with a correlation coefficient (R) of 0.965 and an R Square of 0.931. This implies that 93.1% of the variance in the performance of pension schemes is explained by the four independent variables: risk identification, risk assessment, risk response, and risk monitoring and review.

Table 3: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	89.699	4	22.425	438.870	.000[b]
	Residual	6.694	131	.051		
	Total	96.392	135			

a. Dependent Variable: Performance

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

Table 3 presents the ANOVA results, which show that the overall regression model is statistically significant at the 5% level (F = 438.870, p = 0.000). This confirms that the combination of risk management strategies significantly predicts the performance of pension schemes in Kenya.

Table 4: Regression Coefficients

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.143	.174		6.559	.000
	Risk Identification	.238	.046	.317	5.185	.000
	Risk Assessment	.425	.065	.353	6.580	.000
	Risk Response	.231	.058	.240	3.963	.000
	Risk Monitoring and Review	.695	.059	.723	11.842	.000

a. Dependent Variable: Performance

The multiple regression model used is illustrated below:

Y = 1.143+ 0.238X1 + 0.425X2 + 0.231X3+ 0.695X4

Where:

Y = Performance of Pension Schemes

X1 = Risk Identification
X2 = Risk Assessment
X3 = Risk Response
X4 = Risk Monitoring and Review
All four risk management components have positive and statistically significant coefficients ($p < 0.05$), meaning each contributes significantly to performance. Risk monitoring and review has the strongest effect ($\beta = 0.695$, $p = 0.000$), followed by risk assessment ($\beta = 0.425$, $p = 0.000$), risk identification ($\beta = 0.238$, $p = 0.000$), and risk response ($\beta = 0.231$, $p = 0.000$). These findings validate previous empirical studies such as Nguyen (2022), Muindi et al. (2023), and Chen et al. (2020), who emphasized that well-structured and regularly reviewed risk management practices lead to stronger financial performance and institutional resilience.

5.0 Conclusion

The study concludes that risk identification plays a significant role in influencing the performance of pension schemes in Kenya. While many schemes have adopted tools and techniques for identifying risks, the frequency and inclusivity of these practices remain moderate. The results suggest that pension schemes that regularly and comprehensively identify both internal and external risks tend to perform better, as early recognition enables timely mitigation and strategic alignment. Therefore, enhancing stakeholder participation and embedding risk identification as a continuous process can strengthen institutional preparedness and drive improved performance.

The findings also demonstrate that risk assessment is a critical component of effective risk management, significantly contributing to performance outcomes. However, despite having mechanisms to assess the probability and impact of risks, many schemes fall short in utilizing assessment outcomes to inform decision-making and allocate resources effectively. This gap limits the strategic value of risk assessment and hinders its full contribution to performance. Thus, pension schemes must not only assess risks but also integrate these insights into core planning and operational decisions to realize their performance benefits.

With regard to risk response, the study concludes that having structured and proactive response mechanisms positively influences performance. Most pension schemes have well-defined response plans and allocate resources for implementation, but they must improve employee training and tailor responses to their specific risk exposures. The study establishes that effective risk response enhances institutional resilience and ensures that pension schemes can absorb shocks and maintain continuity. Consequently, improving the operational capacity to execute these responses is essential for strengthening institutional agility and effectiveness.

Finally, the study finds that risk monitoring and review is the most influential risk management strategy in enhancing the performance of pension schemes. Schemes that continuously monitor their risk environments, generate comprehensive reports, and adapt their strategies based on feedback demonstrate significantly better performance. This underscores the importance of risk oversight as a dynamic and iterative process that ensures timely responses and long-term sustainability. The study therefore concludes that pension schemes should institutionalize strong monitoring systems as a foundation for strategic decision-making, compliance, and continuous improvement.

6.0 Recommendations

Based on the findings, the study recommends that pension schemes in Nairobi City County, Kenya strengthen their risk identification processes by institutionalizing regular and structured risk workshops that involve a wide range of stakeholders. This includes input from board members, departmental heads, and external consultants to ensure that all potential internal and external risks are captured. Clear documentation and communication of identified risks should also be prioritized to support coordinated responses and improve institutional awareness across departments.

The study further recommends that pension schemes enhance their risk assessment practices by adopting standardized methodologies for evaluating the likelihood and impact of risks. Beyond conducting assessments, schemes should ensure that the outcomes are systematically integrated into decision-making processes and resource allocation frameworks. This may involve training management teams on how to interpret assessment findings and embedding risk-based planning into budgeting, investment selection, and operational strategy.

In relation to risk response, the study recommends that pension schemes invest in ongoing staff training and capacity building to ensure effective execution of response plans. Risk response strategies should be dynamic, regularly updated, and tailored to the specific needs and exposures of each scheme. Additionally, schemes should establish performance indicators to measure the effectiveness of implemented responses and create feedback loops that support learning and adaptation.

Lastly, the study recommends that pension schemes institutionalize comprehensive risk monitoring and review mechanisms. These should include automated risk tracking systems, regular review meetings, and periodic generation of risk performance reports. Feedback from monitoring activities should be formally documented and used to refine risk strategies and improve future preparedness. Emphasizing continuous improvement through monitoring will enable schemes to remain adaptive, resilient, and aligned with emerging risks in a dynamic economic and regulatory environment.

REFERENCES

Algremazy, N. A., Ideris, Z., Alferjany, M. A., & Akram, A. (2023). The effect of risk management practices on project performance: A case study of the Libyan Construction Industry. *International Journal of Professional Business Review*, *8*(6), e01420-e01420.

Ali, M., Nadeem, T., & Ali, M. S. (2024). Analysis of financial performance of islamic mutual funds & islamic pension funds in Pakistan. *Contemporary Issues in Social Sciences and Management Practices*, *3*(1), 105-115.

Aluchna, M. (2023). Agency Theory. In *Encyclopedia of Sustainable Management* (pp. 87-95). Cham: Springer International Publishing.

Aminu, S. A. (2022). *Financial performance of pension funds in Nigeria* (Master's thesis, Universidade de Lisboa (Portugal).

Andrews, D., Bonnar, S., Curtis, L. J., Oberoi, J. S., Pittea, A., & Tapadar, P. (2022). Impact of the choice of risk assessment time horizons on defined benefit pension schemes. *Annals of Actuarial Science*, *16*(2), 214-242.

Asiedu, E., Ansah, N. K. O., Boakye, A. N., & Malcalm, E. (2024). Financial performance of private pension funds in Ghana: The effect of Risk Management. *Journal of Financial Risk Management*, *13*(2), 376-395.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of management*, *17*(1), 99-120.

Berk, R., Heidari, H., Jabbari, S., Kearns, M., & Roth, A. (2021). Fairness in criminal justice risk assessments: The state of the art. *Sociological Methods & Research*, *50*(1), 3-44.

Chen, Y., Zheng, W., Li, W., & Huang, Y. (2021). Large group activity security risk assessment and risk early warning based on random forest algorithm. *Pattern Recognition Letters*, *14*(4), 1-5.

Chhinh, N., Sok, S., Sou, V., & Nguonphan, P. (2023). Roles of Agricultural Cooperatives (ACs) in Drought Risk Management among Smallholder Farmers in Pursat and Kampong Speu Provinces, Cambodia. *Water*, *15*(8), 14-47.

Chivandire, L. (2023). Navigating Pension Fund Trusteeship: A Comprehensive Overview of Trustees' Obligations in Zimbabwe. *Available at SSRN 4406679*.

Dafuleya, G. (2023). Linking formal and informal social protection in an insecurity regime: The case of Zimbabwe. *Handbook on Social Protection and Social Development in the Global South*, *2*(5);331-349.

Donald, M. S. (2022). Modern Challenges to the Prudence Expected of Pension Fund Trustees. *King's Law Journal*, *33*(1), 92-121.

El-Sayegh, S. M., Manjikian, S., Ibrahim, A., Abouelyousr, A., & Jabbour, R. (2021). Risk identification and assessment in sustainable construction projects in the UAE. *International Journal of Construction Management*, *21*(4), 327-336.

Hu, J. (2022). Application of Modern Portfolio Theory in Stock Market based on Empirical analysis. In *2022 7th International Conference on Financial Innovation and Economic Development (ICFIED 2022)* (pp. 1561-1567). Atlantis Press.

Jankensgard, H., & Kapstad, P. (2021). *Empowered enterprise risk management: Theory and practice*. John Wiley & Sons.

Kabuche, D. (2023). *Longevity Risk: Retirement Product Innovation and Risk Management Strategies* (Doctoral dissertation, UNSW Sydney).

Kajwang, B. (2022). Role of pension management on economic growth: A review of literature. *International Journal of Research in Business and Social Science (2147-4478)*, *11*(6), 635-641.

Kandie, K., Macheru, J., & Osoro, C. (2023). Systematic Risk and Investment Portfolio Performance of Pension Schemes in Kenya. *International Journal of Finance and Accounting*, *8*(2), 51-70.

Kanellopoulos, K. (2022). *Analysis and forecasting of asset quality, risk management and financial stability for the Greek banking system* (Doctoral dissertation, London Metropolitan University).

Khanra, S., Kaur, P., Joseph, R. P., Malik, A., & Dhir, A. (2022). A resource-based view of green innovation as a strategic firm resource: Present status and future directions. *Business Strategy and the Environment*, *31*(4), 1395-1413.

Kimathi, G. J. F. M., & Kathula, D. (2022). Management functions on the performance of retirement benefits schemes in Kenya. *International Academic Journal of Human Resource and Business Administration*, *4*(1), 448-465.

Kiriinya, S. N. (2022). *The Effect of Fiscal Policy on Financial Performance of Pension Schemes in Kenya* (Doctoral dissertation, University of Nairobi).

Koskey, V. J. (2023). *The effect of corporate culture on strategic implementation among government institutions: a case of Retirement Benefits Authority, Nairobi County, Kenya* (Doctoral dissertation, Africa Nazarene University).

Kothari, C. R. (2014). *Research methodology*. New Delhi: New Age international publishers Ltd.

Kumar, S., & Anbanandam, R. (2021). Impact of risk management culture on supply chain resilience: An empirical study from Indian manufacturing industry. *Proceedings of the Institution of Mechanical Engineers, Part O: Journal of Risk and Reliability*, *234*(2), 246-259.

Kure, H. I., Islam, S., & Mouratidis, H. (2022). An integrated cyber security risk management framework and risk predication for the critical infrastructure protection. *Neural Computing and Applications*, *34*(18), 15241-15271.

Kwon, K., Kang, M., Kim, D., & Choi, H. (2023). Prioritization of hazardous zones using an advanced risk management model combining the analytic hierarchy process and fuzzy set theory. *Sustainability*, *15*(15), 12001-12018.

Li, Y., & Henry, D. (2022). Corporate risk management and pension investment policy. *European Management Journal*, *40*(4), 590-605.

Lukomnik, J., & Hawley, J. P. (2021). *Moving beyond modern portfolio theory: Investing that matters*. Routledge.

Lynch, D., Hasan, I., & Siddique, A. (Eds.). (2023). *Validation of Risk Management Models for Financial Institutions: Theory and Practice*. Cambridge University Press.

Macho-Stadler, I., & Pérez-Castrillo, D. (2021). Agency theory meets matching theory. *SERIEs*, *12*(1), 1-33.

Markowitz, H. (1952). The utility of wealth. *Journal of political Economy*, *60*(2), 151-158.

Mashamba, T., & Magweva, R. (2022). Inflation risk management using listed stocks in Zimbabwe. *Journal of Contemporary Management*, *19*(2), 400-419.

Mauchi, F. N. (2022). *The influence of demographic factors and culture on the risk management practices of SMEs in Zimbabwe* (Doctoral dissertation).

Mohd Isa, M. Y., & Daukin, M. (2023). The influence of retirement goals and risk attitudes on Malaysian women's retirement planning. *Cogent Economics & Finance*, *11*(1), 2195041.

Moronfoye, A. (2023). *Risk Management Practices and Performance of Licensed Pension Funds in Nigeria* (Master's thesis, Kwara State University (Nigeria).

Muindi, C. W., & Ambrose, J. (2023). Microcredit Risk Management Strategies and Loan Portfolio Quality of Microfinance Institutions in Kenya. *Journal of Finance and Accounting*, *3*(4), 32-42.

Musa, S. J., & Ibrahim, K. M. (2022). Agency theory and corporate governance: A comparative study of Board diversity and financial performance in Nigeria. *Journal of Positive School Psychology*, *3*(8);10364-10372.

Nguyen, Q. K. (2022). The impact of risk governance structure on bank risk management effectiveness: Evidence from ASEAN countries. *Heliyon*, *8*(10);23-29.

Nocco, B. W., & Stulz, R. M. (2006). Enterprise risk management: Theory and practice. *Journal of applied corporate finance*, *18*(4), 8-20.

Nyabuto, J. (2022). *Effect of Portfolio Diversification on Financial Performance of Pension Funds in Kenya* (Doctoral dissertation, University of Nairobi).

Nyang'oro, O., & Njenga, G. (2022). *Pension funds in sub-Saharan Africa* (No. 2022/95). WIDER Working Paper.

Obasa, O. (2022). Pension management, risks and investment strategies: A study of defined contributory pension scheme in Nigeria. *Journal of Management and Social Sciences*, *11*(1);33-41.

Obondi, K. (2022). The utilization of project risk monitoring and control practices and their relationship with project success in construction projects. *Journal of Project Management*, *7*(1), 35-52.

Rahmani, M. (2024). Modern portfolio theory and its applications in information retrieval. *Iranian Journal of Information Processing and Management*, *39*(3), 865-885.

Ricci, F., Ming, Y., Genserik, R., & Cozzani, V. (2022). The role of emergency response in risk management of cascading events caused by Natech accidents. *Chemical Engineering Transactions*, *91*(5), 361-366.

Ring, P. (2022). Managing risk while fulfilling value creation and sustainability expectations of stakeholders: the case of UK occupational pensions. In *Risk Governance in Organizations: Future Perspectives* (pp. 298-304). universi.

Ring, P. (2024). Risk and private pension provision. In *Global Pension Challenges* (pp. 104-131). Routledge.

Riofrio, M. I. P., Granizo, G. G. U., Mayorga, M. D. L. Á. H., & Alarcón, C. H. M. (2023). Key performance indicators for business financial perspective. *Journal of Namibian Studies: History Politics Culture*, *3*(4), 3917-3940.

Rohman, F., Noermijati, N., Mugiono, M., & Soelton, M. (2023). The role of quality assurance in improving the distribution of organizational performance. *Uncertain Supply Chain Management*, *11*(1), 237-248.

Rusconi, R. (2021). Regulating South Africa's retirement funds: The case for clearer objectives. *South African Journal of Economic and Management Sciences*, *24*(1), 1-10.

Sandwick, J. A., & Collazzo, P. (2021). Modern portfolio theory with sharia: a comparative analysis. *Journal of Asset Management*, *22*(1), 30-42.

Sithole, A., & Lotter, M. (2024). Corporate governance disclosure in a South African public pension fund. *Acta Commercii-Independent Research Journal in the Management Sciences*, *24*(1), 1193-1208.

Solomon, S. J., Bendickson, J. S., Marvel, M. R., McDowell, W. C., & Mahto, R. (2021). Agency theory and entrepreneurship: A cross-country analysis. *Journal of Business Research*, *12*(2), 466-476.

Stansbury, N., Barnes, B., Adams, A., Berlien, R., Branco, D., Brown, D., ... & Adelfio, A. (2022). Risk-based monitoring in clinical trials: increased adoption throughout 2020. *Therapeutic Innovation & Regulatory Science*, *56*(3), 415-422.

Szczepański, M. (2023). Regulatory problems in longevity risk management in the polish pension system. *Economy & Business Journal*, *17*(1), 29-38.

Tipu, W. A., & Yousaf, T. (2022). Agency theory in public-private partnership projects. *Administrative and Management Sciences Journal*, *1*(1), 71-78.

van der Heide, A. (2023). De-Risking Pensions, Managing Assets. In *Dealing in Uncertainty* (pp. 145-160). Bristol University Press.

van Hekken, A., Hoofs, J., & Brüggen, E. C. (2022). Pension participants' attitudes, beliefs, and emotional responses to the new Dutch pension system. *De Economist*, *170*(1), 173-194.

Vasudevan, H. (2021). Resource-based view theory application on the educational service quality. *International Journal of Engineering Applied Sciences and Technology*, *6*(6), 174-186.

Waga, C. S., Memba, F., & Muriithi, J. (2021). Financial Behaviour and Retirement Planning in Kenya, Assessing the Role of Self-Control Bias. *European Scientific Journal, ESJ*, *17*(23), 332-348.

Wambua, S. K., Karuti, J. K., & Kamoni, P. (2024). Influence of Risk Transfer on Financial Performance of Pension Funds in Nairobi, Kenya. *British Journal of Multidisciplinary and Advanced Studies*, *5*(4), 27-39.

Wekhanya, L. A. (2021). *Impact of Retirement Benefits Authority Reforms on Financial Performance of Pension Firms in Kenya* (Doctoral dissertation, University of Nairobi).

Whittle, C. E., & Nel-Sanders, D. (2022). The regulatory framework for enterprise risk management in South African local government. *Africa's Public Service Delivery & Performance Review*, *10*(1), 8-23.

Wijaya, O. Y. A. (2021). Risk management mitigation in the new normal era. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal) Vol*, *4*(1), 1088-1097.

Xakousti, C., Mavrommati, A., & Migdalas, A. (2023). Assessing the efficiency of occupational pension funds in Greece. *Oper. Res.*, *23*(4), 66-73.